SECOND FIVE-YEAR REVIEW REPORT

for

Former Army Sudbury Training Annex Sites
Sudbury, Massachusetts

September 2006

Prepared for:

U.S. Army BRAC Environmental Office
30 Quebec Street, Box 100
Devens, Massachusetts 01432

Prepared by:

U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Approved by:

Date:

22 September 2006

Robert J. Simeone
BRAC Environmental Coordinator – Devens
Army Base Realignment and Closure Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
1 CONGRESS STREET, SUITE 1100 (HBT)
BOSTON, MASSACHUSETTS 02114-2023

September 25, 2006

Mr. Robert Simeone, BEC
BRAC Environmental Office, DAIM-BO-A-DV
30 Quebec St., Bldg 666, Box 100
Devens, MA 01434

Re: Second Five-Year Review Report (2001-2006) for the Former Ft.Devens-Sudbury Training Annex

Dear Mr. Simeone:

This office is in receipt of the Army's Second Five-Year Review Report for the former Ft.Devens-Sudbury Training Annex, dated September 2006. Upon review of this report, EPA concurs with the findings that all CERCLA remedies which have been implemented are protective of human health and the environment. EPA also concurs with the Army's plan to further evaluate the historical groundwater database to determine if the new MCL for arsenic triggers additional work or if site-wide background levels are consistent with groundwater data from study areas P31 & P58. This evaluation is expected in May 2007.

This second five-year review was triggered by the first five year review, signed on September 25, 2001. Consistent with Section 121(c) of CERCLA and EPA's *Comprehensive Five-Year Review Guidance* (OSWER *Directive 9355.7-03B-P)*, the next statutorily required five-year review must be finalized by September 29, 2011.

Sincerely,

Susan Studlien, Director
Office of Site Remediation and Restoration

cc: Bryan Olson, EPA-New England
Mary Sanderson, EPA-New England
Christine Williams, EPA-New England
Katherine Garufi, EPA HQ
Robert Campbell, MassDEP

DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
1347 THORNE AVENUE SW, BLDG 243
FORT MCPHERSON, GEORGIA 30330-1062

22 September 2006

Reply to the order of
BRAC Environmental Office
DAIM-BO-A-DV
30 Quebec Street, Box 100
Devens, MA 01432

SUBJECT: *Final* Second Five-Year Review (FYR) Report for Former Army Sudbury Training Annex (STA) Sites, Sudbury, Massachusetts, September 2006

Ms. Christine Williams
U.S. Environmental Protection Agency
1 Congress Street
Suite 1100 (Mailcode HBT)
Boston, Massachusetts 02114-2023

Dear Ms. Williams:

Please find attached three (3) copies of the *final* 2006 Five-Year Review Report. Comments received from the USEPA and MADEP on the *draft* version have been addressed in the previously forwarded electronic copy of the *draft final* version and as noted in the Response-to-Comments (see Appendix of the report).

We appreciate EPA's timely review and assistance in resolving technical issues and finalizing the FYR report recommendations that ensure the STA sites will remain protective of human health and the environment. Please do not hesitate to contact me at 978-796-2205, should you have any questions.

Sincerely,

ROBERT J. SIMEONE
BRAC Environmental Coordinator
Devens Reserve Forces Training Area

CF w/o Atch:
Ms. Libby Herland
U.S. Fish and Wildlife Service
Eastern Massachusetts NWR Complex
73 Weir Hill Road
Sudbury, MA 01776

US Army Corps
of Engineers®
New England District

2006
FIVE-YEAR REVIEW

SECOND FIVE-YEAR REVIEW REPORT
FOR
FORMER ARMY SUDBURY TRAINING ANNEX SITES,
SUDBURY, MASSACHUSETTS

September 2006

PREPARED BY:

DEPARTMENT OF ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS 01742

Second Five-Year Review Report for Former Army Sudbury Training Annex Sites Sudbury, Massachusetts

FIGURES

CHARTS

TABLES

Tables ES-1, ES-2, ES-3, ES-4 follow immediately after the Executive Summary

PHOTOGRAPHS

APPENDICES

List of Acronyms and Abbreviations

1,1,2,2PCA	1,1,2,2-tetrachloroethane
1,2-DCA	1,2-dichloroethane
ABB	ABB Environmental Services, Inc (part of the former Asea Brown Boveri company)
ACM	Asbestos-containing materials
ags	Above ground surface
AMRO	Testing laboratory based in Merrimack, New Hampshire
amsl	Above mean sea-level
AOC	Area of Contamination; Area of Concern
ARARs	Applicable or relevant and appropriate requirements
ARMY	U.S. Army
ASTs	Above-ground storage tanks
AWQC	Ambient Water Quality Criteria
BCT	Base Closure Team
BEC	BRAC Environmental Coordinator
bgs	Below ground surface
BNAs	Base/neutral/acid compounds
BRAC	Base Realignment and Closure Commission

Buildings by Number

Buildings

S449: located at P57.
T104: associated with AOC P36.
T206: located at P17.
T209: UST at AOCP3.
T210: located at P53
T223: across from AOC P1.
T267: at AOC P2.
T405: associated with P11 .
T406: near P11
T409: near P11
T452: located at P40
T463: test chamber building at P25
T465: located at P23

Bunkers:

302: bunker located at AOC P16
303: bunker located at AOC P41
305: bunker associated with AOC P54
306: bunker located at AOC P16
307: bunker associated with AOC P54
309: bunker located at AOC P16
313: bunker located near AOC P56
314: bunker associated with AOC P54
319: bunker located near AOC P59
323: bunker located near AOC P49
347: bunker located at AOC P4
349: bunker located at AOC P4

List of Acronyms and Abbreviations (Continued)

CENAE	U.S. Army Corps of Engineers, New England District
CFHA	Capehart Family Housing Area
COCs	Contaminants of Concern
COCs	Chain-of-custody forms
CX	Categorical exclusion
cy	cubic yard(s) (also yd^3)
DDD	Dichlorodiphenyldichloroethane, also called 1,2-bis(4-chlorophenyl)-2-dichloroethane
DDE	Dichlorodiphenylethene, also called l,2-dichloro-2,2-bis(4-chlorophenyl) ethane
DDT	Dichlorodiphenyltrichloroethane
DOD	Department of Defense
EAR	Enhanced Area Reconnaissance
EAR-NC	Enhanced Area Reconnaissance - No Contamination
E&E	Ecology and Environment
EE/CA	Engineering Evaluation/Cost Analysis
e-mail	Electronic mail
EPA	U.S. Environmental Protection Agency
ERL	Effects-Range Low
ESS	ESS Laboratory, division of Thielsch Engineering, Inc.: chemical laboratory based in Cranston, Rhode Island
EWT	Environmental Waste Technology
FEMA	Federal Emergency Management Agency
FFA	Federal Facilities Agreement
FRA-NR	Full Risk Assessment - No Risk
ft	Foot or feet
ft^2	Square feet
ft^3	Cubic feet
GZA	GZA Geoenvironmental Inc
HLA	Harding Lawson Associates
HMX	High Melting Point Explosive (Octahydro-l, 3,5,7-tetranitro-l, 3,5,7-tetrazocine)
IC	Institutional control
IRP	Installation Restoration Program
Lindane	Gamma-BHC, also known as gamma-hexachlorocyclohexane
LTMMP	Long-term monitoring and maintenance plan
MADEP, MassDEP	Massachusetts Department of Environmental Protection
MCL	Maximum Contaminant Level
MCP	Massachusetts Contingency Plan
MFFA	Massachusetts Fire Fighting Academy
mg/g	Milligrams per gram, also parts per thousand
mg/kg	Milligrams per kilogram, also parts per million (ppm)
MOA	Memorandum of Agreement
Natick Labs	U.S.Army Natick Research and Development Command
NCF	No Contamination Found
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NFADD	No Further Action Decision Document

List of Acronyms and Abbreviations (Continued)

NOAA	National Oceanic and Atmospheric Administration
NPL	National priorities list
O&M	Operations and maintenance
OMEE LEL	Ontario Ministry of the Environment Lowest Effect Level.
OUs	Operable units
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PCE	Tetrachloroethene
PCD	Photoionization detector
POL	Petroleum, oil, lubricants
ppm	Parts per million
PREs	Preliminary risk evaluations
RAAs	Remedial Action Alternatives
RA-CS	Removal Action - Confirmatory Sampling
RBC	Risk-based concentration
RCRA	Resource Conservation and Recovery Act
RDX	Royal Demolition Explosive (Hexahydro-1 ,3,5-trinitro-l ,3,5-triazine)
RI	Remedial Investigation
RTSC	Risk Threshold Screening Concentration (concept used in arsenic study)
ROD	Record of Decision
S&W	Stone & Webster
SC	Source control
SMCLs	Secondary maximum contaminant levels
SSI	Screening site investigation
STL	Severn Trent Laboratory Services, Inc., a chemical lab with offices in Colchester Vermont.
SVOCs	Semivolatile organics
TAL	Target analyte list
TCE	Trichloroethene
TCLP	Toxicity characteristic leaching procedure
TOCs	Total organic compounds
TPH	Total petroleum hydrocarbons
TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency
USAF	United States Air Force
USAFCRL	USAF Cambridge Research Laboratory
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground storage tank
VAT	Vinyl asbestos tile
VOCs	Volatile organic compounds
WESTON	Roy F. Weston, Inc.

List of Acronyms and Abbreviations (Continued)

XRF	X-ray fluorescence
yd^3	Cubic yard(s)
µg/g	Micrograms per gram (also parts per million (ppm) or milligrams per kilogram (mg/kg))
µg/L	Micrograms per liter (also parts per billion (ppb))

EXECUTIVE SUMMARY

This is the second five-year review for the Sudbury Training Annex site. The purpose of a five-year review is to determine whether the remedy at a site is protective of human health and the environment. The time period for this review covers July 2001 to September 2006. This report reviews existing memoranda of agreement with current land owners at the Sudbury Annex and provides a statutory review for the landfill at AOC A7. There are 73 AOCs at the former Annex, and there was an Annex-wide arsenic study concluded in 1999. A complete list of the sites identified at the former Sudbury Training Annex and their remedial histories is included in Table 1. Additionally, the arsenic study and eight of the AOC histories are included in extended summaries in Appendix F. The triggering action for the statutory review at AOC A7 is the initiation date of the construction of the landfill cap on July 31,1996. The previous five-year review had anticipated, based on existing no further action decision documents and Records of Decision, that there would be no need for a review of most of the sites, and thus a majority of the sites are covered only in Table 1.

The Sudbury Annex is currently controlled by the US Fish and Wildlife Service, the US Air Force, the Federal Emergency Management Agency and the US Army. The Annex was removed from the NPL in January 2002. The Army continues to report annually on the condition of the whole annex, and maintains contact with the land owners as specified in the most recent addendum to the long-term monitoring and maintenance plan (LTMMP).

Conditions at the seventy-three AOCs currently are protective of human health and the environment. Elevated levels of arsenic in soil are in place as an artifact of the use of herbicides containing arsenic during the 1940s and possibly the 1950s at Perimeter Road and former railroad beds in the area. This has led to elevated arsenic concentrations in surface soils that received properly applied herbicides. USFWS maintains an institutional control that bars development along these corridors.

During the five-year period under review (mid-2001 to mid-2006), AOC A7 was subject to semi-annual inspection by qualified geotechnical engineers, semi-annual sampling of groundwater at thirteen wells, and a program of annual grass mowing. Maintenance activities also have included the decommissioning of two wells at AOC A7, removal of discarded materials at the landfill, placement of mesh netting over the four passive gas vents to prevent access by insects (bees), repairs to maintain the integrity of the constructed wetland by Girl Scouts under the supervision of USFWS, removal of fallen tree limbs from the fence, and maintenance of the integrity of the institutional controls by replacing damaged sections of the AOC A7 fence.

The landfill has remained in good condition through 2006, and it continues to function as intended by the records of decision. The AOC A7 site remains protective of human health and the environment. Contaminant concentrations that were of concern in 2001 have declined, and many no longer exceed the Massachusetts GW-1 standards. Accordingly, the level of monitoring has decreased (fewer sampling events per annum, for fewer analytes in fewer wells).

Changes to both State and Federal requirements do not require any changes to the current monitoring program at AOC A7. The sampling changes that have been made were based on limiting the amount of information needed to monitor the site effectively.

The 2006 Five-Year Review recommends:

- Continued semi-annual measurements of water levels in all 12 wells at the AOC A7 site;
- Continued annual sampling of 7 of the existing 12 wells at the AOC A7 site;
- Installation of a thirteenth well at the AOC A7 site, to be located as a background well and sampled annually;
- Continued review of the appropriateness of the wells to be sampled and the analytes to be designated;
- Continued semi-annual inspections and annual assessments of the integrity of the institutional controls;
- Continued semi-annual gas monitoring of the 4 passive gas vents at AOC A7;
- Further evaluation of arsenic in groundwater in the vicinity of AOC P58 is required to assess the protectiveness of current conditions, since the standard for arsenic in drinking water has recently changed.

The Five-Year report summary form is included as Table ES-1. Operable Unit 1 (OU1) has issues that are listed in Table ES-2, with Recommendations and Follow-Up Actions listed in Table ES-3. Protectiveness Statements are listed in Table ES-4 for both OU1 and for the other AOCs at the former Annex.

Table ES-1: Sudbury Training Annex 2006 Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: **Ft. Devens-Sudbury Training Annex**		
EPA ID *(from WasteLAN)*: **MAD980520670**		
Region: 1	**State: MA**	**City/County: Sudbury/Middlesex County**
SITE STATUS		
NPL status: ☐ Final **xx Deleted** ☐ Other (specify)		
Remediation status (choose all that apply): ☐ Under Construction ☐ Operating **xx Complete**		
Multiple OUs?* **xx YES** ☐ NO	**Construction completion date:** 09 / 19 / 2000	
Has site been put into reuse? xx YES ☐ no		
REVIEW STATUS		
Lead agency: ☐ EPA ☐ State ☐ Tribe **x Other Federal Agency: US Army**		
Author name: US Army Corps of Engineers		
Author title:	**Author affiliation: Army contractor**	
Review period:** July 2001 to September 2006		
Date of site inspections: 10/23/2001; 04/22/2002; 10/22/2002; 04/22/2003; 10/07/2003; 10/07/2003; 04/15/2004; 10/13/2004; 06/01/2005; 09/15/2005; 10/19/2005; 04/26/2006; 05/04/2006; (08/25/2006 with MassDEP and EPA)		
Type of review: **xx Post-SARA** ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		
Review number: ☐ 1 (first) **xx 2 (second)** ☐ 3 (third) ☐ Other (specify) _____		
Triggering action: ☐ (prev: Actual RA Onsite Construction at OU #01) ☐ Actual RA Start at OU#____ ☐ Construction Completion **XX Previous Five-Year Review Report, which followed actual RA Onsite Construction at OU#01** ☐ Other (specify)		
Triggering action date *(from WasteLAN)*: 09 / 25/ 2001		
Due date *(five years after triggering action date)*: 09 / 25/ 2006		

Table ES-2: Operable Unit 1 Issues

Issues (all relate to AOC A7)	Affects Protectiveness (Y/N)	
	Current	Future
USACE proposed changes to the frequency of sample collection, to the number of wells sampled, and to the suite of analytes. EPA accepted these changes, which were implemented in the fall of 2005. A revised LTMMP is being prepared by the Army and is scheduled for completion in October 2006.	N	N
Trees and bushes growing in close proximity to the fence; recent felling of a large oak tree in the vicinity of JO-A07-M63	N	N
An empty and discarded drum along the eastern side of the AOC A7 enclosure	N	N
There are five wells in degraded condition. These are OHM-A7-10, OHM-A7-12, JO-A07-M61, JO-A07-M62, and JO-A07-M63. Damage includes evidence of surface water and debris infiltration in some wells; failing surface seals; and possible siltation, causing reductions in well efficiencies.	N	N
The existing monitoring well network appears appropriate to monitor long-term groundwater trends at and downgradient of the landfill with the exception that an upgradient monitoring well is required by MassDEP regulation. The lack of an upgradient monitoring well does not create a critical data gap regarding contaminant migration at the landfill, but does leave unanswered any potential changes created by modifications upgradient to the site.	N	N
Report not completed of 2006 inspection of the replicated vernal pool	N	N

Table ES-3: Operable Unit 1 Recommendations and Follow-up Actions

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
Revise LTMMP	Army	EPA & State	December 2006	N	N
Remove trees near fenceline	Army	EPA & State	April 2007	N	N
Remove the empty and discarded drum along the eastern side of the AOC A7 enclosure	Army	EPA & State	April 2007	N	N
Perform required maintenance on wells OHM-A7-10, OHM-A7-12, JO-A07-M61, JO-A07-M62, and JO-A07-M63	Army	EPA & State	April 2007	N	N
Install upgradient well	Army	EPA & State	April 2007	N	N
Complete and submit the 2006 vernal pool inspection report	Army	EPA & State	November 2006	N	N

Table ES-4: Sudbury Training Annex Five-Year Review Protectiveness Statements

Protectiveness Statements	
OU1 (AOC A1)	The remedy at OU 1 is protective of human health and the environment.
Other AOCs	The remedy at AOC P31/P58 currently protects human health and the environment because previous studies have determined that arsenic is not migrating offsite in the groundwater. However, in order for the remedy to be protective in the long-term, the following actions need to be taken: 1. Evaluate previous data from P58 and P31 monitoring wells and site-wide background data to determine if the site is protective of human health and the environment, given the revised Massachusetts GW-1 arsenic standard and the information available in the arsenic background study and site-specific studies. 2. Determine if restrictions were placed on State deed for park adjacent to P-58 and place land use restrictions if needed.

1.0 INTRODUCTION

The US Army Corps of Engineers New England District (CENAE) has conducted this second five-year review of the remedial actions implemented at the former Sudbury Training Annex site in Sudbury, Massachusetts (Figure 1). The review is conducted in accordance with the Comprehensive Environmental Response, Compensation and liability Act (CERCLA 1980), the National Contingency Plan (NCP), and relevant U.S. Environmental Protection Agency (EPA) guidance (EPA 2001 a, EPA 2003, EPA 2004a, EPA 2004b, EPA 2005).

This second five year review covers the time period July 2001 to June 2006. The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. In addition, five-year reviews identify deficiencies, if any, that are found during the review, and make recommendations to address the deficiencies. This review is required by the CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) since the following conditions are true:

- Upon completion of the remedial action, hazardous substances, pollutants, or contaminants will remain on site; and

- The Record of Decision (ROD) for the site was signed on or after October 17, 1986 (the effective date of the Superfund Amendment and Reauthorization Act [SARA]) and the removal action was selected under CERCLA 121.

Five-Year Reviews also should be conducted as a matter of policy for the following types of actions:

- A pre-or post-SARA remedial action that, upon completion, will not leave hazardous substances, pollutants or contaminants on site above levels that allow for unlimited use and unrestricted exposure, but requires five or more years to complete;

- A pre-SARA remedial action that leaves hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure;

- A removal-only site on the National Priorities Listing (NPL) where a removal action leaves hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure and where no remedial action has or will take place.

This second five year review focuses on sites to be reviewed in accordance with EPA guidance (EPA 2001 a, 2003, 2004a, 2004b, 2005). This review includes an outline of agreements made with new owners in conjunction with property transfers to USFWS, USAF, and FEMA, and a statutory review of the consolidated contents of the AOC A7 landfill.

Two records of decision were prepared for AOC A7. The ROD for the Source Control (SC) Operable Unit for AOC A7 and A9 was generated in August 1995 (OHM 1995b), and the ROD for Management of Migration (MOM) was generated in 1997 (OHM 1997). The intent of the SC ROD was to cap the landfill in order to minimize infiltration of precipitation into the landfill contents and mitigate potential

for direct contact exposures by human or animal receptors with the landfill waste. The SC ROD also defined the need for long term monitoring and maintenance of the remedy. Contaminated materials from several other AOCs were consolidated at AOC A7 during the creation of the capped landfill. The MOM ROD supported the no action decision for control of groundwater migration subsequent to construction of the landfill cap. Thus, the long term monitoring program and institutional controls with periodic reviews are required under the SC ROD, but no remedy is required to control groundwater migration.

Statutory review of the landfill initiated with the construction of the landfill cap at Sudbury Annex Area of Contamination (AOC A7) on July 31, 1996. The other AOCs are described, including their current dispositions, in Table 1.

Appendix F contains extended summaries of the Annex-wide arsenic study and of 8 additional sites where the history of site characterizations and/or removal actions has left the land unsuitable for unrestricted use. These sites are AOCs Al 1, A12, PI, P4, P27, P28 and the combined AOCs P31/P58. Review also is presented in Appendix F for elevated levels of arsenic applied as herbicide at the fence line on the perimeter road, and the former railroad beds, as investigated during 1995 to 2001 and documented in reports generated during 1996 to 2001. The current disposition of the 73 AOCs is included in Table 1.

2.0 SUDBURY TRAINING ANNEX

The Sudbury Training Annex was placed on the EPA National Priorities List (NPL) as a Superfund Site in 1990 and in May 1991 the Army signed an Interagency Agreement with the EPA stipulating that site investigations and cleanup actions would follow CERCLA and its amendments under the regulatory guidance of the NCP 40 CFR Part 300. In addition, a Technical Review Committee (TRC) was formed at the time of the agreement. Figure 2 is a map of the Sudbury Training Annex with the site locations.

In 1995 the Sudbury Training Annex was placed on the Base Realignment and Closure (BRAC) list under BRAC95. The plans were for the Sudbury Training Annex to be transferred in three parts to (1) the United States Fish and Wildlife Service (USFWS) 2205.2 acres, (2) U.S.Air Force (USAF) 4.15 acres and (3) the Federal Emergency Management Agency (FEMA) 71.5 acres.

Puffer Pond (approximately 24 acres), which is defined by Massachusetts' law to be a Great Pond (i.e., a natural pond with an area of 20 acres or more), is owned by the Commonwealth of Massachusetts and is wholly located within property that has been transferred to USFWS. The property transfer documents include details of environmental responsibilities of the agencies involved. For ease of reference, the agreements (MOA 2000; Transfer Agreement 2002; Modification to MOA 2003 and MOA 2003) are included in Appendix D of this Five-Year Review. They are summarized in Section 2.3 below.

The Sudbury Training Annex comprises 73 AOCs including eight that were grouped into 5 Operable Units (OUs):

- OU1 AOCA7- Old Gravel Pit Landfill
- OU2 AOCA9- Petroleum, oil, lubricants (POL) Burn Area
- OU3 AOCA4- Waste Dump
- OU4 AOC P11 - Building T405 Dump Area
  AOC P13 - Massachusetts Fire Fighting Academy (MFFA)
- OU5 AOCA12- Abandoned underground storage tank (UST) at Site A9;
  AOC P36 - Former Raytheon Building Tl04
  AOC P37 - Building Tl06 UST

Sixty-five AOCs, not associated with any of the five CERCLA OUs, were closed out by No Further Action Decision Documents (NFADDs) signed by the Base Closure Team (BCT), and were listed in the 2001 Five-Year Review (Weston 2001). A Source Control ROD for OUs 1 and 2 (A7 and A9) was signed in 1995 by the Army and EPA, with MassDEP concurrence. A Management of Migration ROD for OUs 1 and 3 (AOCs A7 and A4) was signed by the Army and EPA with MassDEP concurrence in 1997. The OU3 ROD was signed by the Army and EPA September 1997 with MassDEP concurrence. OU4 and OUS RODs were signed by the Army and EPA in September 1996 with MassDEP concurrence. A complete list of the 73 AOCs, with their current conditions, is included in Table 1. The Five-Year Review conducted in 2001 included a map that showed the locations of all 73 AOCs in the Sudbury Training Annex. This figure is reproduced in this report as Figure 2. See Figure 2a for the location of AOC A7 and a delineation of areas controlled by FEMA, USAF, and USFWS, and locations of AOCs P31 and P58.

Sudbury Training Annex was removed from the National Priority List (NPL) ("Superfund" list) on November 30, 2001, through EPA publication in the Federal Register of a deletion notice of the Sudbury Training Annex from the NPL (EPA 2001 (b)). The action became effective January 29, 2002.

2.1 Physical Characteristics

The former Army Sudbury Training Annex lies in Middlesex County, Massachusetts, some 20 miles west of Boston, and occupies approximately 2,300 acres within the towns of Hudson, Stow, Maynard and Sudbury, Massachusetts (see Figure 1 for Site Locus Map). In areas where developed land is adjacent to the Sudbury Training Annex, the development is residential. The combined population of these four towns, based on the 2000 annual census, is approximately 50,000 (Commonwealth of Massachusetts 2004a, 2004b, 2004c, 2004d).

2.2 Land and Resource Use

The Sudbury Training Annex became a military installation in the early 1940s as the Maynard Ammunition Depot. During World War II, the Sudbury Training Annex was used for holding munitions, and after the war it became known as the Maynard Ordnance Test Station. In 1958, the command was turned over to U.S. Army Natick Research and Development Command (Natick Labs). Between 1980 and 1983, custody of most of the Sudbury Training Annex was turned over to Fort Devens. The installation has been used for troop training, product and equipment testing, munitions/explosives testing, disposal, and disposal of wastes from Natick Labs. The Sudbury Training Annex contains 50 concrete ammunition bunkers and 27 abandoned buildings. The majority of the Annex is controlled by US Fish and Wildlife Service (USFWS) and is currently open to the public as a wildlife preserve, with seasonal hunting.

2.3 Land Transfer Documents

The land transfer documents are presented in Appendix D and briefly summarized in this subsection.

2.3.1 US Fish and Wildlife Service (USFWS)

A memorandum of agreement (MOA) was signed by USFWS on 28 September 2000 that transferred 2,205.2 acres to USFWS. The MOA is composed of several sections as follows:

Section A - Provides that the land being transferred should be included in the National Wildlife Refuge System, in keeping with the USFWS determination that the parcel is of value in the national migratory bird management program.

Section B - Provides that the transfer would occur at no cost.

Section C - Is composed of twelve sub-sections, as briefly summarized below.

Sub-Section 1 provided for the exchange of information on the AOCs. The Federal Facilities Agreement (FFA) of November 1991 to USFWS would prevail in cases where its provisions were found to be in conflict with the MOA.

Sub-Sections 2 and 3 indicated that the Army retained responsibility for costs or fines that might be incurred in the future, exclusive of hazardous materials placed at the parcel subsequent to the MOA agreement.

Sub-Section 4 indicated that the Army retained a right of access to the whole property to maintain and monitor the various environmental cleanups, with similar access provided to EPA and MassDEP to address requirements under the FFA. USFWS would be informed of any work planned at the parcel. Prior to completion of all CERCLA cleanup actions USFWS would inform the Army and EPA of any development plans. The rights of access would be maintained in any transfer to subsequent owners.

Sub-Section 5 provided for localized land use restrictions due to application of arsenic-based herbicides. No portion of a 50-foot strip of land on either side of the center of the fence line along Patrol Road or the former railroad beds would be used for residential habitation unless the owner could demonstrate that the use was protective of human health and the environment.

Sub-Section 6 indicated that disturbing the soil below a 4-ft depth should be prohibited to avoid contact with ordnance and explosives (OE). The Army would retain responsibility for necessary OE mitigation to the 4-ft depth. Removal of deeper OE would be undertaken at USFWS (or subsequent owner) expense.

Sub-Section 7 indicated that the Army believed the Annex was suitable for transfer under CERFA (Community Environmental Response Facilitation Act) Category 1 parcels (uncontaminated) parcels, and Category 3, 4, 5, and 7 (contaminated) parcels. The Army had completed asbestos and unexploded ordnance cleanup work and would provide documentation to USFWS.

Sub-Section 8 provided that the landfill structure and drainage system would not be disturbed, and that groundwater use at the site would be limited to monitoring efforts. Any activity that might mobilize or enhance the transport of the waste at the landfill structure was to be prohibited prior to written sanctions by the Army and the EPA.

Sub-Section 9 acknowledged USFWS receipt of the Army's January 16,1997 Record of Environmental Consideration.

Sub-Section 10 The existing buildings on the Annex were transferred to USFWS without regard to their current condition, except as previously outlined in the MOA where environmental cleanups might still be in progress.

Sub-Section 11 assigned responsibility to USFWS for any remaining cleanups of asbestos-containing materials (ACM), lead-based paint, or PCBs in small electrical fixtures in the buildings on the property.

Sub-Section 12 assigned responsibilities to USFWS to comply with federal laws and regulations regarding pertinent designations on the National Register of Historic Places.

Sections D and E - the Army and USFWS agreed to assign individuals as representatives for matters pertaining to the former Annex; USFWS agreed to allow the Army access to the property for any continuing remedial environmental work.

Sections F and G - provided out contact information; signatures were in Section H.

2.3.2 US Air Force (USAF)

The Transfer Agreement with the USAF was signed June 5, 2002. It covers the transfer of 4.148 acres at which the Air Force had operated a radar/weather station. The Army provided a copy of the FFA to the Air Force, and agreed to inform the Air Force of any changes to the FFA. The Army retained a right to access the property in order to work on environmental cleanups arising from FFA requirements. The Air Force assumed none of the environmental liability from the Army's former use of the Annex; the Army assumed none of the environmental liability from the Air Force's former use of the property being transferred.

The Air Force acknowledged receipt of the Army's complete Environmental Baseline Study (BBS) for the Property dated January 27,1997 and of the Environmental Condition of Property (ECOP) dated February 1, 2001. The ECOP reflected the Army's position that the property was suitable for transfer as a CERFA Category 4 parcel. The Army provided the Record of Environmental Consideration (REC) for the transfer to the Air Force. The Air Force assumed responsibility to complete Army's partial inventory of historic properties.

The land was transferred without regard to the condition of the existing buildings, whose upkeep became the responsibility of the Air Force. The Air Force would be allowed access to all roads inside the former Annex through the Army's easement agreement with the USFWS. The Army relinquished responsibilities for maintaining roads to the Air Force.

2.3.3 Federal Emergency Management Agency (FEMA)

The MOA with FEMA was signed March 31,2003 and amended July 29,2003. The March 31 MOA covered the transfer of 71.525 acres of land in five non-contiguous parcels, including Parcel I, a parcel at which FEMA had occupied the land under permit since the "use permit date" of May 27 1980. The developed FEMA parcel included two large buildings (one above ground and one below ground), several communications antennas, and other structures and improvements.

Based on the BRAC Cleanup Plan Report (October 1996), a Record of Environmental Condition (January 16,1997), the Environmental Baseline Survey (BBS) of January 1997, and an Environmental Condition of Property (ECOP) (August 2002), the Army determined that the land was suitable for continued use by FEMA as a management and training center. The Army and FEMA agreed to the terms of the Sudbury Training Annex Federal Facilities Agreement (FFA). The Army would notify EPA and MassDEP of any changes to the MOA. FEMA assumed responsibility for any environmental issues arising from their use of Parcel I after the use permit date. From March 31, 2003, FEMA assumed responsibility for all asbestos-containing materials (ACM), lead-based paint, and/or PCBs in the FEMA buildings.

The Army, EPA, and MassDEP would have access rights to FEMA property for environmental investigations and response actions, performing five-year reviews under CERCLA, and additional response actions under the FFA. FEMA would accept provisions of any institutional controls that might be put in place by the Army at the FEMA parcels, and FEMA would ensure Army access to any sites for remedial cleanup purposes, even if the property changed hands.

FEMA acknowledged the history of the use of arsenic-based herbicides near the fence-line along Patrol Road and on the former railroad beds. The Army stated that historical use of pesticides at the Parcels

had been in accordance with the pesticides' intended purposes, and had not left any pesticide residue that would be an unacceptable risk to human health or the environment. FEMA agreed to comply with all applicable laws relating to hazardous substances/pesticides and hazardous wastes. There were no known hazardous materials left at the site: FEMA (and successors) assumed responsibility for their buildings, including assessment of lead paint.

FEMA acknowledged the Army's assessment (Final UXO Characterization Report of 18 February 1998 that there was no evidence of the Annex's continued contamination by OE materials and so could be transferred from Army control without further unexploded ordnance (UXO) activities. 18 magazines not near the FEMA parcel needed inspection prior to transfer. FEMA (or successor owners) agreed not to disturb the soil below a depth of 4 feet to avoid UXO. FEMA could petition the Army to approve plans that required any such disturbances, and to provide OE safety assistance and UXO removal services at depths of less than 4 feet on the FEMA property.

FEMA assumed responsibility to protect the known archeological sites on the property and to establish their eligibility for inclusion on the National Register of Historic Places.

The Army retained responsibility for any environmental pollution at Parcel I prior to the use permit date in 1980 and at the other parcels prior to March 21, 2003. The Army's responsibility extended to investigations, remediation, monitoring and maintenance of sites in the FEMA parcels as needed to ensure the protection of human health and the environment. FEMA assumed responsibility for any environmental pollution after the noted dates. FEMA agreed to accept the buildings on the property in their current condition, accepting only that the Army believed them to be suitable for transfer. Restrictions imposed on FEMA would be written into land transfer documents to any later owners.

In the amendment to the MOA July 29, 2003, sections of the MOA describing arsenic contamination and the agencies' responses to it were changed to clarify the intention that no portion of the FEMA parcel would be used for either residential habitation or for use by children under 6 years of age, since the FEMA parcel was remediated only for general business office operations and training purposes.

3.0 AOC A7- OLD GRAVEL PIT LANDFILL - STATUTORY FIVE-YEAR REVIEW

This section discusses the history and remedy at AOC A7, formerly known as the Old Gravel Pit Landfill.

3.1 Site Physical Characteristics

AOC A7 is located near the northern boundary of the installation between Patrol Road and the Assabet River within the town of Stow; see Figure 3 - AOC A7 Site Map. The Stow Away golf course lies on the other side of the Assabet River across from AOC A7.

Green Meadow elementary school is located approximately 1.2 miles northeast of the boundary of AOC A7, Maynard High School is approximately 1.45 miles to the northeast, and Saint Bridget's School is located 1.3 miles to the northeast.

The Old Gravel Pit Landfill resides in a 10 acre fenced area. The fence is constructed of 10-ft tall chain link topped with barbed wire. A thin strip of forest separates AOC A7 from Patrol Road. Forest also surrounds the remaining sides of the site. Entrance to the site is made from Patrol Road through a locked gate on an unpaved access road.

The landfill is located on the northern toe of a hill that slopes downward to the Assabet River. A drainage swale surrounds the landfill cap. The swale collects precipitation runoff from the landfill cap and redirects it toward the toe of the slope. The landfill cap is vegetated with grasses and is mowed annually (see photo).

A wetland of approximately 50 x 60 feet is located at the base of the landfill, contained within a north facing berm reinforced with large boulders. This area approximates the size of the former Wetland B that was eliminated during the remediation of the landfill. The topography slopes from the berm down to the Assabet River. Wetland B formerly provided a vernal pool habitat that is sustained by the replacement wetland. Additional information is provided in the most recent wetland inspection report conducted in September 2004 (Appendix A).

3.2 Site Chronology

A summary of the chronology of AOC A7 is presented in Table 2.

3.3 History of Contamination

AOC A7 was used as a dump for general refuse, demolition debris and chemical lab waste disposal. The lab waste area was limited to a pit of about 5,000 square feet (ft^2). General refuse was reportedly buried at shallow depths from 1941 until the 1980s, with occasional burning to reduce volume. AOC A7 was also used by the public, for unauthorized surface dumping during the 1970s, until access was restricted. Another dump area, AOC P8, is located within AOC A7 (WESTON 1997).

Table 2. Chronology of Site Events at AOC A7

Event	Date
USAEC Site Assessment - designated AOCs Al through A11	1980
USAEHA Hydrogeological and Subsurface Investigation of AOCs A1 through A11	1983
NUS conducted PA/SI	PA (1985), SI (1987)
Dames & Moore completed RI for AOCs A1-A11 and potential contamination sources in the vicinity of the Capehart Family Housing Area (CFHA), Puffer Pond, and associated streams.	1986
Listed on NPL	21 February 1990
Expanded RI - Dames & Moore	1990
Federal Facilities Agreement signed	November 1991
ROD - Source Control OU for AOC A7 and AOC A9	August 1995
Landfill cap completion	July 1996
ROD - Management of Migration OUs for AOC A7 and AOC A9	September 1997
Monitoring Well Installation	1992-96
Long term groundwater monitoring	October 1997 to present
Long Term Monitoring & Maintenance Plan	April 1998
MOA for transfer of property from US Army to US Fish and Wildlife Service	28 September 2000
First Five-Year Statutory Review	September 2001
Withdrawn from NPL [Federal Register: November 30, 2001 (Volume 66, Number 231)] [Rules and Regulations] [Pages 597 16-59719]	30 November 2001; effective 29 January 2002
Transfer Agreement between US Army and US Air Force for a portion of the former Fort Devens (Sudbury Training Annex)	3 June 2002 (USAF signature dated 5 June 2002)
Decommissioning of Wells OHM-A7-13 and OHM-A7-07	June 2002
Letter of Transfer for a portion (five FEMA parcels) of the former Fort Devens to the Federal Emergency Management Agency	31 March 2003
Modification to Memorandum of Agreement between US Army and FEMA for the transfer of real property at Sudbury Training Annex	FEMA signature dated 29 July 2003
Second Five Year Review	2006

AOC A7 was used as a general refuse and laboratory dump. Disposal of drums and other chemical containers was carried out between the late 1950s and 1971. It was indicated by Natick Labs employees that quart to gallon-sized metal and glass containers of chemicals from the Natick Labs were disposed of in this area on a weekly basis (OHM, January 1994).

Occasionally, a house cleaning would take place at the laboratory and excess chemicals and waste temporarily stored in a bunker would also be disposed, possibly in this area.

Prior to 1991, this site had also been used as a recreational area by local residents. Dirt bike tracks, shotgun shells, bullet riddled waste, and hunters have been noted in this area. In October 1991, as a site control measure, AOC A7 was enclosed by a 10-ft tall chain link fence with barbed wire.

Surface soil samples were collected from the site and were analyzed for Volatile Organic Compounds (VOCs), Base/Neutral/Acid extractable compounds (BNAs), PCBs, pesticides, herbicides, explosives and metals. BNAs were detected at two locations, one of which contained 12 BNAs. The pesticides dieldrin, l, l-dichloro-2,2-bis(4-chlorphenyl) ethene (4,4'-DDE), and dichlorodiphenyltrichloroethane (4,4'-DDT) were detected at several sample locations. The PCB Aroclor 1260, herbicides, and lead were also detected. In addition, subsurface soil samples collected from 19 test pits, 27 borings, and two hand auger locations detected pesticides and BNAs.

In groundwater samples, pesticides, metals, semi-volatile organic compounds (SVOCs), and VOCs were detected. The following is a list of groundwater contaminants of concern (COCs):

- Pesticides— gamma-BHC (lindane); 4,4'-DDE; 4,4-DDD
- Metals— arsenic; antimony; chromium; lead; mercury; nickel.
- SVOCs— naphthalene (currently tracked as a VOC)
- VOCs— cis-l, 3-dichloropropene; 1,2-dichloroethane; naphthalene; 1,1,2,2-tetrachloroethane (1,1,2,2-PCA); tetrachloroethene (PCE); trichloroethene (TCE)

For most wells and many analytes, the sampling results have been non-detect during the five years 2001 through 2005. The sampling event scheduled for 2006 will not take place until after completion of the 2006 Five-Year Review.

3.4 Remedy Selection

The remedy selection for the source control OU for AOC A7 was the installation of an impermeable landfill cover system that met Resource Conservation and Recovery Act (RCRA) Subtitle C requirements. In addition, laboratory waste was to be excavated and transported off site for treatment and disposal at an approved facility. The laboratory waste was removed because it was considered to be the primary source of groundwater contamination.

The metals-contaminated soil from AOC A9 was excavated and consolidated at AOC A7 beneath the cover system. Excavated materials from other areas on the Sudbury Training Annex were used at AOC A7 as fill material to meet the subgrade design specifications for the AOC A7 landfill cap.

A multi-layer cap was placed over the landfill area. To minimize the size of the final cap, contaminated soil and other solid waste at AOC A7 were consolidated using heavy equipment. The cap components are described in greater detail in Section 3.5 Remedial Actions.

After construction of the RCRA Subtitle C double barrier landfill cap, groundwater monitoring and operations and maintenance (O&M) of the containment system were to be conducted and the monitoring program would be submitted for regulatory review and approval. O&M of the landfill cap included inspection and, if needed, repair and/or maintenance of portions of the cap, fencing, and monitoring

wells. The landfill remedy also required institutional controls and land use restrictions to prevent future reuse of the land at AOC A7 for anything other than a landfill.

A remedy was selected by the Army to create a wetland at AOC A7 in the fall of 1996 to replace "Wetland B", a seasonal wetland that is now incorporated as part of the landfill. Wetland B was classified as a natural resource area under the Massachusetts Wetlands Protection Act Regulations (MWPAR), as an "Isolated Land Subject to Flooding". Based on size (40 by 60 feet or 2,400 sq. ft.), Wetland B was not subject to regulation under the MWPAR. Nonetheless, the decision to replace Wetland B was made in accordance with the USACE policy of "No Net Loss of Wetlands" and the requirements of Army Regulation 200-3 (Natural Resources - Land, Forest and Wildlife Management).

3.5 Remedial Actions

WESTON conducted the remedial action between July and November 1996. Approximately 1,000 cubic yards (yd^3) of contaminated soils and hazardous waste materials were excavated from the lab waste area. Non-RCRA soils that did not contain lab wastes were placed in the landfill; RCRA soils were shipped to Envirotech Management Services in Belleville, Michigan and to City Environmental in Detroit, Michigan. Following analytical testing, the PCB-laden materials with excessive quantities of PCBs were properly disposed. Lab waste and materials from AOCs Al, A2, A9, P2, P16, P23, P28, P39, and P41 were used as subgrade material at the landfill, above clean soil that was placed to ensure the waste material was placed above the water table. Greater detail can be found in the 2001 Five-Year Report.

A RCRA cap was installed over the waste materials. The RCRA cap consists of the following geosynthetic layers from immediately above the waste moving to the ground surface: 12 inches of subgrade fill; a geocomposite gas collection layer, a geosynthetic clay liner (GCL), a 40-mil linear low density polyethylene (LLDPE) geomembrane, and a geocomposite drainage layer. Above the composite drainage layer lie 15 inches of drainage sand, 15 inches of filter sand, and 6 inches of vegetative support soil (topsoil). The cap was completed in the Fall of 1996. Figure 4, General Plan, shows the AOC A7 landfill cap general plan.

The replacement wetland for former Wetland B was designed and constructed to function as a vernal pool. Construction of the replicated wetland occurred at the time the landfill cap was constructed.

3.6 Operation and Maintenance (O&M)

Groundwater samples were collected from 13 wells on a semi-annual basis from October 1997 through May 2001 (Weston 2001). Well locations can be found on Figure 3. The April sampling events were intended to monitor the high groundwater conditions of spring while the October events provided data regarding the low groundwater conditions of early fall. Semi-annual sampling continued through the fall of 2005 at which time it was decided (with regulatory approval) to continue sampling annually in the fall. Groundwater was sampled for general water quality measurements and for VOCs, Pesticides/PCBs and Metals. Nondetect results were obtained for PCBs in 1997, and further sampling for PCBs was then discontinued. Additionally, the number of wells routinely sampled has been reduced, and the analytical suite has been pared back.

One well intended for use in monitoring the site was installed at too shallow a depth to detect groundwater. That well was decommissioned in June 2002 when the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) decommissioned all but three known wells at the

former training annex that were outside the AOC A7 fence. The three remaining wells are located between the AOC A7 fence and the Assabet River. Details of the decommissioning of 25 wells in June 2002 can be found in the 2002 annual report for the site (USACE 2003). One well that was removed from service at this time was the only background well (OHM-A7-13) at the site. It is due to be replaced in 2006. The new well is slated to be inside the AOC A7 fence.

During the well decommissioning, grass was unearthed on a slope south of the landfill where a truck had become stuck in the soil along a route from the entrance to AOC A7 and the dry well OHM-A7-07. This patch of grass was reseeded with the fall landscaping (mowing) work. Each year, usually in late summer, maintenance is performed on the landfill and perimeter fence. The landfill surface and surrounding areas are mowed to about 8 inches in height. Additionally, branches are cleared from the perimeter fence, and if necessary, repairs are made to the fence itself.

One surface water sample was taken in the spring of 2002 from the drain at the south side of the landfill during a high water table event. This non-routine sample was taken at the request of EPA and analyzed for pesticides. These results are shown in Table 8, and all sample results were below the laboratory's reporting limit.

Landfill gas also has been monitored on a semi-annual basis using four passive gas vents (GV-1, GV-2, GV-3 and GV-4, located as shown in Figure 4). The data is summarized in Tables 9 through 12 and is discussed further in Section 4.3.1.

Long-term monitoring requirements for the replicated wetland were not a component of the RODs for AOC A7. Regular, semi-annual inspections are not mandated or warranted and long-term wetland monitoring was not included in the April 1988 Long Term Monitoring & Maintenance Plan for the Landfill at AOC A7. However, USACE has inspected the wetland and plans to inspect the wetland again in 2006.

3.7 Progress since the Last Five-Year Review

This is the second five year review for AOC A7. This report covers the semi-annual monitoring period starting in May 2001 through September 2005. Beginning in 2006, samples will be collected annually.

3.8 Community Involvement

Beginning in 2002, e-mail and telephone interviews have been conducted annually. Agencies that control portions of the former Annex surrounding AOC A7 (USFWS, USAF, FEMA) were contacted. The interviews have been conducted in accordance with the LTMMP requirements, and are discussed further below.

In 2002, the Town of Maynard was contacted in preparation for, and then soon after the decommissioning of unused wells throughout the Annex. Both EPA and Mass DEP review annual reports for AOC A7, and have been informed of the five year review process. The most recent responses are summarized below, and records of correspondence are included in Appendix C.

The USFWS reported in December 2005 that the refuge had been officially opened to the public during the fall of 2005, and that limited tree-felling had occurred along Patrol Road and Craven Lane, consistent with their refuge maintenance requirements. They reported their work in maintaining the site

by working to minimize the spread of purple loosestrife, referencing work they had done in 2004 with a troop of Girl Scouts. USFWS signs and kiosks had been erected in the refuge at entrance points and trail signs throughout the refuge had been erected, with minimal soil disturbance. There was a plan being drafted for a visitor center with associated utility lines, but as of January 2006 the exact location and details had not been finalized.

On April 26, 2006, NAE asked USFWS (by e-mail) if there was a final choice for the proposed visitors' center. They replied May 23, 2006 that they had chosen a site near the entrance to the former Annex complex, on Craven Lane (about 7,000 feet southeast of the AOC A7 site, as shown in Figure 1). The e-mail correspondence is included in Appendix C.

In an e-mail dated October 2005, the USAF reported that a roof was repaired at their facility during 2002, and reported no further changes. When contacted specifically for the 2006 Five-Year Review, the Air Force reported that they had no further comments to make. Details are included in Appendix C.

FEMA reported in October 2005 that there had been no changes in the sites for which they have responsibility. In May 2006 they were contacted specifically for the 2006 Five-Year Review. A response had not been received as of July 22, 2006. The correspondence is included in Appendix C.

The Town of Maynard Department of Public Works reported that their plans for a new well and pipeline to augment the town water supply with groundwater were on hold. The DPW did report unauthorized all-terrain vehicle traffic, but that there was no visible damage. The town reported that FEMA had on occasion increased its security posture, discouraging trespassing in general.

In addition, the sampling teams have on three occasions noted evidence of dumping outside the fence between the landfill and the Assabet River. In April 2002, the materials discarded were items of yard-waste, left on well JO-A07-M62. In April 2004, a motorcycle battery was found in the same general area. The battery was removed from the site and handed in to recycling personnel at Hanscom Air Force Base. Following each discovery, USACE has contacted Mr. Robert Albright, who controls access to the track road north of the landfill enclosure. Mr. Albright subsequently reminded residents using the adjacent road of the no-dumping policy in the forested area at the southern floodplain bank of the Assabet. In April 2006, during the inspection of wells and water-level-gauging exercise, the field team noted a beaten path from the unpaved road north of the site to well JO-A7-M63. One large tree had been felled and removed in the vicinity of the JO-A7-M63 well; an empty container, presumably formerly containing lubricant for a chainsaw, had been left at the location. The road had undergone significant grading, and there was in April 2006 a new berm channeling water along the unpaved road, towards the north-east corner of the site, at the approximate location of wells OHM-A7-10 and OHM-A7-11 (see photo 6).

3.9 Document Review

This five-year review for AOC A7 considered each of the annual reports generated from 2002 through 2006 (USACE 2002,2003,2004,2005, 2006). Also considered were the previous five-year review (Weston 2001), the long term monitoring and maintenance plan (USACE 1998), the RODs (OHM 1995(b) and 1997), and applicable groundwater standards (EPA 2001 (a), 200l(b), 2003, 2004(a), 2005; CFR 2001, MassDEP 2003).

3.10 Data Review

Data collected during the five year monitoring period consists of landfill gas concentrations, groundwater analytical results, bioremediation parameters, and groundwater elevations.

3.10.1 Landfill Gas

Four landfill gas vents have been monitored on a semi-annual basis since the landfill was completed in 1996. Methane has not been detected in any of the four landfill gas vents. Minimal levels of carbon dioxide and VOCs have been detected during some of the semi-annual monitoring events. Oxygen levels have basically been the same at all four vents, and largely reflect ambient conditions. The most recent inspection (May 2006) did not detect any methane or VOCs at any of the four vents. See Tables 9 through 12 for historical gas level readings at the four vents. The vent locations are shown in Figure 4.

3.10.2 Groundwater Analytical Results

Tables 3 to 5 contain analytical data from 2001 to 2005 (USACE 2002, 2003, 2004, 2005, 2006). Tables 6 and 7 and Charts 1 through 15 indicate wells where chemicals have been detected in excess of the most stringent MCP GW-1 or GW-3 standards. Table 6 displays historical results by chemical, and Table 7, shows results for the following contaminants of concern: lindane, 4,4'-DDD, 1,1,2,2-tetrachloroethane, tetrachloroethene, trichloroethene, and thallium.

Thirteen groundwater wells at the site have been monitored on a semi-annual basis for the last 5 years. In 2002, when wells were being decommissioned throughout the former Annex, one of the thirteen wells was removed from service since it was located outside the site fence. A fourteenth well at the site that was dry during all attempted sampling events was decommissioned at the same time (USACE 2003). As a result a total of twelve wells have been included in the semi-annual groundwater monitoring since 2002. The monitoring well network currently consists of two wells screened within the landfill, seven wells immediately surrounding the downgradient portion of the landfill, and three wells located further downgradient of the landfill adjacent to the Assabet River (Figure 3). This existing monitoring well network appears appropriate to monitor long-term groundwater trends at and downgradient of the landfill with the exception that an upgradient monitoring well is required by MADEP regulation. The lack of an upgradient monitoring well does not create a critical data gap regarding contaminant migration at the landfill, but does leave the possibility that offsite upgradient activities could introduce groundwater contamination that otherwise would not be detected.

A total of nine groundwater sampling rounds has been completed since May 2001, these being in the fall of 2001, and then in the spring and fall of each year 2002 to 2005. Beginning in fall 2005, the recommendations made in the 2004 annual report (USACE 2005) were implemented. These changes consist of sampling groundwater on an annual basis during the fall when low water level periods are expected, reducing the target analyte list to exclude anions, ammonia, and total dissolved solids, and reducing the number of wells monitored to eight. The excluded monitoring wells are OHM-A7-10, OHM-A7-45, OHM-A7-52, and JO-A07-M61. EPA has suggested that OHM-A7-12 be removed from the sampling program and this recommendation was included in the 2005 Annual Report (USACE, 2006).

Groundwater data has been compared to the most conservative of MCP GW-1 or GW-3 standards. The GW-3 concentrations for cyanide, mercury, silver, zinc, endosulfan I and methoxychlor are less than the

corresponding GW-1 values; therefore these analytes are compared to GW-3 numbers in the data tables. All other analytes in the tables are compared to GW-1 values. The 2001 Five-Year Review noted analytes that were not diminishing in concentration. These were:

- Trichloroethene in wells OHM-A7-51, OHM-A7-52, JO-AO7-M61, JO-AO7-M63
- 1,1,2,2-tetrachloroethane in OHM-A7-51, OHM-A7-52, JO-AO7-M61, JO-AO7-M63
- 1,2-dichloroethane in JO-AO7-M63
- Occasional exceedances of lindane, DDD, DDT and thallium had been observed.

Tables 6 and 7 and Charts 1 through 15 indicate that in all cases these chemical concentrations have abated since 2001.

3.10.2.1 Volatile Organic Compounds

1,1,2,2-tetrachloroethane exceedances were noted in only two wells OHM-A7-51 and JO-A07-M63, with a maximum detection of only 4.1 µg/L in September 2005 (See Table 7 (Page 3) and Charts 6 to 9). 1,1,2,2-tetrachloroethane is not believed to be a degradation product of tetrachloroethene, but is a common laboratory solvent and may have been disposed of at AOC A7. Source materials (lab wastes) for this contaminant were removed from the site before completion of the landfill cap but residual contamination may still be present.

The last time 1,2-dichloroethane exceeded MCP groundwater standards was October 2000 in wells JO-A07-M61 and JO-A07-M63. (See Table 6 (pages 8 and 10)). 1,2-dichloroethane is a common chlorinated solvent and degradation product of tetrachloroethane. Source materials (lab waste) for this contaminant were removed from the site before completion of the landfill cap but residual contamination may still be present.

Tetrachloroethene concentrations have exceeded the GW-1 standard in wells OHM-A7-08, OHM-A7-51, OHM-A7-52, and JO-A07-M63, but in all cases the concentrations had been decreasing over time. There was, however, a rise in concentrations at three of these wells in the fall of 2005. (See Table 7 (page 4) and Charts 10 to 13). This may be due to a diminished dilution rate as a result of low water levels. Sampling was discontinued at OHM-A7-52 due to a lack of exceedances of GW-1 levels going back several years. For OHM-A7-08, OHM-A7-51 and JO-A07-M63, the concentrations are about one-third of the 2001 concentrations, and the wells continue to be monitored.

Trichloroethene concentrations remain above the GW-1 standard of 5 µg/L at only one well, JO-A07-M63. (See Table 7 (page 5) and Charts 14 and 15). Given the declining concentrations of the potential parent compound tetrachloroethene at this well, and the low concentrations of TCE in upgradient well OHM-A7-51, the concentrations are likely to decline in JO-A07-M63 over the next few sampling rounds. The concentration was below the GW-1 standard in the spring of 2005, but above it in the fall. It is thought that the higher concentration in the fall may be partially due to the low water levels that season. Continued monitoring is recommended.

3.10.2.2 Metals

Occasional exceedances have been noted of the following metals: nickel, chromium, cadmium, antimony, and thallium. The reader is referred to Tables 6 (pages 1 through 10) and Table 7 (page 6). Nickel and chromium were noted in excess of the GW-1 standard in JO-A07-M62 in October 2000.

There was a rapid decline in concentrations, and no subsequent GW-1 exceedances, of these metals at this well over the next two sampling events, and the concentrations have fallen to below detection levels by May 2005. There was one exceedance of the cadmium GW-1 standard at JO-A07-M63 in May 2005, followed by a non-detect result in September 2005. Antimony has been detected in OHM-A7-08 from October 2001 to October 2004, but not above the reporting limit. Prior to 2005 the reporting limit for antimony was 10 µg/L, above the GW-1 standard of 6 µg/L. Subsequent samples collected in 2005 were nondetect, using detection limits of 0.3 µg/L and 2.5 µg/L (which are each less than half the GW-1 standard).

There is a new EPA drinking water standard of 10 µg/L for arsenic. While post-construction concentrations at the site had not exceeded the GW-1 standard of 50 µg/L, concentrations at OHM-A7-08 are frequently above the updated EPA drinking water standard. The highest concentration was 24 µg/L in October 2002. Subsequent arsenic concentrations were between 10 and 20 µg/L, and then decreased to less than 1 µg/L in May 2005. Initially the Fall 2005 arsenic results were reported by the laboratory as less than 25.0 µg/L. USACE requested that the laboratory analyze the samples to achieve a lower reporting limit. The second analysis yielded arsenic results of less than 2.5 µg/L for all wells except well JO-A07-M63 which had a result of 3.9 µg/L, still below the 10 µg/L drinking water standard that was promulgated on February 22, 2002. Although exceedances of groundwater standards have occurred at the well screened within the landfill, no exceedances have been observed in any of the wells near the Assabet River. Since the well with arsenic exceedances is not near the river's edge but at the middle of the capped landfill, and there are no known users of groundwater at the landfill, the arsenic exceedances of the EPA drinking water standard do not constitute a human health risk.

3.10.2.3 Pesticides

Since 2001, pesticides that have been detected in excess of their GW-1 standards are lindane, DDD, and DDE. The 2001 Five Year Review had noted detections of lindane, DDD and DDT, but no clear concentration trends were apparent at that time. Since 2001, concentrations of DDT have been below the GW-1 standards in all wells on all sampling occasions.

Lindane and DDD concentrations also are approaching non-exceedance values. Lindane concentrations (Table 7 (Page 1)) are falling steadily in OHM-A7-08, from a maximum of 7 µg/L in May 2001 to a value of 1.84 µg/L in September 2005, slightly below the GW-1 standard. This concentration value was last exceeded at OHM-A7-51 in April 2003 and at JO-A07-M63 in October 2002 (Table 7 (Page 1) and Charts 1 through 4), while at OHM-A7-51, the lindane concentration of 0.17 µg/L in October 2004 was followed by a result of less than 0.1 µg/L in 2005 (Table 6 (page 6)). The one observation of an exceedance in the lindane GW-1 standard at JO-A07-M62 in the fall of 2000 has been followed by a five-year series of nondetect results for this compound, providing persuasive evidence that the well is not contaminated with lindane. DDD concentrations have exceeded the GW-1 standard at OHM-A7-08 (Table 6 (Sheet 1)). At OHM-A7-08, the 4,4'-DDD concentration was 0.25 µg/L in May 2001 and 0.12 µg/L in September 2005.

DDE (GW-1 is 0.1 µg/L) was detected in OHM-A7-08 at 0.17 µg/L in October 2004, but concentrations were reported as less than 0.05 µg/L for the two sampling results in 2005 (Table 7 Page 1). The QA laboratory result for DDE has been used in instances when the primary laboratory's reporting limit was above the GW-1 standard of 0.1 µg/L and the QA laboratory result met the 0.1 µg/L standard (see Table 4).

3.10.3 Potential for Bioremediation

In the 2002 annual report, a set of scores was developed for wells at the site, based on spring and fall sampling results in 2001 and 2002, indicating the potential for bioremediation of chlorinated hydrocarbons. The scores were developed consistent with EPA Protocol EPA/600/R-98/128 (EPA 1998). The potential for bioremediation was found to be at best limited and EPA agreed that the scoring should not be repeated. Table 13 summarizes the results of the screening. Given the low bioremediation potential, the analyte list was pared back in 2005 to concentrate on contaminants of concern, with less emphasis on bioremediation assessment.

3.10.4 Groundwater Elevations

Groundwater elevation data for each well for April 1997 through April 2006 are presented in Table 14. Water level elevation data are presented graphically in Chart 16 for wells OHM-A7-08 within the landfill, OHM-A7-51 located at the toe of the landfill, and OHM-A7-M63 closest to the Assabet River. Well locations are shown in Figure 3.

The water levels measured for Well OHM-A7-11, a deep well with a fully saturated screen in bedrock, are consistently higher than the water levels of the adjacent well OHM-A7-10, a shallow overburden well adjacent to OHM-A7-11. Refer to Table 14 for details. These wells are located at the toe of the cap, and the overall hillside, with the Assabet River to the north. This groundwater elevation trend has been seen consistently throughout the LTM effort. The consistent upward vertical gradient from the deeper interval to the shallow interval, especially due to the location of these wells at the toe of the hillside, indicates deeper bedrock groundwater discharging upward into the shallow interval and into the Assabet River.

A total of two surface water staff gauges are proposed to be included in the semiannual water level measurement rounds. One currently existing gauge is located within the unnamed tributary less than 100 feet east of the toe of the landfill perimeter. The second gauge is to be established on or near the shore of the Assabet River at a location to be determined based on field conditions due north of the landfill. The measurement of the surface water elevations at the same time as groundwater elevations at the monitoring wells closest to these gauge locations will allow a more clear understanding of seasonal variations in groundwater gradients and the relationship between groundwater and surface water, for example whether the groundwater discharges to the surface water or vice versa. Without the surface water elevation measurements, groundwater elevation contours cannot with confidence be connected to the surface water bodies. The locations of the two gauges are shown in Figure 5, which is a groundwater contour map originally developed for the September 2005 groundwater monitoring event.

3.10.5 Site Inspections and Confirmation of Institutional Controls

Since the 14 May 2001 inspection, personnel from USACE inspected the site on 23 October 2001, 22 April and 22 October 2002,22 April and 7 October 2003,15 April and 13 October 2004, 1 June and 15 September 2005, October 19 2005 (additional inspection and water levels due to record precipitation event), 26 April 2006 (well inspection and preparation for well installation and survey work) and 4 May 2006 (geotechnical landfill inspection) (USACE 2002, 2003, 2004, 2005, 2006). The Army, EPA, and MassDEP performed a site inspection on August 25, 2006. Figure 4 is presented to show the major features of the geotechnical inspections.

The environmental monitoring and O&M component of the remedy includes repair and maintenance of the cap, the security fence, and monitoring wells. The security fence is free of damage, breaches, and is secure. Repairs were made to the access road to eliminate potholes and rutting during October 1999. Monitoring well casings were free of damage until October 2005 inspections noted damaged surface seals at the three wells between the landfill and the Assabet River.

The most recent USACE Site Inspection of the site was performed on April 26 and May 4, 2006 to observe current site conditions in addition to well maintenance activities (see the Site Inspection Checklist and Landfill Cap Monitoring and Maintenance Report in Appendix E). No maintenance activities were performed during these inspections. There are five wells in degraded condition. Damage includes evidence of failing surface seals, surface water and debris infiltration in wells OHM-A7-12, JO-A07-M61, JO-A07-M62, and JO-A07-M63; and possible siltation in well OHM-A7-10, causing reductions in well efficiencies. USACE is preparing a scope for well repairs that are to be performed in 2006, as outlined in Table ES-3. Observations were made regarding the vegetative cover, vegetation types, erosion, settlement, and general condition of the various features. The landfill cap is in 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 in September 2005. 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. Pictures were taken of the Sudbury Training Annex Landfill at AOC A7 during the April 26 2006 Site Inspection, see Photos 1 through 4. Photograph 5 was taken during a wetland inspection in 2004.

An inspection of the replicated wetland conducted on September 14,2004 found a seasonally-influenced wetland that exceeds relevant performance standards and secve& the intent of replacing its predecessor. As was the case for its predecessor, the replicated wetland is seasonal and typically goes dry during the summer months. USACE has conducted additional observations in 2006 to determine if the wetland is functioning as a vernal pool, and a report will be furnished by the end of 2006.

Institutional controls prohibiting the use of site groundwater as drinking water at AOC A7 eliminate the ingestion of groundwater exposure pathways. Land use at the AOC A7 has not changed from the presumed future wildlife refuge use evaluated prior to the ROD and is not expected to change. There are provisions in the Memorandum of Agreement (MOA) between the Army and the USFWS dated 28 September 2000 (Weston 2001 - see Appendix D) allowing for the Army to conduct remedial actions at the former annex in general, but in particular, the AOC A7 landfill site is protected by Clause C8 from tampering, described as surface application of water, the use of groundwater, disturbing the parcel by earthworks that would negatively affect any response actions or jeopardize the remedy, activities that might impede the function of the containment design, or any unauthorized work that might be done without the consent of EPA and the Army on the landfill cap itself.

In this MOA, a Site-Wide Institutional Control (IC) dealing with OE is discussed. It states,

> *The USFWS acknowledges that the Army has informed it that as of the Date of Transfer, the subsurface soil below the depth of 4-ft on the Transfer Parcel may contain OE or OE-related material as a result of past Army activities on the Transfer Parcel. The USFWS covenants on behalf of itself and its successors and assigns that except as provided herein, no activity or use shall be undertaken on the Transfer Parcel that might disrupt or otherwise negatively impact the subsurface*

soil below the depth of 4-ft. Such prohibited activities and uses shall include any disturbance of the subsurface soil below the depth of 4-ft in any manner, including but not limited to construction activities such as filling, drilling, excavation or change of topography.

The same MOA acknowledges that arsenic-based herbicides were applied to the fence line along Patrol Road.

"... the USFWS acknowledges that the arsenic-based herbicides were applied in the vicinity of the fence line along Patrol Road and on the former railroad beds on the northern and southern portions of the Sudbury Training Annex, and that the Army has concluded, after completing a facility-wide investigation, that the resulting concentrations of arsenic in the soil do not pose an unacceptable risk to human health or the environment based on the future use of the Transfer Parcel as a National Wildlife Refuge. The USFWS covenants on behalf of itself and its successors and assigns that no portion of a 50-ft strip of land on either side of the center of the above-described fence line or former railroad beds shall be used for residential habitation unless the then-owner of the Transfer Parcel can demonstrate to USEPA that such use is consistent with the protection of human health and the environment."

The residual concentrations of arsenic in soil did not represent an unacceptable risk to human health or the environment based on use of the land as a refuge. This institutional control is valid for all sites along Patrol Road (including AOC A7 and the adjacent P9 and A9) and the former railroad beds on the Annex.

3.10.6 Technical Assessment

The technical assessment is based on the information presented in the preceding sections, and is intended to address the three questions presented in the headings of the following subsections.

3.10.7 Is the remedy functioning as intended by the decision documents?

The remedy continues to function as intended by the Decision Documents. Waste materials are contained in an unlined capped landfill. The cap is well drained, limiting infiltration of rain water. Historically, there have been no detections of methane, and only minimal detections of VOCs emanating as landfill gases through installed vents. With the cap, concentrations of VOCs and pesticides reaching the Assabet River through groundwater have subsided, in many cases to undetectable concentrations.

For all contaminants, it is evident that contaminant plumes extend from beneath the landfill near well OHM-A7-08 to the furthest downgradient well, closest to the Assabet River (OHM-A7-M63). Historical results for metals in Table 4 show only sporadic exceedances in a few wells for lead, chromium, and nickel at low levels. The following three wells continue to exhibit exceedances of groundwater standards:

- Crest well OHM-A7-08: tetrachloroethene, gamma-BHC (Lindane), 4,4'-DDD
- Toe well OHM-A7-51: 1,1,2,2-tetrachloroethane (1,1,2,2-PCA)
- Offsite terrace well JO-A07-M63: 1,1,2,2-PCA, PCE, TCE, and cadmium

Groundwater monitoring and inspections are performed in accordance with the LTMMP and recommendations made in the annual reports. The sampling has recently been limited to annual samples; mowing and inspections and groundwater level measurements continue on a semi-annual basis.

3.11 Are the exposure assumptions, toxicity data, cleanup levels, and remedial objectives used at the time of remedy selection still valid?

Public access has recently changed at the Sudbury Wildlife Refuge to include land extending to the landfill fence line. USFWS recently opened the wildlife refuge at the former annex for public recreational use, and hunting was first authorized in October 2005. These changes do not represent an increased threat to the community because contact with landfill contents or groundwater is not occurring. Directional signs were posted and kiosks were erected at entrances to the refuge. The USFWS plans to develop a visitors' center on Craven Lane, inside the former training annex.

The standards, regulations and other factors such as toxicity values that were current at the signing of the ROD and the first Five-Year site review have been reviewed for changes that could affect protectiveness. No changes to applicable or relevant and appropriate requirements (ARARs) or to be considered (TBCs) have occurred since the implementation of the remedy. These requirements are listed in Tables 15, 15A, and 16.

A summary of the requirements as they were prepared for the LTMMP (in the LTMMP Appendix G) is included as Table 15. The table was based on groundwater standards of the Massachusetts Contingency Plan of October 1997. The requirement was in general the GW-1 standard, with GW-2 or GW-3 standards being required when these were more stringent. A column has been inserted in the table for current MCP GW standards. Table 15A is a copy of the ARAR table as prepared for the 1995 ROD.

The only ARAR that has been modified since 2001 is a new 10 µg/L standard for arsenic in drinking water that replaced the former standard of 50 µg/L (66FR6976). The promulgated date of the new standard was February 22, 2002. The Commonwealth of Massachusetts in 310 CMR 22.0 updated the state MCL for arsenic to comply with the updated federal MCL. Because the remedy includes prohibiting the use of groundwater as drinking water, changes to groundwater standards do not affect the protectiveness of the implemented remedy.

The ROD identified formerly unacceptable risks from the following exposure pathways at the site: ingestion of groundwater as drinking water source and direct contact with contaminated soils. As was the case for the first five year review, the institutional controls preclude use of the groundwater at the landfill, and consolidation and capping of contaminated soil have eliminated the potential for direct contact with contaminated soils.

The risk assessments supporting the RODs for AOC A7 used exposure assumptions consistent with standard practice at the time. Since that time, EPA has updated some of the recommended dermal contact exposure assumptions. New guidance for evaluating dermal contact exposures was finalized in July 2004 (Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual - Part E, Supplemental Guidance for Dermal Risk Assessment - Final). Also, the toxicity of trichloroethylene (TCE) is currently under review. Although current indications are that TCE is more toxic than previously thought, revised toxicity factors have not yet been issued. Because the remedy precludes exposure by removing contaminated soils and by prohibiting the use of groundwater, changes to exposure parameters and toxicity values do not affect the protectiveness of the implemented remedy.

3.12 Has any other information come to light that could call into question the protectiveness of the remedy?

No natural disasters such as flooding, fire or other such incidents have reportedly occurred at the site during this review period.

3.13 Issues

Despite a general downward trend in VOC and pesticide concentrations over the five-year period, there were sudden increases in these concentrations at AOC A7 in the fall of 2005. This is believed to have been a result of a seasonally low water table and to some degree may also have been due to water infiltration from the surface at well JO-A07-M63. The increased concentrations in late 2005 do not indicate a new trend. Groundwater sampling has been conducted in general accordance with the LTMMP. However, after 2004, USACE proposed changes to the frequency of sample collection, to the number of wells sampled, and to the suite of analytes. EPA accepted these changes, which were implemented in the fall of 2005. A revised LTMMP is being prepared by the Army and is scheduled for completion in October 2006.

Issues noted during recent inspection of the site were trees and bushes growing in close proximity to the fence, evidence of roadwork along the unpaved road that runs between the AOC A7 enclosure and the Assabet River, recent felling of a large oak tree in the vicinity of JO-A07-M63, a new pathway to/from the well, and an empty and discarded drum along the eastern side of the AOC A7 enclosure.

There are five wells in degraded condition. These are OHM-A7-10, OHM-A7-12, JO-A07-M61, JO-A07-M62, and JO-A07-M63. Damage includes evidence of surface water and debris infiltration in some wells; failing surface seals; and possible siltation, causing reductions in well efficiencies. The existing monitoring well network appears appropriate to monitor long-term groundwater trends at and downgradient of the landfill with the exception that an upgradient monitoring well is required by MassDEP regulation. The lack of an upgradient monitoring well does not create a critical data gap regarding contaminant migration at the landfill, but does leave unanswered any potential changes created by modifications upgradient to the site.

3.14 Protectiveness

The remedy at OU1 (AOC A7) is protective of human health and the environment.

The selected remedy for AOC A7 consists of consolidation of landfill waste, capping, long-term groundwater monitoring with O&M. The remedy currently remains protective by precluding the potential for exposures related to the landfill waste. The remedy is protective also because of the implementation of the institutional controls, which are functioning to ensure the continued protectiveness of the remedy. Continued monitoring, as described above is required to determine whether the selected remedy will remain protective. Based on site inspections and interviews with the USFWS and the Army, all of the institutional controls are in place at the Sudbury Training Annex and are still protective. No substantial violation of any institutional control has been recorded. The USFWS reported limited trespassing in 2004 at the former training annex, and that the trespassing did not affect AOC A7.

4.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

The following are recommendations that should be accomplished during the next five year review period. For ease of reference, the information in this section has been summarized into tables ES-2 (Operable Unit 1 Issues), ES-3 (Operable Unit 1 Recommendations and Follow-up Actions, and ES-4 (Sudbury Training Annex Five-Year Review Protectiveness Statements).

4.1 AOC A7

Maintenance inspections at AOC A7 occur every spring and fall, and repairs have been implemented as necessary. EPA agreed with recommendations in the 2004 annual report to reduce the analyte list and the list of wells used for routine sampling, and accepted a recommendation to reduce the sampling frequency from semi-annual to annual. The current list of wells to be sampled includes two on the landfill cap, three at the toe of the slope of the cap, and two of the three wells in the Assabet River floodplain. An eighth well, to be installed as a background well at the south entrance of the AOC A7 enclosure, was proposed to be installed. The following actions are recommended:

- Continued semi-annual measurements of water levels in all 12 wells at the site;
- Continued annual sampling in the fall of 7 of the existing 12 wells at the site;
- Installation of a thirteenth well at the site, to be located as a background well and sampled annually in the fall.
- Continued review of the appropriateness of the wells to be sampled and the analytes to be designated.
- Continued semi-annual inspections and annual assessments of the integrity of the institutional controls.
- Continued semi-annual gas monitoring of the 4 passive gas vents.

The Annual Report for AOC A7 (USACE 2006) included recommendations for 2006. These included well repairs and maintenance, changes to the list of wells to be sampled, installation of a new upgradient monitoring well at the AOC A7 site, vegetation controls in the landfill drainage system, installation and measurement of surface water staff gauges to enhance understanding of groundwater gradients, and survey of the new and repaired wells and of the staff gauges.

All well water elevations were to be gauged on a semi-annual basis. Sampling was to continue at one new and seven existing wells on an annual basis in the fall. The 5 wells slated for water level measurements only would be sampled if necessary, based on results of analyses at the 8 wells slated for sampling. Sampling should continue in the fall when groundwater levels are low, so any increases in concentrations tied to low water levels will be observed.

In accordance with the O&M component of the remedy, the landfill cap and surrounding area should be kept clear of encroaching vegetation and dumped materials, such as the noted empty steel drum.

4.2 Other AOCs

According to the closeout document signed by EPA, there are no remedies in place requiring five-year review at any of the 73 original AOCs except for AOC A7 (Weston 2001) and areas related to the site-wide arsenic investigation (i.e., statutory reviews). All 73 sites are described in Table 1. Extended summaries for sites at which some level of contamination was identified were provided in Appendix F. Two issues arose from the additional summaries.

4.2.1 Issue 1

Although there are no remedies in place for AOCs P58 and P31 and the monitoring wells were decommissioned, the concentrations of arsenic in groundwater until 2001 historically exceeded the EPA drinking water standard that was promulgated February 22, 2002, decreasing the standard from 50 µg/L to 10 µg/L

4.2.2 Issue 2

AOC P58 is now owned by the USFWS. The land is subject to institutional controls that restrict land use and prevent the use of groundwater for drinking water. However, because the adjacent AOC P31 is state forest outside the boundary of property transferred to USFWS in MOA 2000, it is unclear whether portions of AOC P31 are subject to the same or similar land use restrictions as the USFWS property.

4.2.3 Recommendations

Further consideration of the concentrations of arsenic in the groundwater at AOC P58 and P31 should be considered, given the more stringent standard for arsenic, and of the status of drinking water supply wells for the nearby residential area.

Clarify whether AOC P31, as a portion of the state forest that is not under the control of the USFWS, is protected by appropriate institutional controls.

4.3 Next Five Year Review

Groundwater and soils at AOC A7 are currently contaminated above levels that would allow for unrestricted use. Under such conditions the NCP, 40 CFR § 430 (f) (4) (ii), requires five-year reviews. There also is a continuing need for land use restrictions at areas treated with arsenical herbicides that have resulted in concentrations in soil that are not appropriate for unrestricted land use. The next review should be performed within five years of completion of this review.

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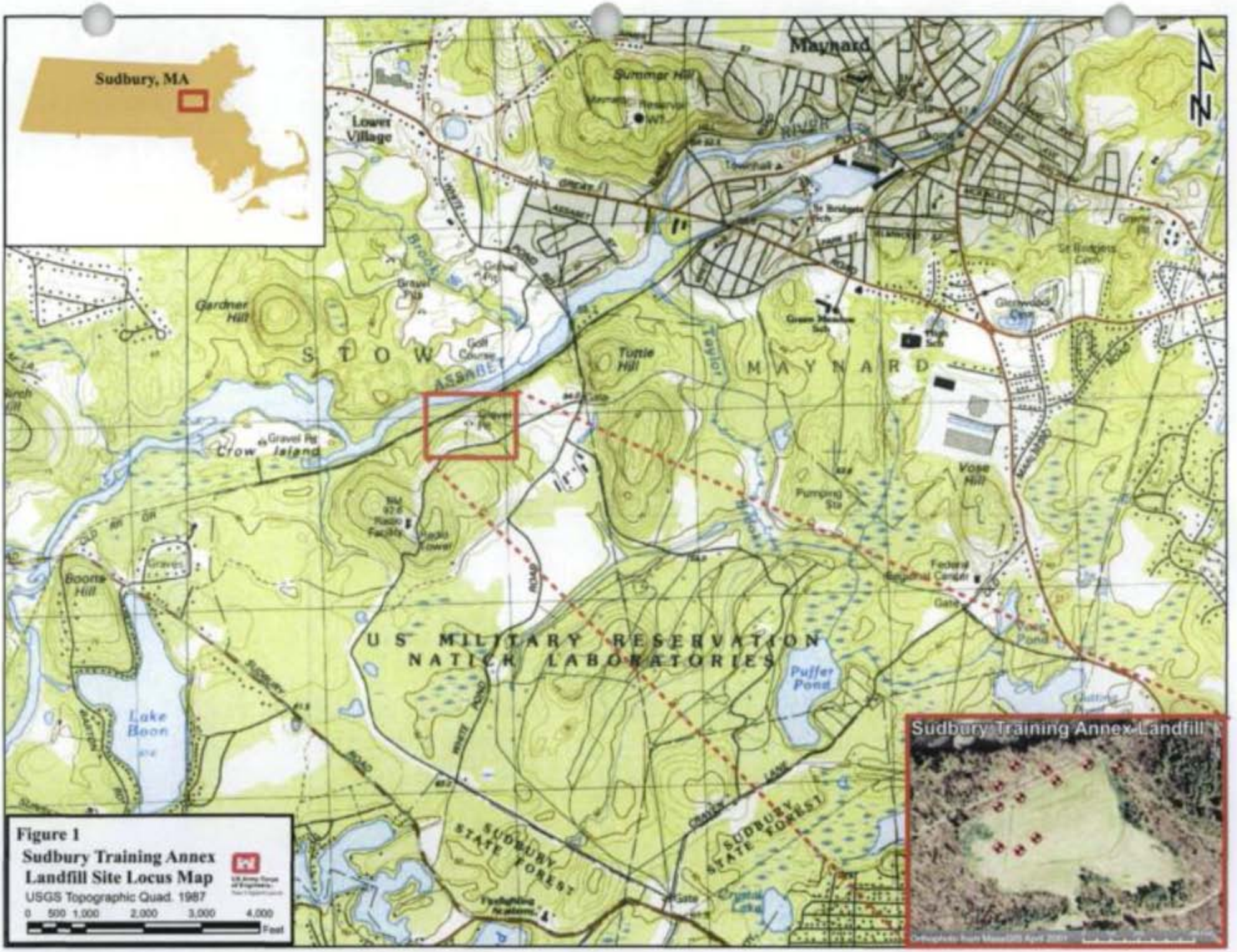
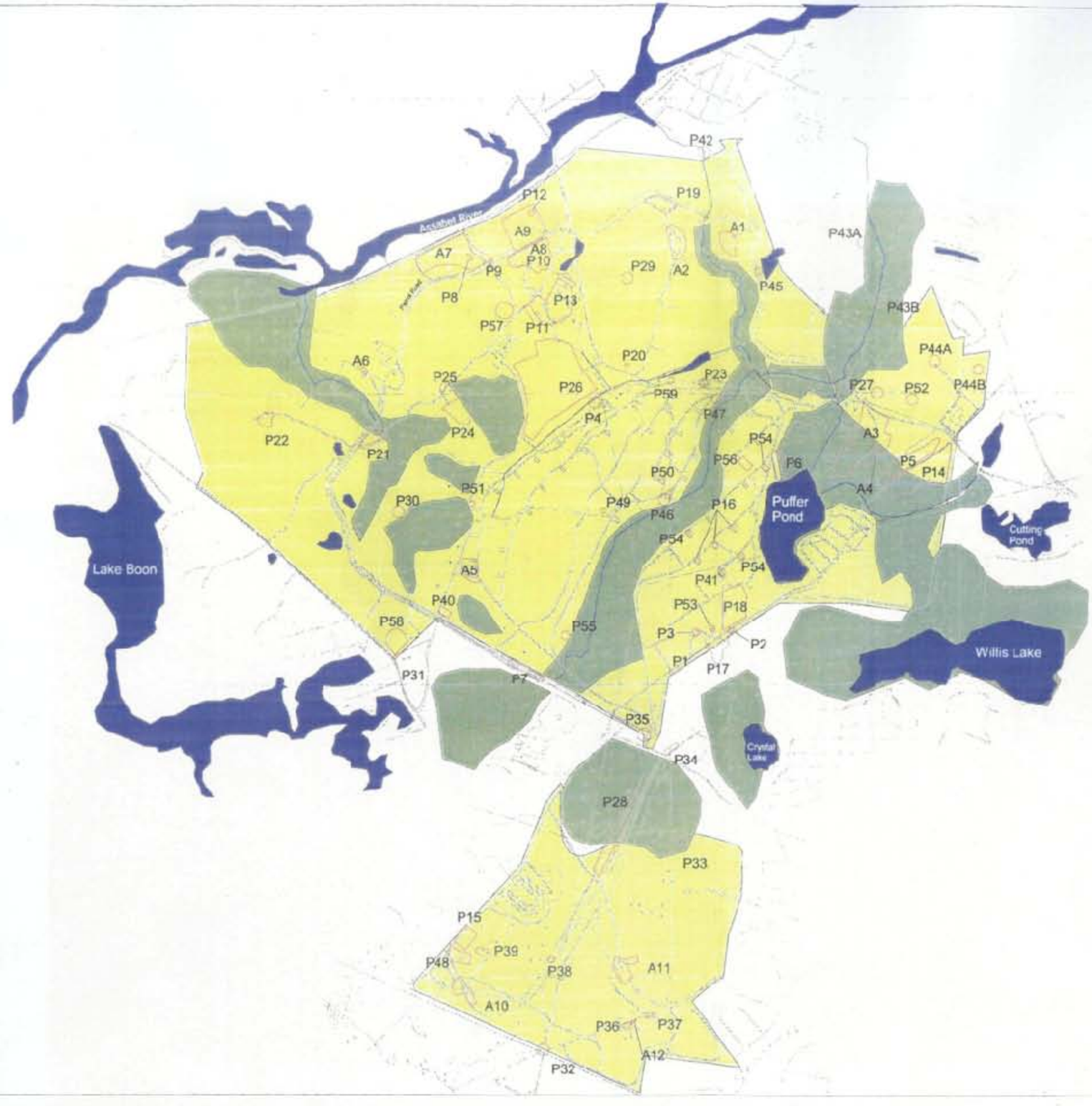
SUDBURY ANNEX
2006 FIVE-YEAR REVIEW REPORT
FIGURES


Sudbury, MA
Maynard
Summer Hill
Lower Village
RIVER
Gardner Hill
STOW
ASSABET
Turtle Hill
MAYNARD
Crow Island
Gravel Pit
Vose Hill
Pumping Sta
Booths Hill
U S MILITARY RESERVATION
NATICK LABORATORIES
Puffer Pond
Lake Boon
SUDBURY STATE FOREST
Sudbury Training Annex Landfill
Figure 1
Sudbury Training Annex
Landfill Site Locus Map
USGS Topographic Quad. 1987
0 500 1,000 2,000 3,000 4,000
Feet



LEGEND

- Site Outline
- Site Outline
- Site Names
- Streams
- Property Boundary
- Surface Water
- Wetlands
- Annex Property

File Location:

PDF->G:\PROJECTS\03886518\007\DRAFTSUD\SITEMAP.PDF

APR->N:\ARCVIEW\SUDBURY\SUDBURY.APR

N

W E

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500 0 500 Meters

Scale 1:25,000

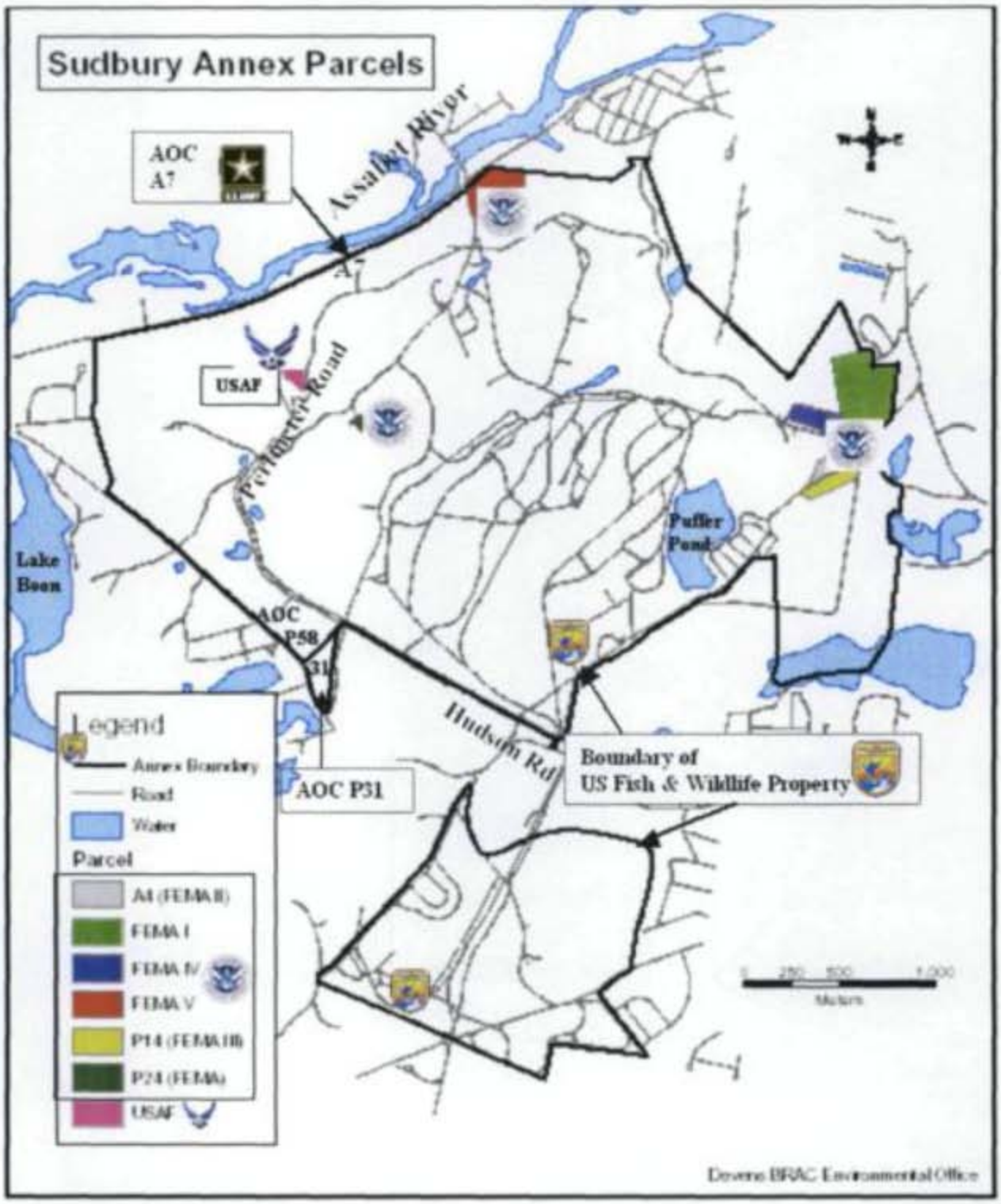
Department of the Army
New England District
Corps of Engineers
Concord, Massachusetts

WESTON

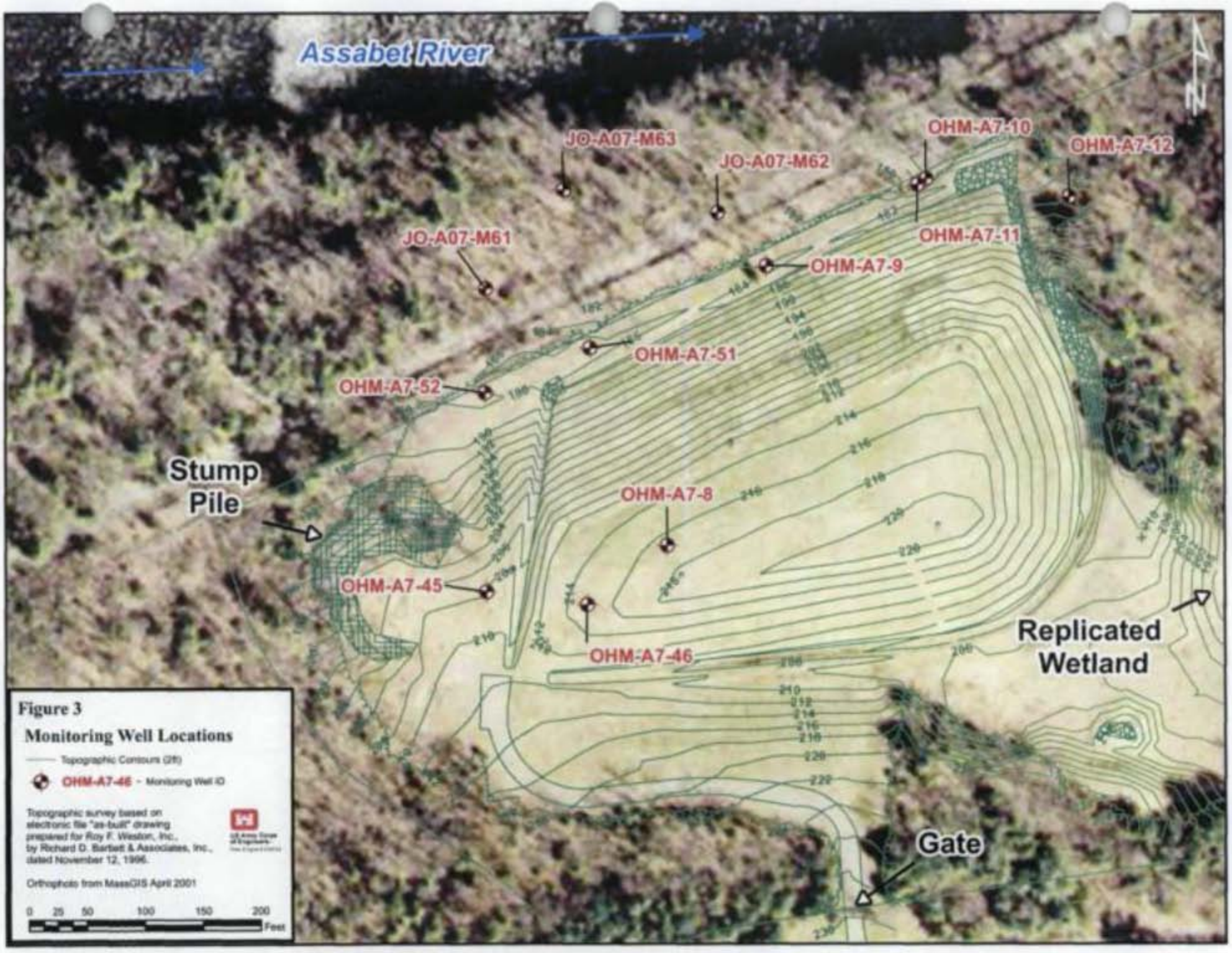
Roy F. Weston, Inc. May, 2001

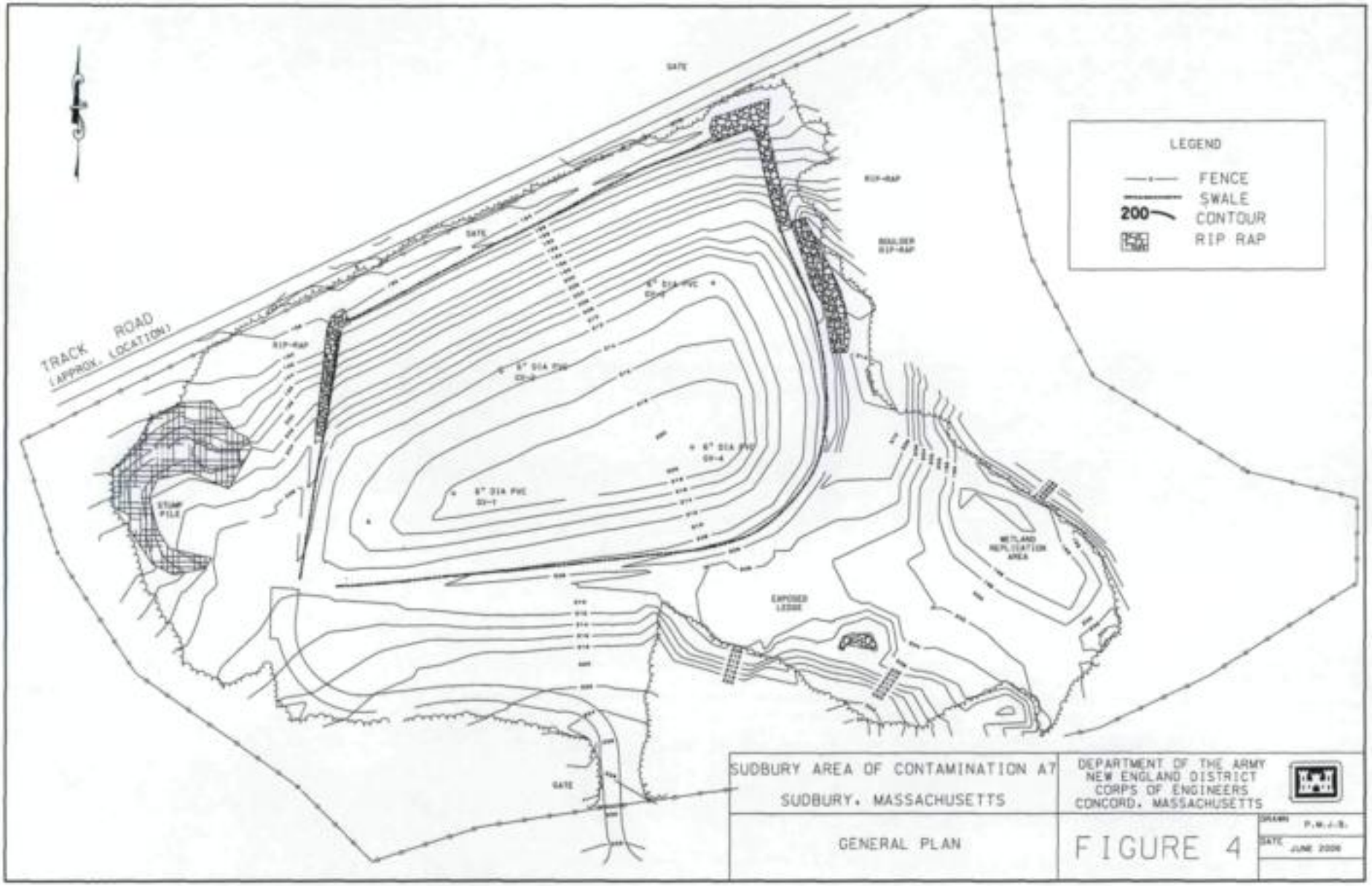
Figure 2
SITE MAP

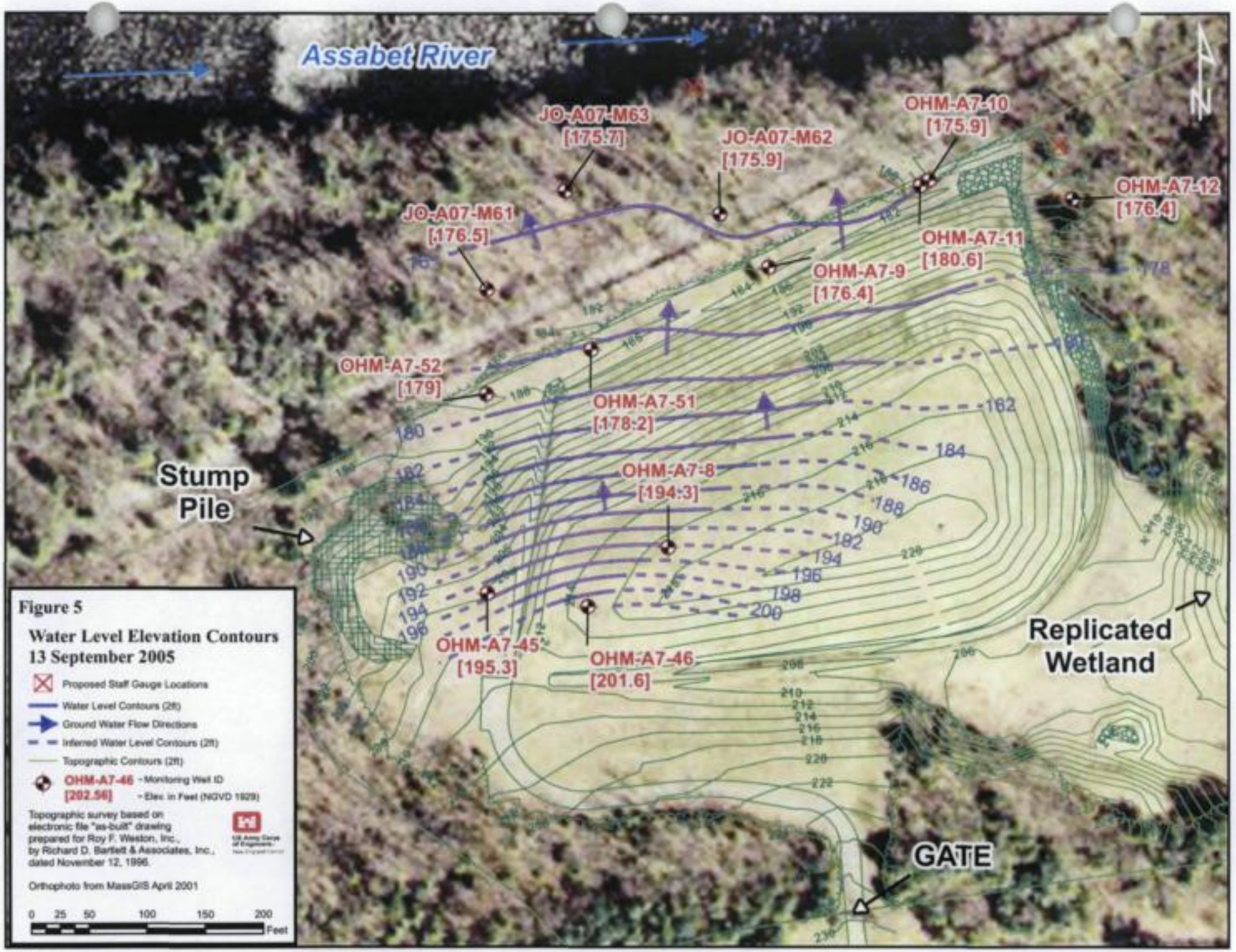
Sudbury Annex
Sudbury, Massachusetts



AOC A7 LANDFILL **SUDBURY TRAINING ANNEX** **SUDBURY, MASSACHUSETTS**	US Army Corps of Engineers New England District Concord, Massachusetts
SUDBURY ANNEX PARCEL OWNERS	**Figure 2a**


Assabet River
JO-A07-M63
JO-A07-M62
OHM-A7-10
OHM-A7-12
JO-A07-M61
OHM-A7-11
OHM-A7-9
OHM-A7-51
OHM-A7-52
Stump Pile
OHM-A7-8
OHM-A7-45
OHM-A7-46
Replicated Wetland
Gate
Figure 3
Monitoring Well Locations
Topographic Contours (2ft)
OHM-A7-46 - Monitoring Well ID
Topographic survey based on electronic file "as-built" drawing prepared for Roy F. Weston, Inc., by Richard D. Barbet & Associates, Inc., dated November 12, 1996.
Orthophoto from MassGIS April 2001
0 25 50 100 150 200
Feet


LEGEND
FENCE
SWALE
200 CONTOUR
RIP RAP
TRACK ROAD
(APPROX. LOCATION)
GATE
RIP-RAP
BOULDER RIP-RAP
STUMP PILE
EXPOSED LEDGE
WETLAND REPLICATION AREA
SUDBURY AREA OF CONTAMINATION A7
SUDBURY, MASSACHUSETTS
GENERAL PLAN
DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS
FIGURE 4
DRAWN P.W.J.S.
DATE JUNE 2006


Assabet River
JO-A07-M63
[175.7]
JO-A07-M62
[175.9]
OHM-A7-10
[175.9]
OHM-A7-12
[176.4]
JO-A07-M61
[176.5]
OHM-A7-11
[180.6]
OHM-A7-9
[176.4]
OHM-A7-52
[179]
OHM-A7-51
[178.2]
OHM-A7-8
[194.3]
Stump Pile
OHM-A7-45
[195.3]
OHM-A7-46
[201.6]
Replicated Wetland
GATE
N
Figure 5
Water Level Elevation Contours
13 September 2005
Proposed Staff Gauge Locations
Water Level Contours (2ft)
Ground Water Flow Directions
Inferred Water Level Contours (2ft)
Topographic Contours (2ft)
OHM-A7-46 - Monitoring Well ID
[202.56] - Elev. in Feet (NGVD 1929)
Topographic survey based on electronic file "as-built" drawing prepared for Roy F. Weston, Inc., by Richard D. Bartlett & Associates, Inc., dated November 12, 1996.
Orthophoto from MassGIS April 2001
US Army Corps of Engineers
0 25 50 100 150 200
Feet

SUDBURY ANNEX
2006 FIVE-YEAR REVIEW REPORT
CHARTS

Chart 1: Lindane in OHM-A7-08
from 1999
(For 1992-1998 results, see Tables 6 and 7)

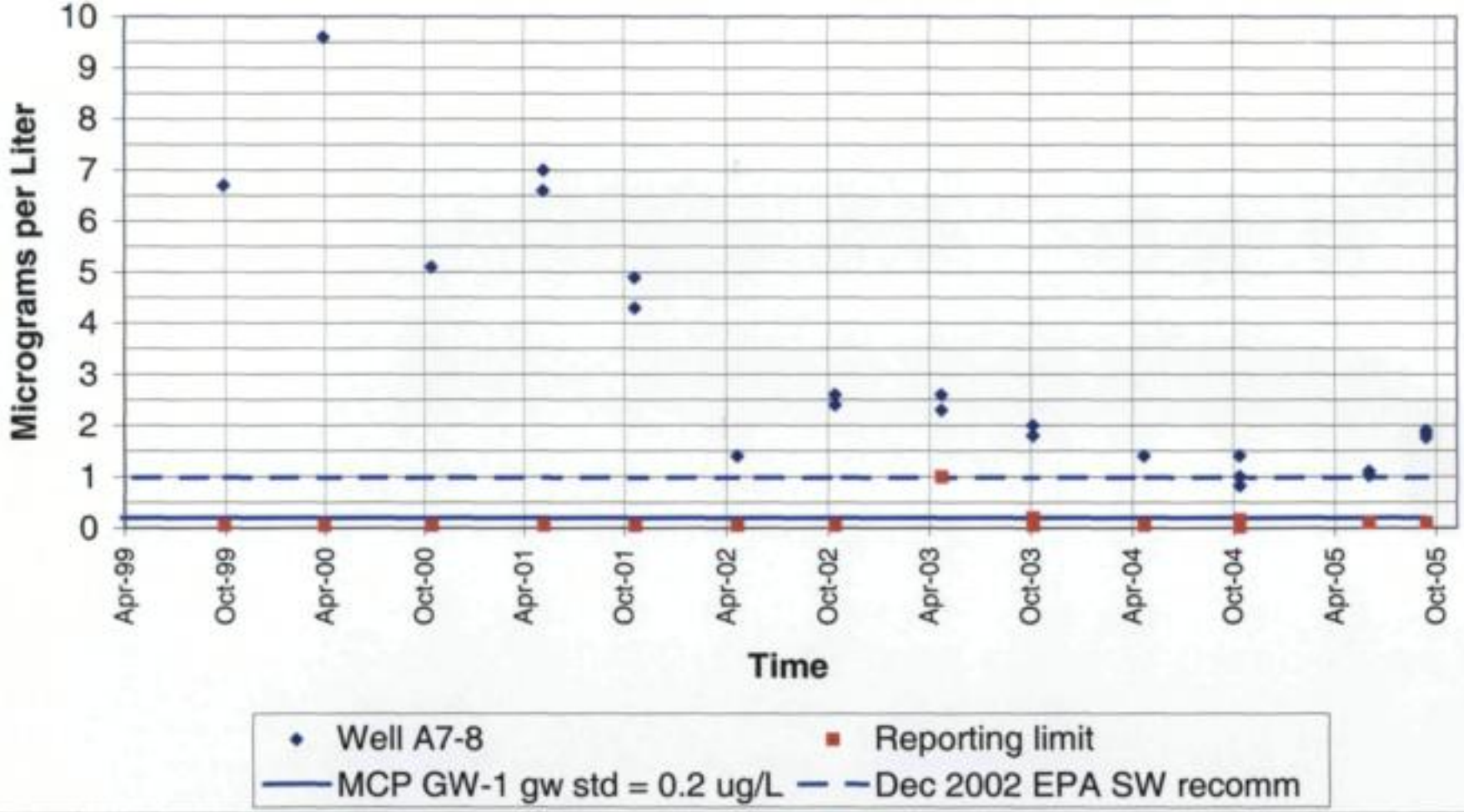


Chart 2: Lindane in OHM-A7-51 from 1999 (For 1996 to 1998 data see Tables 6 and 7)

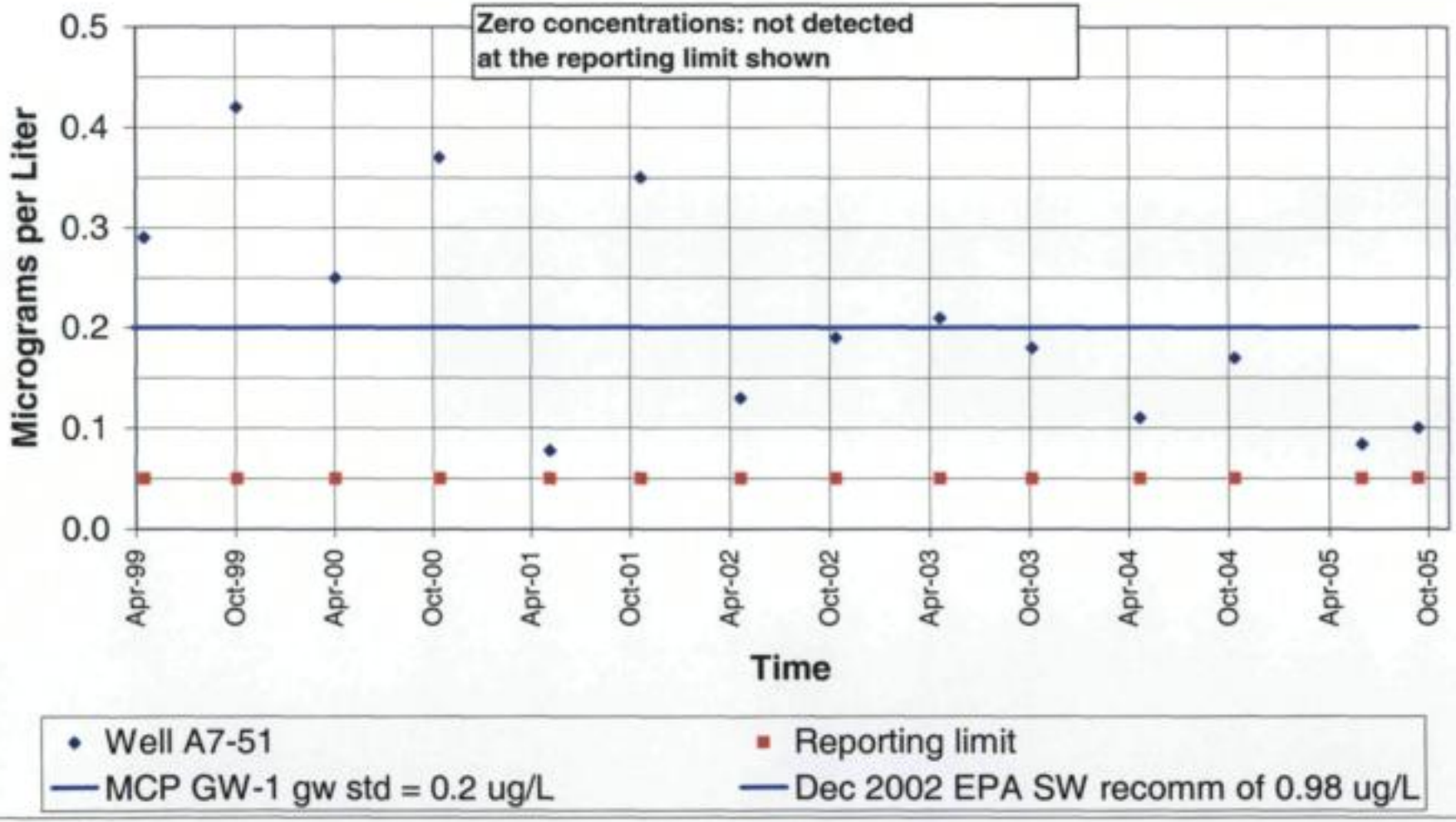


Chart 3: Lindane in JO-A07-M62
(All data below EPA SW std of 0.98 ug/L)
(Water level too low to sample in Sept 2005)

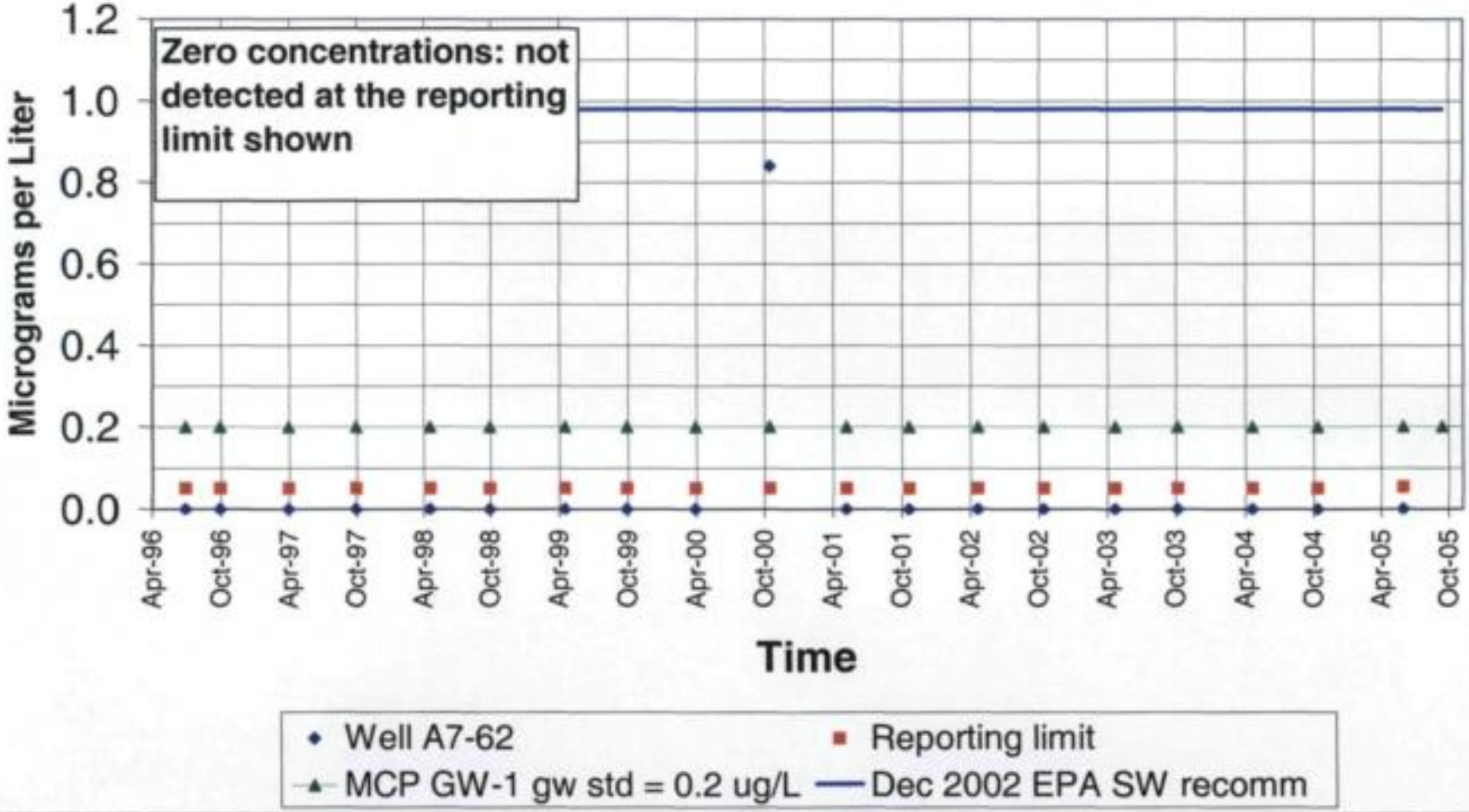


Chart 4: Lindane in JO-A07-M63
from 1999
(All data below EPA standard of 0.98 ug/L)
(For 1996 to 1998 data see Tables 6 and 7)

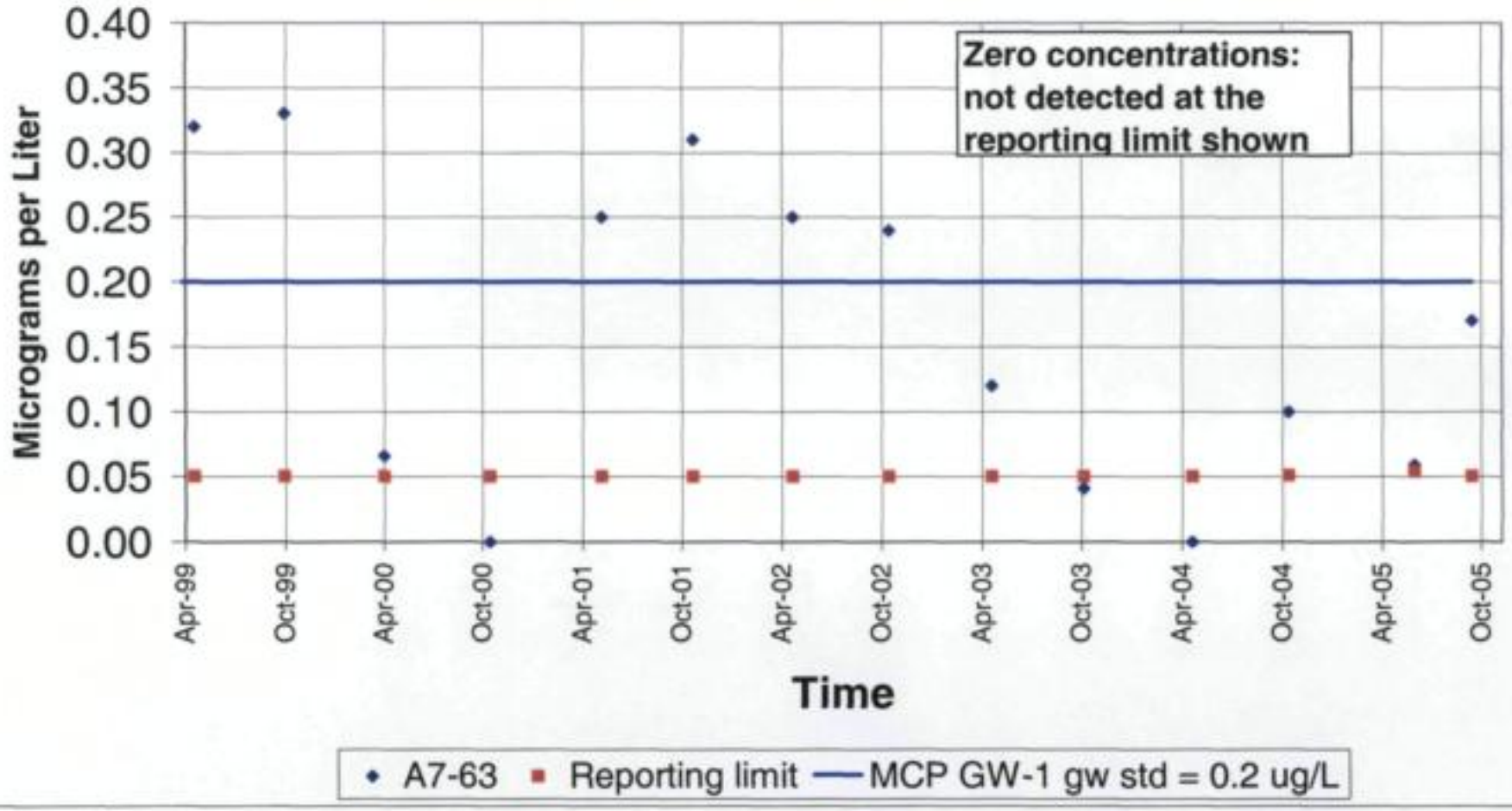


Chart 5: 4,4'-DDD in OHM-A7-08 from 2000
(For data from 1997 to 1999 see Tables 6 and 7)

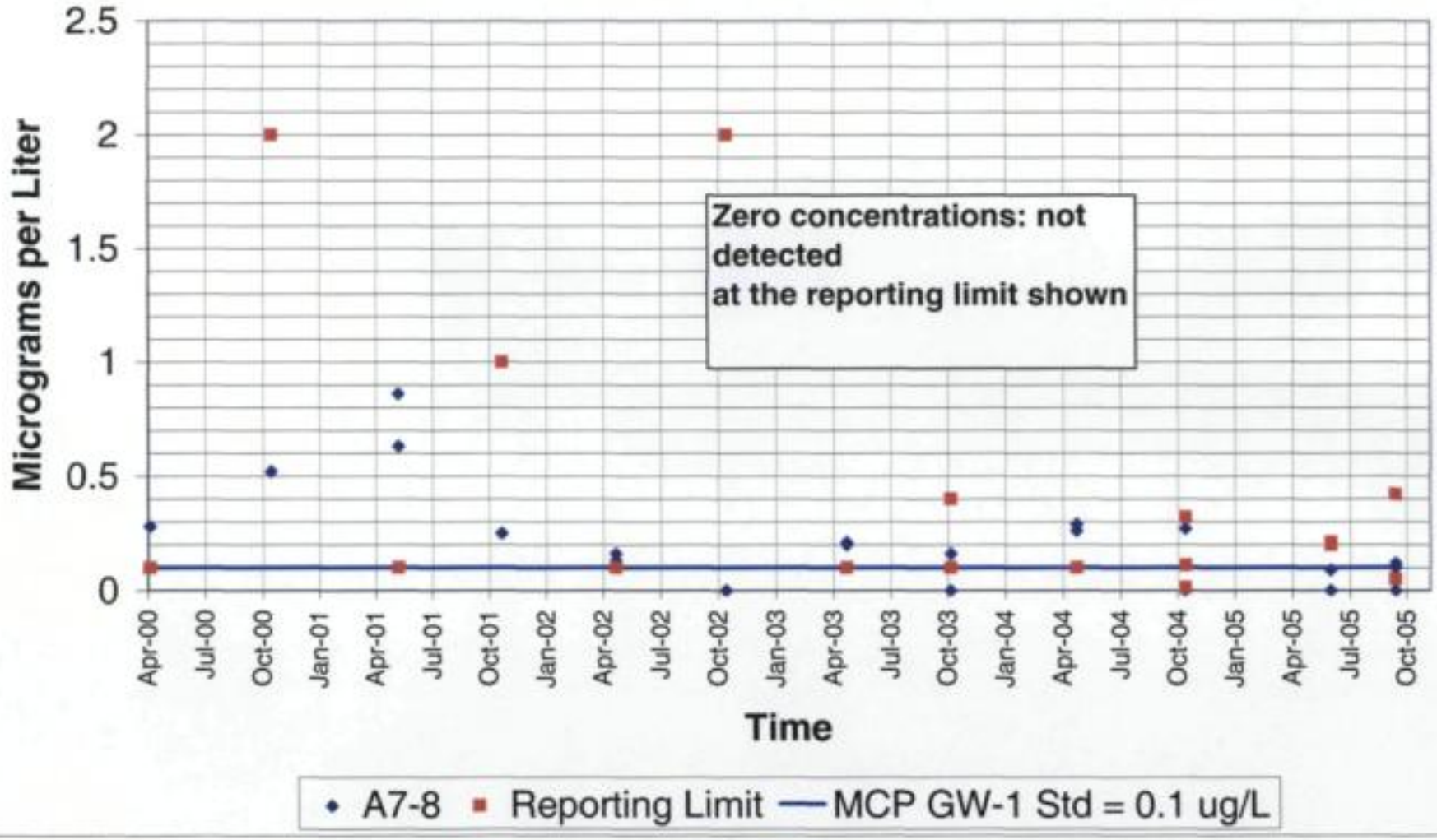


Chart 6: 1,1,2,2-Tetrachloroethane in OHM-A7-51 from 2000
(For 1993 to 1999 data see Tables 6 and 7)

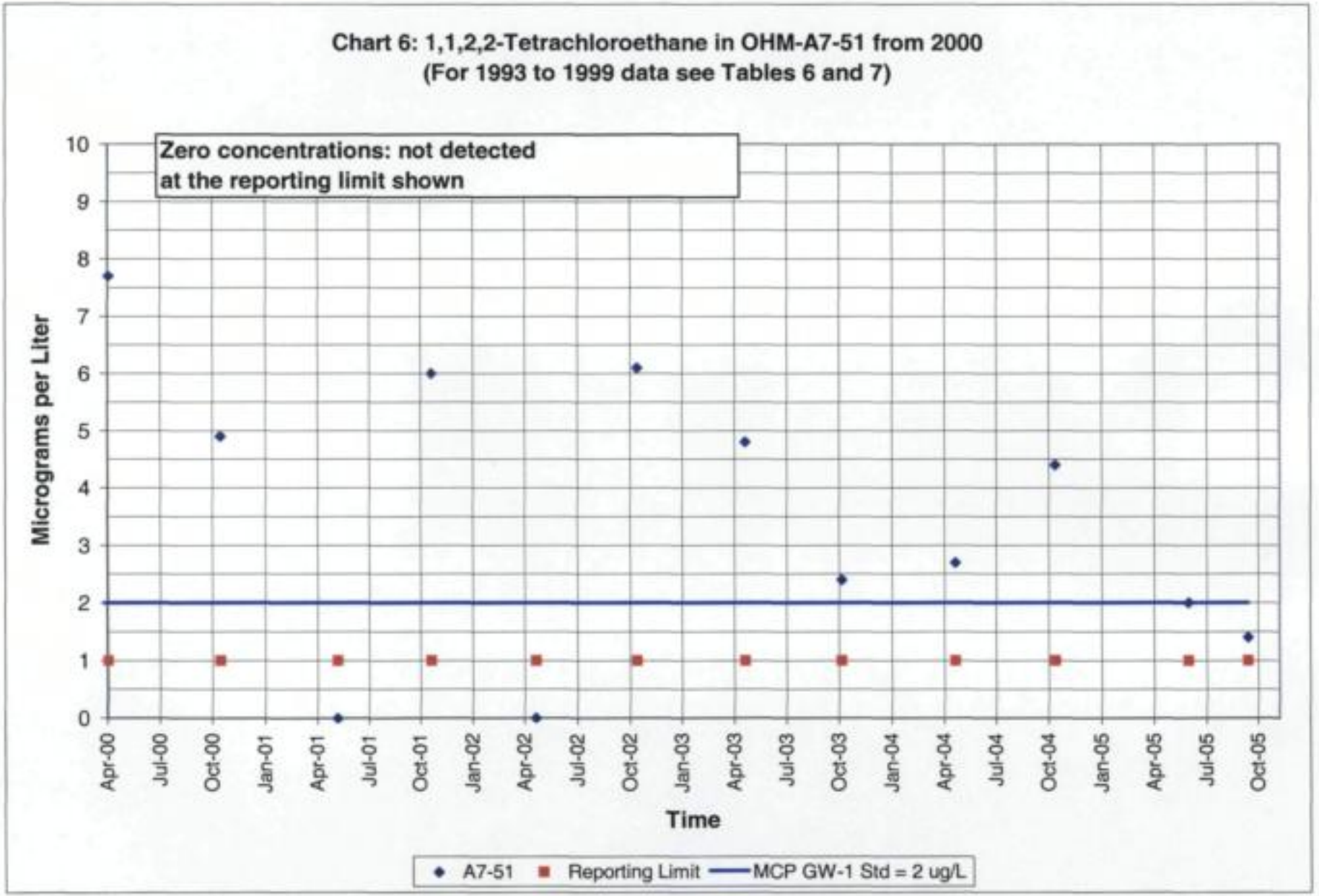


Chart 7: 1,1,2,2-tetrachloroethane in OHM-A7-52 from 2000
(For 1996 to 1999 data, see Tables 6 and 7)
(Sampling discontinued after June 2005)

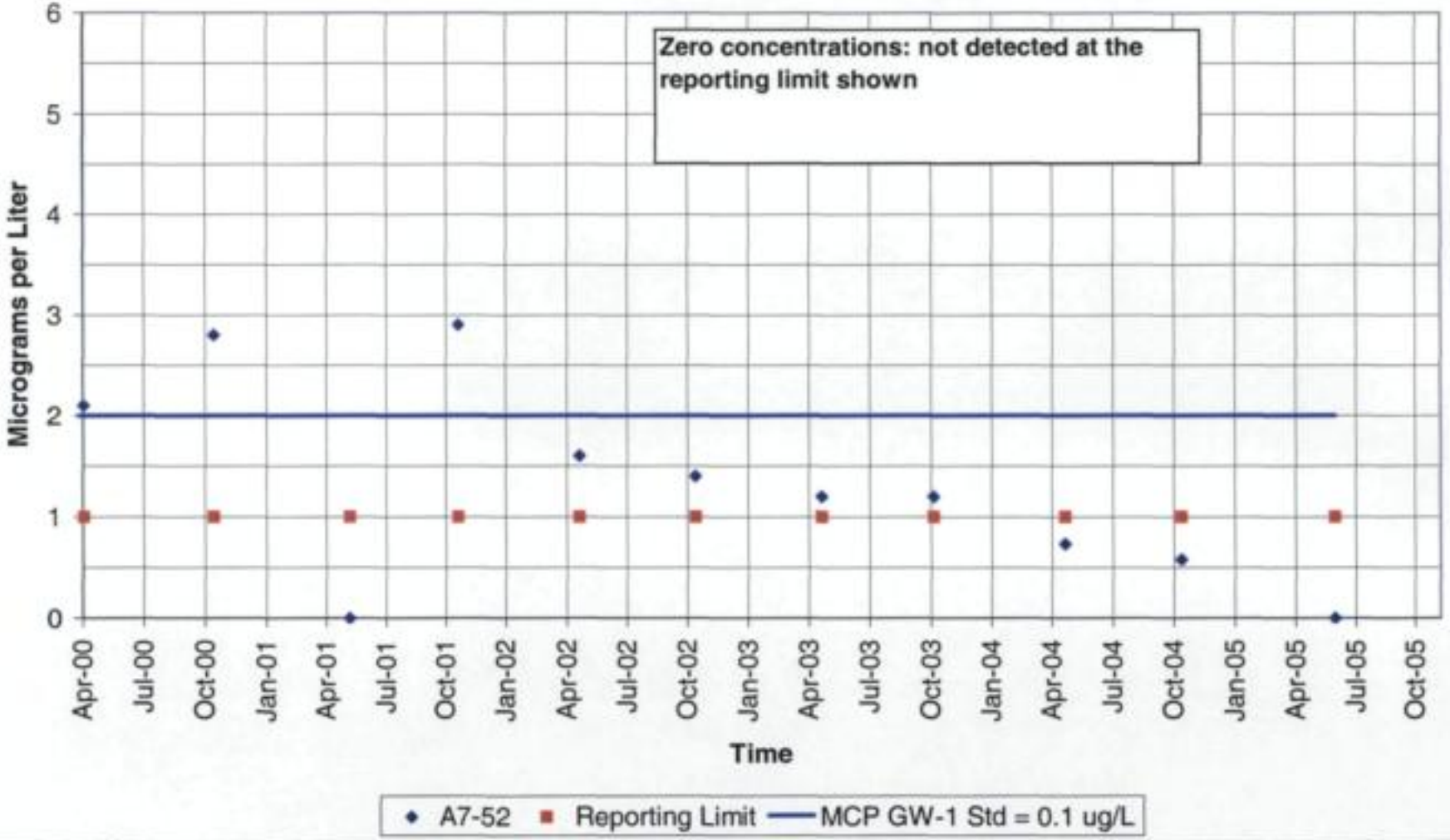


Chart 8: 1,1,2,2-Tetrachloroethane in JO-A07-M61 from 2000
For 1996 to 1999 data, see Tables 6 and 7.
Sampling discontinued after May 2005

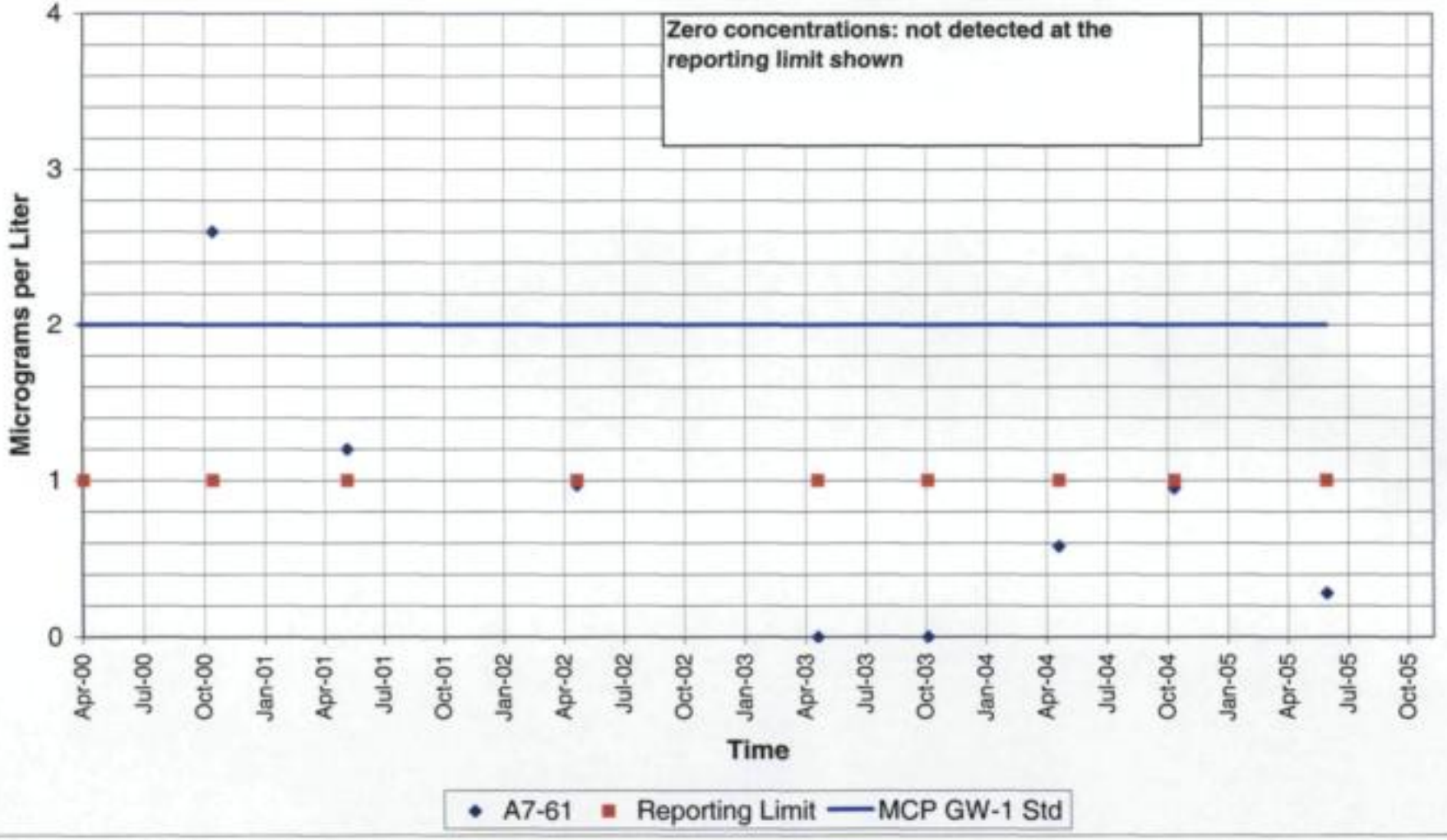


Chart 9: 1,1,2,2-Tetrachloroethane in JO-A7-M63 from 2000
(For 1996 to 1999 data, see Tables 6 and 7)

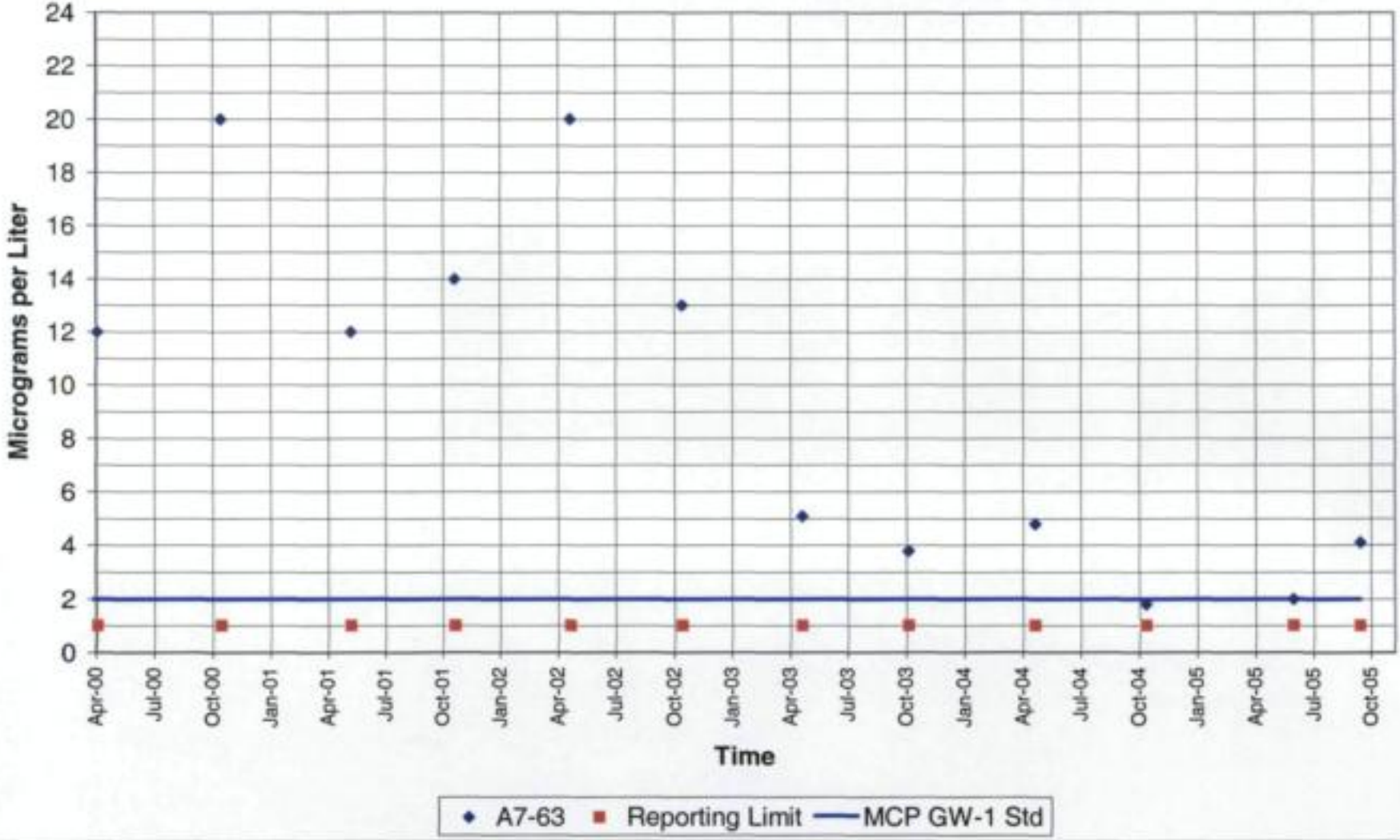


Chart 10: Tetrachloroethene (PCE) in OHM-A7-08 from 2000
(For 1992 to 1999 data see Tables 6 and 7)

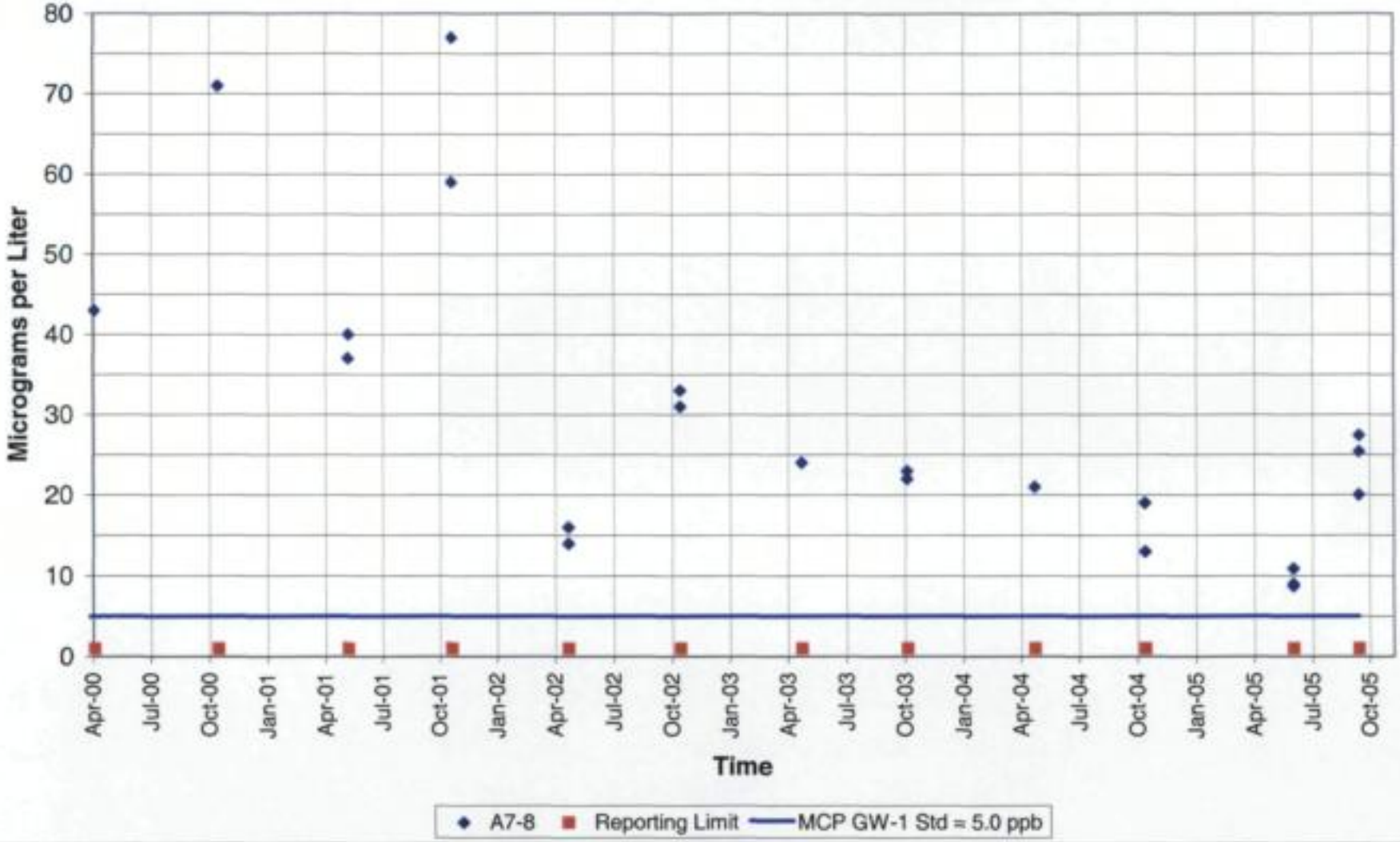


Chart 11: Tetrachloroethene (PCE) in OHM-A7-51 from 2000
(For 1993 to 1999 data see Tables 6 and 7)

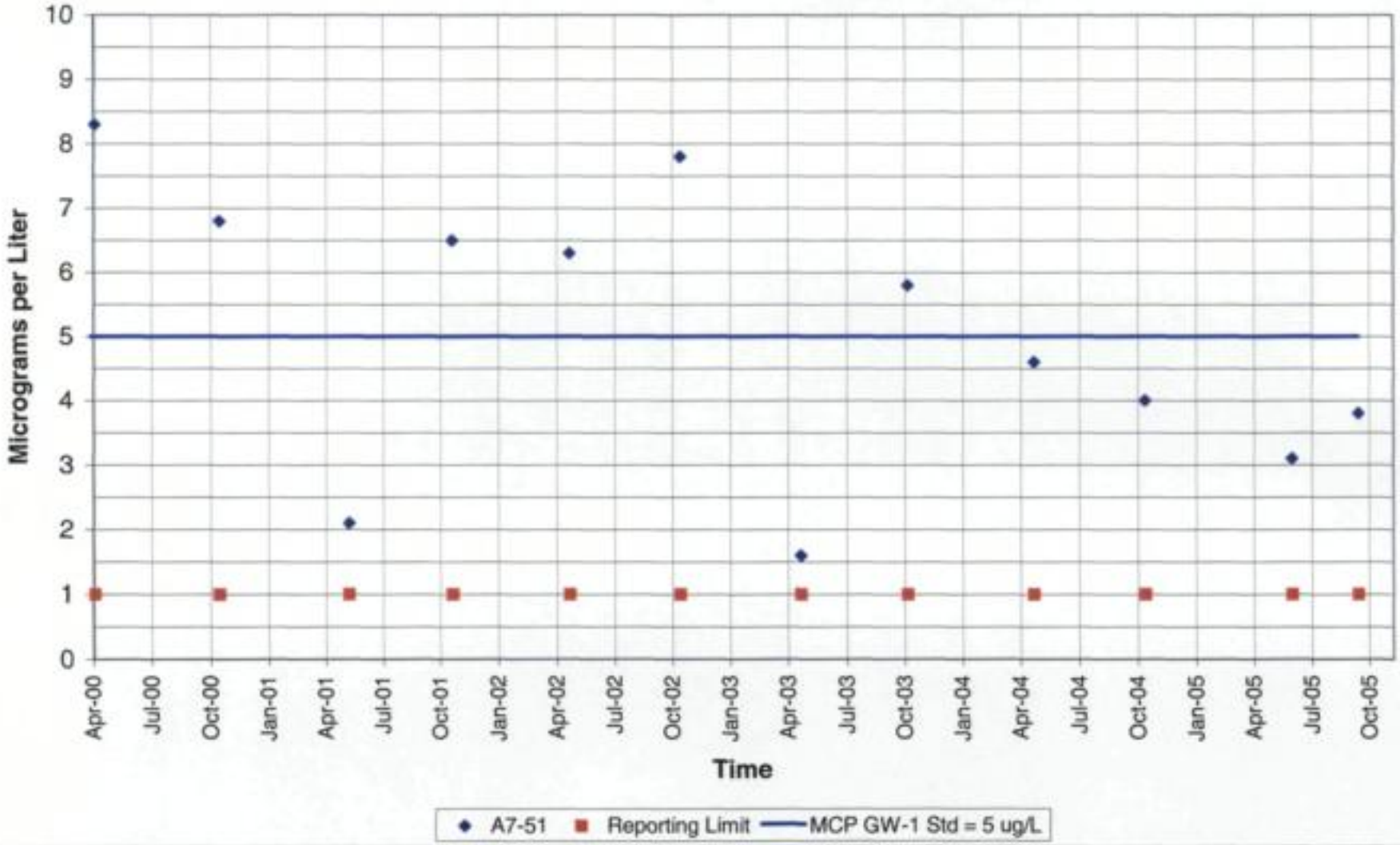


Chart 12: Tetrachloroethene (PCE) in OHM-A7-52

(Sampling at this well was discontinued from Fall 2005)

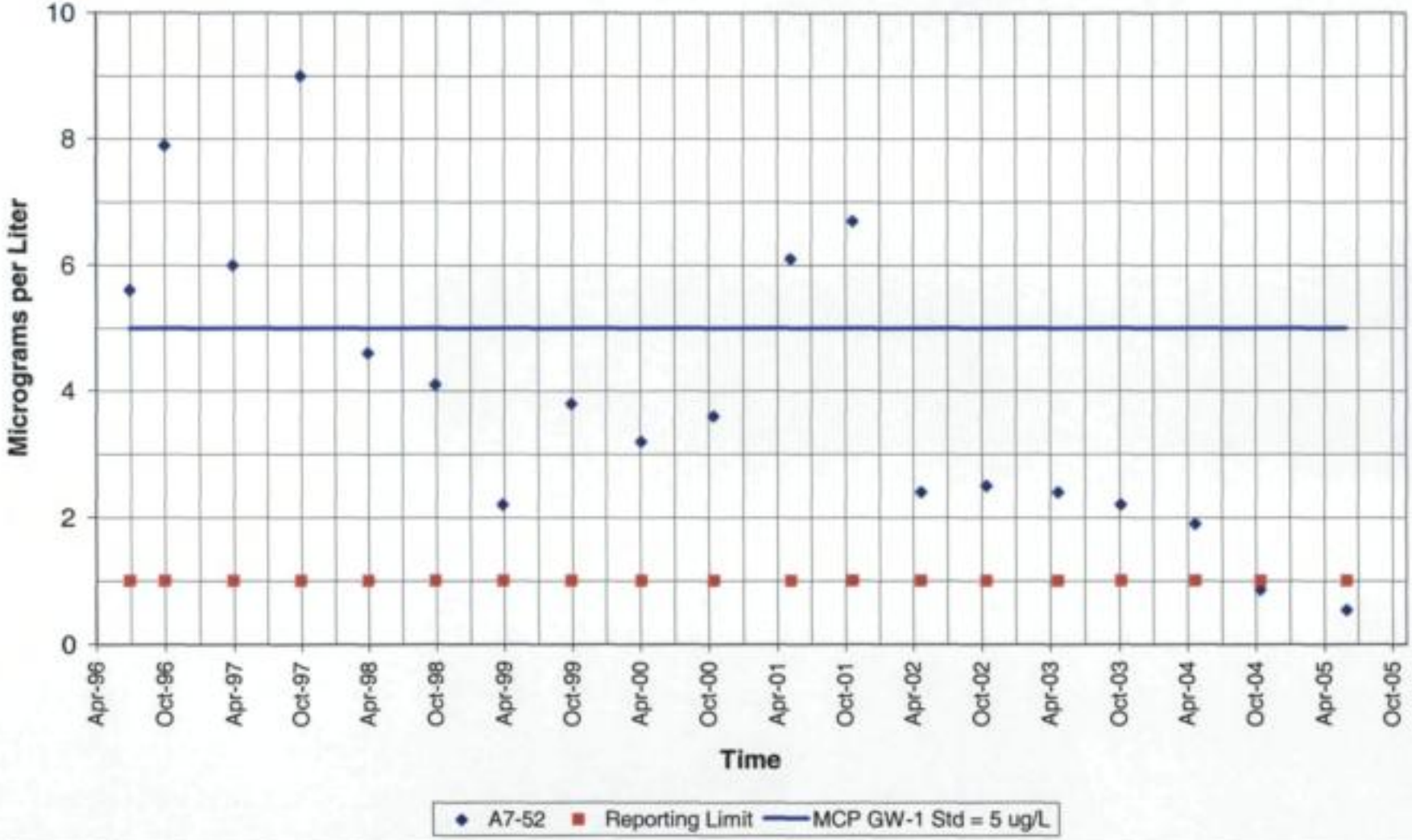


Chart 13: Tetrachloroethene (PCE) in JO-A07-M63

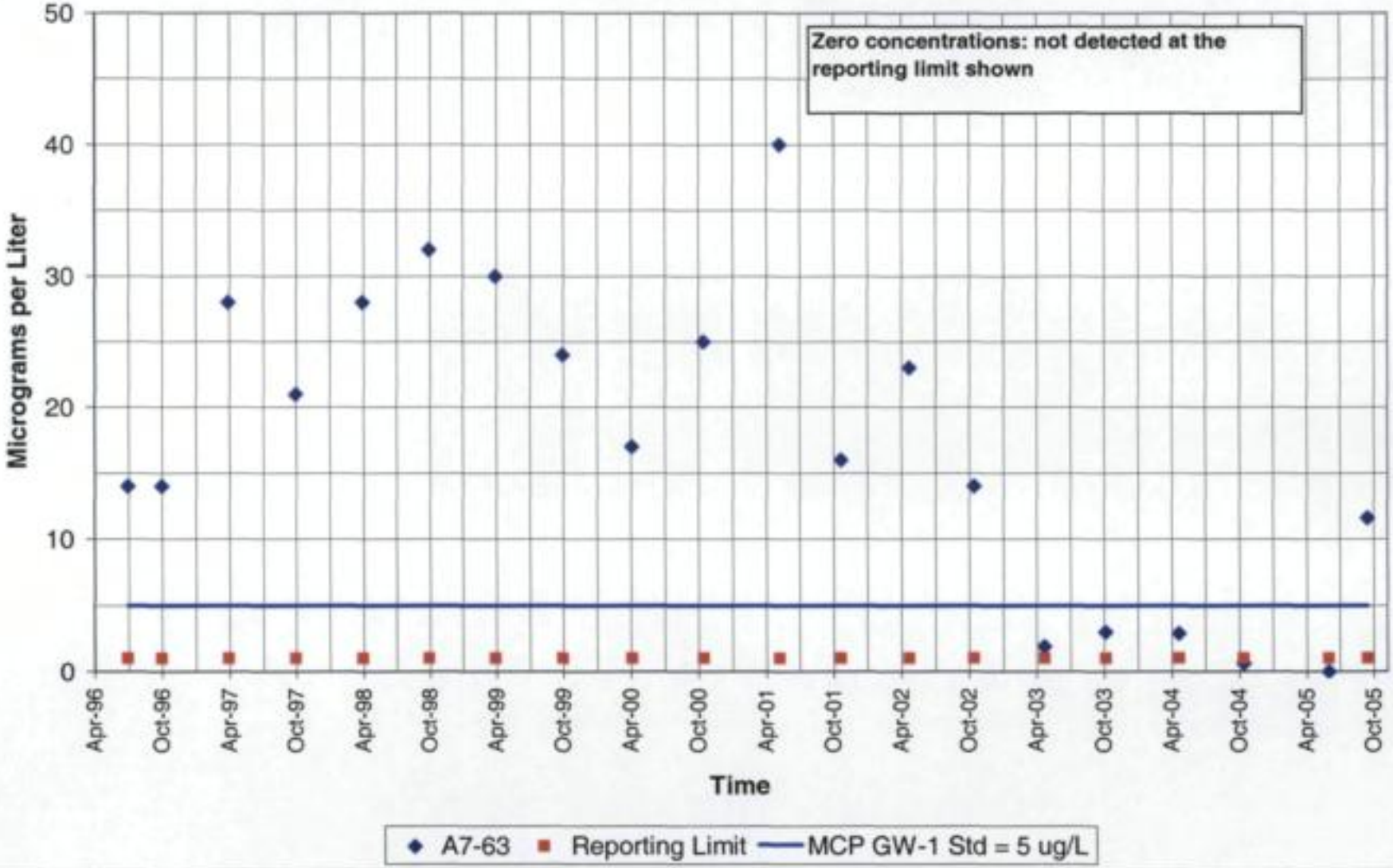


Chart 14: Trichloroethene (TCE) in OHM-A7-52 from 2000

(Sampling discontinued after June 2005)

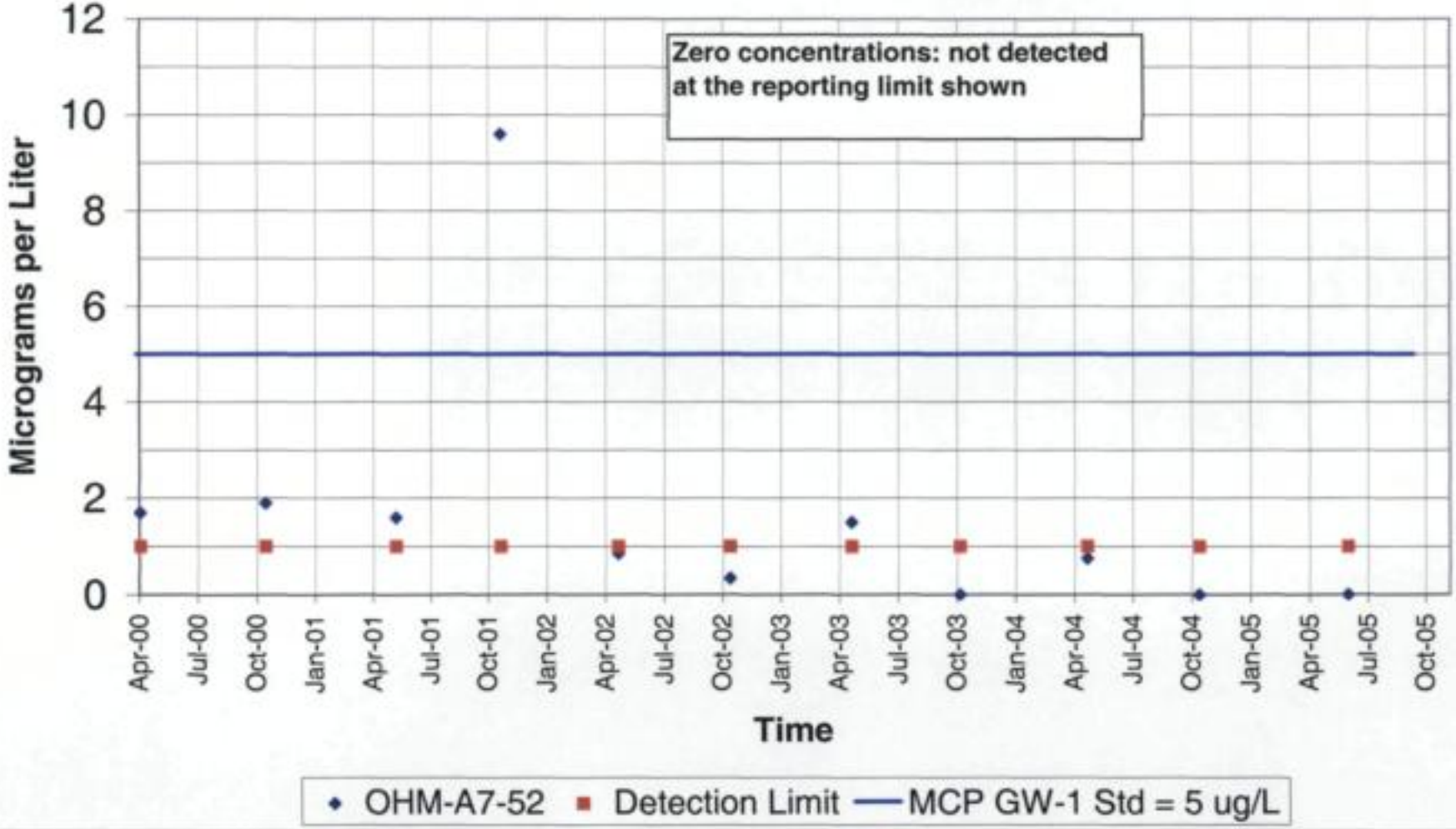


Chart 15: Trichloroethene (TCE) in JO-A07-M63

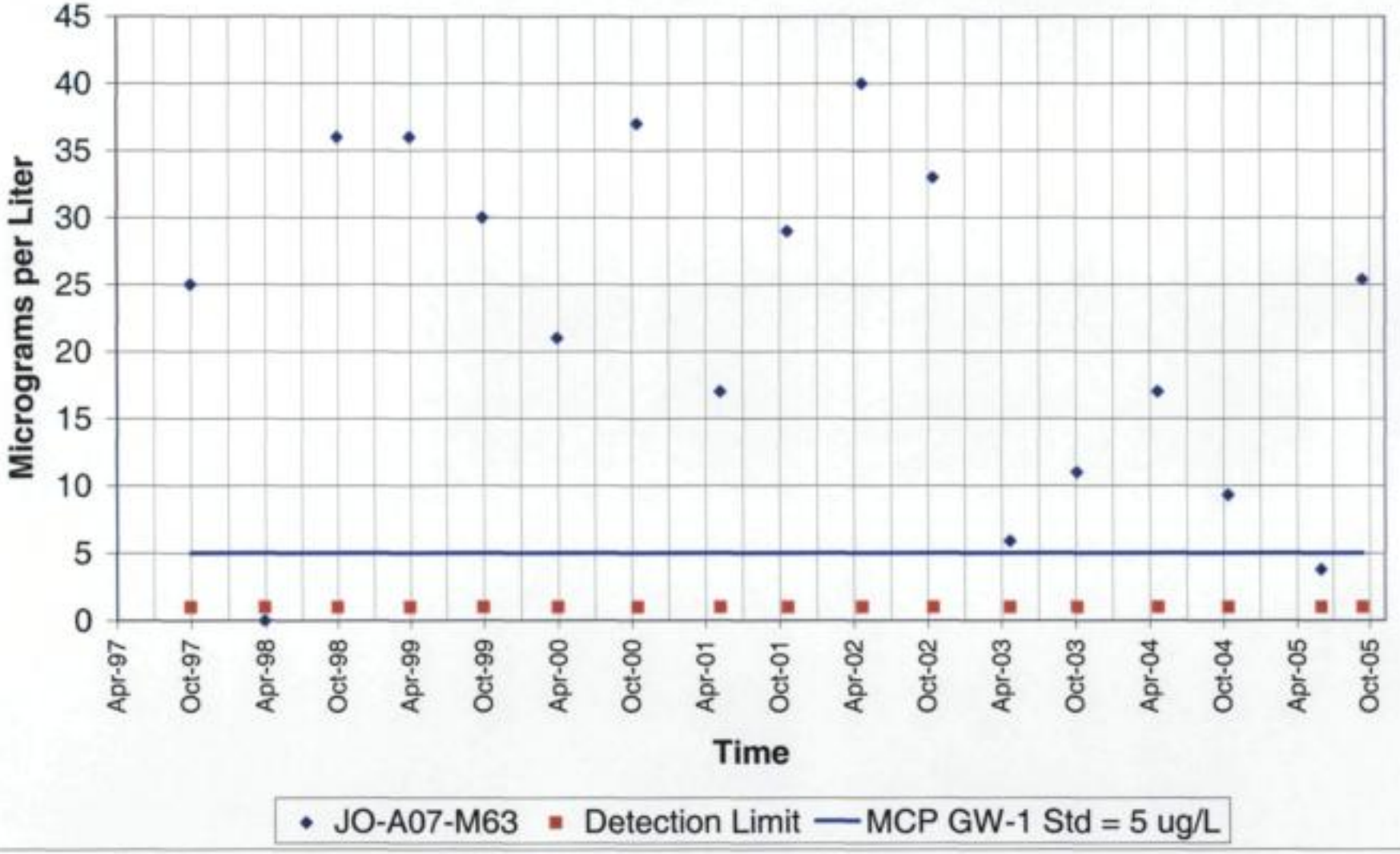
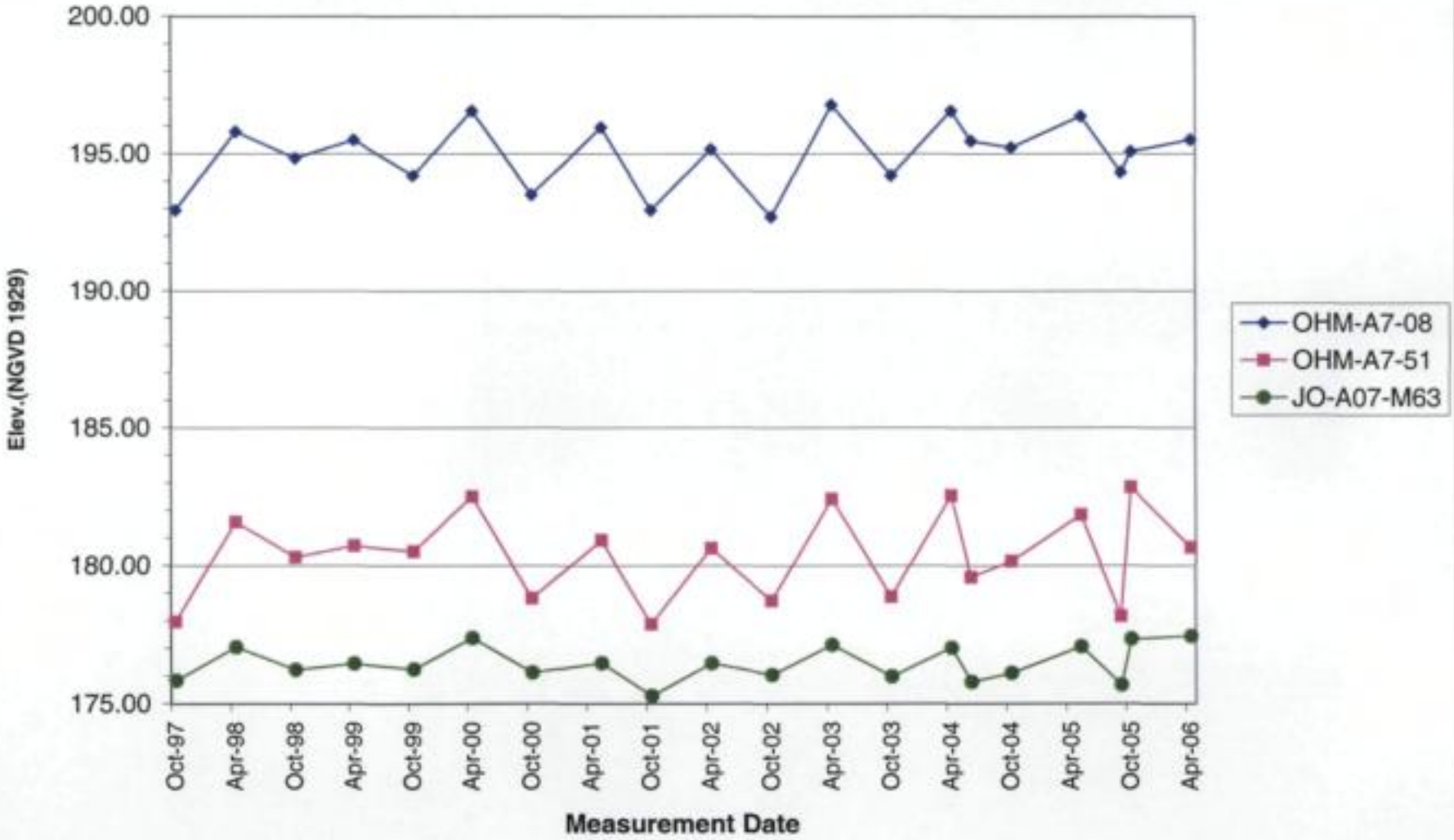


Chart 16
Historical Groundwater Elevations at OHM-A7-08, OHM-A7-51, and JO-A07-M63



SUDBURY ANNEX
2006 FIVE-YEAR REVIEW REPORT
TABLES

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
The following sites were included in Record of Decision documents signed by the EPA and Army with MassDEP concurrence: A4, A7, A9, A12, P11, P13, P36 and P37. For all other AOCs, NFADDs have been signed by the BCT. Greater specificity is included below in this table.					
A1	Decontaminated Mustard Area - located near the northern border of the Annex in Maynard, approximately 2,200-ft southeast of the Green Meadow Elementary School (E&E 1994). Field testing of fumigants, fungicides, and mustard agent. The site is bounded on the north by Patrol Road, on the south and west by Taylor Brook, and is accessed by a dirt road that diverges southwest from Patrol Road.	Cleaned up to residential cleanup goals for metals in soil, circa 1996. Cleanup goals for copper 30 mg/kg, lead 50 mg/kg, manganese 500 mg/kg and zinc 40 mg/kg (Master Environmental Plan Addendum, February 2002). Backfilled with soil from AOC P22. Institutional control in place per MOA between US Army and USFWS 28Sep2000 that requires notification for changes in land use from recreational and wildlife refuge. NFA DD signed December 1997 (see Weston 1997).	RA-CS (Weston 1997b). Removal of two empty drums, with excavation and removal of 38 yd^3 soil contaminated with metals. Removed soil was consolidated as subgrade to landfill cap at AOC A7. Backfilled with soils from AOC P22.	1996	No.
A2	Demolition Ground I - located near the northern border of the Annex, approximately 1,000-ft west of Site A1 and 300-ft south of Patrol Road (Weston 2001). A2 is bordered on the north by Patrol Road, on the east by Taylor Brook, and is accessed by a dirt road that diverges either southwest from Patrol Road or north from Puffer Pond.	Lead, cadmium, HMX, and camphor cleaned up to residential remediation goals, in July to November, 1996. Institutional control in place per MOA between US Army and USFWS 28Sep2000 that requires notification for changes in land use from recreational and wildlife refuge. NFA DD signed December 1997 (see Weston 1997).	RA-CS (Weston 1997b). Excavation and removal of approximately 156 cy of soil contaminated with metals, consolidated as subgrade to landfill cap at AOC A7. **Residential Remediation Goals:** Camphor 52 mg/kg, Sb 3.5, Cd 2, Cu 30, Zn 40, Pb 50 and HMX 5.8 mg/kg. Backfilled with soil from AOC P22. **Summary:** Antimony nondetect, with detection levels up to 3.2 mg/kg (below target of 3.5 mg/kg). Cadmium nondetect, with detection limits up to 0.91 mg/kg (below target of 2 mg/kg). Copper 4.1 to 14.6 mg/kg (below target of 30 mg/kg). Lead non-detect (detection limit 3.9 mg/kg) to 5.5 mg/kg (below target of 50 mg/kg). Zinc 12.9 to 32.9 mg/kg (below target of 40 mg/kg). HMX was not detected (the detection	1996, signed Dec 1997.	No. Residential soil standards were achieved at AOC A2. Since the MCP standards for these chemicals have not changed since 1997, the site remains protective of human health and the environment, with no land use restrictions.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
			limit was 1.1 mg/kg which is below the target of 5.8 mg/kg). Camphor was not detected (this included review of tentatively identified compounds). Backfill from AOC P22		
A3	General Dump (former trash dump). - AOC A3 and P5 are approx. 1,000 ft NE of Puffer Pond (Weston 2001). AOC A3 is a large cleared area sloping north to south. AOC A3 is bordered on its northern side by Patrol Road and on its western and southern sides by a wetland. Next to a road and a cranberry bog. Two dirt roads lead south and uphill from Patrol Road to a large sandy pit surrounded by earthen berms. The tree line borders the dirt road as well as the clear pit area. In the southern corner of the large pit, a trail leads south and then southwest for about 200-ft towards AOC P5 and the wetland	No further action decision document signed by BCT. See ABB 1996b. Soil—minor and infrequent exceedances of residential screening criteria for Aroclor-1254. Surface water and sediment—metals Al, Fe and Pb. Be and Al in sediment slightly exceed criteria (circa 1998). Heptachlor epoxide in GW, not exceeding GW-1 or EPA MCL standards.	Four drums removed. Soil left in place.	Nov 1998	No. A3 satisfies MCP S-1 and GW-1 standards.
A4	Waste Dump	No further action per record of decision (signed by Army and EPA with MassDEP concurrence). Risk assessment indicated suitability for unrestricted land use.	No information regarding types of waste material. Included in facility-wide arsenic investigation.	Sep97	No. No review required per ROD
A5	Solvent/Waste Dump	No further action decision document (Signed by BCT; see ABB 1996b), based on	Laboratory solvents disposed into a trench. Canned food buried.	Nov98	No

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		soil sampling with no exceedances of residential criteria for EPA Region 3 RBC for residential soil. (circa 1998).			
A6	Demolition Ground II Demolition of explosives from Watertown Arsenal and reject munitions.	NFA DD (Sudbury Annex Administrative Record (AR) document SU 94101EEP; U.S. Army Environmental Center, 1995b). No further action decision document signed by the Army with EPA concurrence 27 March 1995. NFA recommended based on low PAH concentrations and no migration of them.	No remediation conducted due to low levels of PAHs in soil and groundwater (falling below criteria MCP GW-1/ S-1 and MCL). Trace levels only of pesticides and metals. Localized PAHs at center of AOC A6. No migration of PAHs from the center of AOC A6.	Mar95	No.
A7	Old Gravel Pit Landfill – Landfill site has received materials from various other AOCs; some materials were transported away; the landfill was capped; AOC A7 has been inspected and wells sampled semiannually through May 2006. EPA has approved a recommendation to change to monitoring at fewer wells with the frequency changing to annual.	No further action to control soil source per record of decision, with long-term monitoring of groundwater to manage migration (OHM 1997; Weston 1997a). Constituents including VOCs, BNAs, PCBs, pesticides, herbicides, explosives, and metals. Institutional controls restrict other land uses.	Constituents are contained within a landfill that has a multi-layer impermeable cover. Included in facility-wide arsenic investigation.	SC ROD (OHM 1995b) Sep 95 MOM ROD (OHM 1997) signed Sep97	**Yes. Statutory review per ROD.**
A8	Food Burial Area	No further action decision document (NFADD signed by the Army with EPA concurrence March 27, 1995) for AOC A8/P10. AR document SU 94111EEP. Soil, surface water, and sediment sampling found no evidence of contamination. Soil criteria were protective of human health; (below MCP GW-1/ S-1 standard) sediment criteria were protective of ecological	Burial of foods following preservation experimentation. No contamination was found.	27 March 1995	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		health. (Ontario Ministry of the Environment lowest effect level and/or the NOAA effects range low-levels). Groundwater screening values were based on the assumption that groundwater would be used in the future and that the Annex will be used for residential purposes and is compared to MCP GW-1 standards and the EPA and MASSDEP MCLs for DW, no evidence of groundwater contamination was detected. (Master Environmental Plan Addendum, February 2002).			
A9	POL Burn Area	No further action and suitable for unrestricted land use per record of decision for management of migration (OHM 1997).	Eleven (11) cy of soil were removed, and backfilled with clean soil (Weston 1997b). Although the A9 site was included in facility-wide arsenic investigation, remedial actions at the site moved soils containing lead, thallium and arsenic in excess of the cleanup standards 300 mg/kg, 20 mg/kg, and 30 mg/kg. In each of these cases, the final concentrations were less than half the cleanup standards (thallium was not detected, with reporting limits up to 0.21 mg/kg).	Sep97	No.
A10	Railroad Pit/UST Area Neighbors reportedly dumped waste automotive oil into pit.	NFA DD for A8 and A10 (AR document SU 94111EEP; also ABB 1996b) signed by the Army, with EPA concurrence March 27, 1997. Constituents in soil found to be below EPA Region III risk-based concentrations for residential soil. All groundwater results were below federal and Massachusetts MCLs.	Former USTs have been pumped out and filled with water. Included in facility-wide arsenic investigation.	Dec99	No.
A11	Leaching Field - located in the southern part of the Sudbury Training Annex, east of the intersection of Marlboro Brook and Diagonal Road (Weston 2001). Bounded	NFADD (ABB 1996b) Inorganics in surface water formerly exceeded MCLs. Arsenic in sediment formerly exceeded criteria for soil. Cadmium in soil formerly exceeded ecological criteria. Risk assessment conducted for recreational visitors,	Sanitary sewer leaching field. A drum was removed from the area and staged with debris at AOC P13. Preliminary risk evaluation – No risk.	Dec98	No. Further information can be found in Appendix F.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	by Marlboro Brook and Diagonal Road on its western edge and by a forest on all other sides. This site was a sanitary sewer leaching field and served as the pump house and water purification systems for CFHA.	workers, construction workers, and groundwater use as drinking water.			
A12	Polychlorinated biphenyls (PCBs) Spill Remediation Area - AOC A12 is located in the southern part of the Annex and on the southern side of Moore Road between Firehouse Road and Diagonal Road (Weston 2001). This site is located between AOCs P36 and P37. AOC P36 (Former Raytheon Building) is located on the southern side of Moore Road in the southern part of the Sudbury Training Annex about 1,000-ft from the installation boundary (Weston 2001). AOC P37 is located near the intersection of Moore Road and Diagonal Road in the southern part of the Annex (Weston 2001), northeast of Building T104 (Site P36) and the	No further action per record of decision (ROD) for Operable Units 4 and 5 (US Army Environmental Center , 1996) which states that a five year review is not required. Cleanup goals were approved by MassDEP.	RA-CS: Temporarily stored transformers were vandalized and fluids spilled in 1983- 1984. In July 1985 transformers were removed and disposed of. 300 gallons of oil and 162.7 tons of soil were removed during multiple phases of remediation in the summer of 1985. Confirmatory samples after November 1985 indicated 1 result of 10.7 ppm, therefore MassDEP requested additional removal. Additional soil was excavated bringing the total to approximately 175 tons in 1986. Confirmatory samples yielded results of less than 4 ppm of PCBs. MassDEP approved clean up March 1, 1989 (OHM, 1994). Adjacent to AOC P36. Included in facility-wide arsenic investigation.	Sep96	No. Further information can be found in Appendix F.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	PCB remediation area (Site A12)				
P1	UST Across from Building T223 - on the southeastern side of Patrol Road, approximately 1,800-ft northeast of the main gate of the Sudbury Training Annex (Weston 2001).	No further action decision document signed by BCT. Risk assessment determined no adverse risks for recreational visitors, workers, construction workers, and ecological receptors.	Included in facility-wide arsenic investigation. Greater detail may be found in ABB 1997 (AR document SU97032ABBS; ABB 1997; see also HLA 1999), an SSI report in which ABB reported concern over potential exposures to As in AOC P1 soils for human receptors; antimony was reported from filtered groundwater as "slightly above its primary MCLs".	Dec99	No. Further information can be found in Appendix F.
P2	Building T267 Fuel Spills - situated on the southeastern side of Patrol Road about 2,000-ft northeast from the main gate of the Annex (Weston 2001). This aluminum building stands in a cleared area. Two large openings exist on the northern side of the structure.	Institutional control in place per MOA between US Army and USFWS 28Sep2000 (MOA 2000) that requires notification for changes in land use from recreational and wildlife refuge. USFWS reported in 2006 that Building T267 was removed in 2003. Post-remedial confirmation samples below residential cleanup goals.	RA-CS. Pesticide malathion was spilled onto dirt floor, with soil excavated in 1988 and removed with confirmation at 0.062 ppm. Metals and PCBs found in soil. 693 yd^3 soil removed and placed at AOC A7. Confirmatory samples taken after the removal action showed that residual concentrations were below MCP S-1 soil standards: • TPH at concentrations below 159 mg/kg • Lead below 11.4 mg/kg • Zinc below 20.7 mg/kg • VOCs not detected • SVOCs not detected • Diesel fuel below 48 mg/kg • Arsenic below 58.7 mg/kg The Army, EPA, and MassDEP agreed that no further excavation was needed. Excavation backfilled with clean soil.	1999	No.
P3	Building T209 UST	NFADD (AR document SU 94112EEP) signed by the Army, with EPA concurrence 27 March 1995, stating that no TPH was found at downgradient locations, and metals in groundwater appear to be associated with particulate matter.	Leaking UST containing heating oil. 190 tons of soil were removed. Residual soil contained less than 100 ppm TPH.	March 1995	No
P4	Bunker Drum Area in a wooded area	No further action decision document signed by BCT, stating no adverse risk associated with wildlife	Four intact and upright drums on a pallet, one marked "poison", were removed. Another drum was removed and staged at AOC P17.	Dec1999	No. Further information can be found in Appendix F.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	in the central area of the Sudbury Training Annex, south of Honey Brook between Bunkers 347 and 349 (Weston 2001). AOC P4: four upright 55-gallon drums, lashed together on a pallet, located between Bunker 347 and 349 (OHM 1994). One of the drums was marked "poison".	refuge or recreational land use, construction workers, or ecological receptors. ABB 1997 (AR document SU 97032ABBS) reported excessive SVOCs and arsenic in surface soils for residential development; possibly toxic concentrations of vanadium for certain plants. Recommended wildlife refuge land use with inclusion in facility-wide arsenic investigation.	Included in facility-wide arsenic investigation.		
P5	Drum Storage Area, reported in 2001 5-Yr Review as having been included in the SI for AOC A3.	No further action decision document signed by BCT. See also ABB 1996b.	Drums removed and staged at AOC P13. No visible staining of soil. Samples indicated the presence of metals slightly above background. Human health PRE with conservative assumptions of exposure. As and Be slightly above public health screening values. Ecological PRE: DDD, As, Cr and Pb slightly exceeded ecological screening values in only 1 or 2 samples.	Nov98	No.
P6	Puffer Pond Possible Dump Area - located in the forest between the northern shore of Puffer Pond and Puffer Pond Road (Weston 2001). The dirt access road into the site splits and ends in an oval loop by an old landing stage on the shore of Puffer Pond.	No further action decision document signed by BCT. See also ABB 1996b.	Possible dumping and burial of laboratory waste reported by former Natick laboratory employees. A preliminary risk evaluation was conducted for exposures to trespassers, recreational users, construction workers, and groundwater uses. Concentrations of inorganics in soil were found to exceed only ecological screening values, which was attributable to a single subsurface soil sample. In surface water, inorganic substances were detected in excess of human and ecological risk screening values, even though it is unlikely that the surface water is a viable source of drinking water. Pesticides were detected in sediment at concentrations exceeding ecological screening values, although in some cases the screening values were below values expected in the background.	Nov98	No. A significant change since 1998 is the current (2006) MCP GW-1 and EPA requirement (MCL) for arsenic in groundwater which has changed from 50 to 10 µg/L. The site remains protective of human health and the environment, even under the more stringent standard for arsenic in groundwater.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
			The ecological screening values for surface water sediment were notably conservative, and were determined to overestimate risks. The concentrations of constituents in groundwater were found to be acceptable since they were all less than the prevailing MCP standards. A no further action decision document was signed by BCT in November 1998.		
P7	Patrol Road Dump Area	NFADD signed by the Army 31 Aug 1995, EPA concurrence 14 November 1995. AR document SU 95042OHMP.	Miscellaneous chemical waste disposal area reported by former Natick laboratory employees. No contamination indicated by soil gas, test pits, soil and groundwater samples. No likely complete exposure pathway for ecological receptors. No remedial actions were conducted.	Apr95	No.
P8	Possible Transformer Disposal	See AOC A7.	Possible transformer disposal area within AOC A7. Subsumed into AOC A7 during remedial activities at AOC A7.	Sep97	No. The site is physically included in AOC A7.
P9	Stream Dump Sites A7 and A9 - near the northern border of the installation boundary between AOC A7 and AOC A9 along Patrol Road (Weston 2001). The dump area is on the north side of the intersection of Patrol Road and a southeast-to-northwest- flowing brook. The brook flows underneath a bridge on Patrol Road and continues northwest to the Assabet River about 800-ft to the north.	No further action decision document included in ABB 1996b.	Possible dumping and burial of laboratory waste reported by former Natick laboratory employees. Surface soil samples were taken in the timeframe May to September 1995. Risk assessment included soil exposures to trespasser, workers, construction workers, and use of the groundwater. Only minor exceedance of ecological criteria by pesticides in sediment. No remedial activities were conducted. Included in facility-wide arsenic investigation.	Dec99	No. The site is protective with the current institutional controls in place.
P10	Confidence Course Dump Area	No further action decision document with AOC A8.	Possible dumping and burial of laboratory waste was reported by former Natick laboratory employees. No significant evidence of contamination was found. No exceedances of criteria	Nov94	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
			for human or ecological health. Evaluated concurrently with AOC A8.		
P11	Building T405 Dump Area - Building T405 is located within AOC P11 on the Stow boundary of the Sudbury Annex, at the approximate center of the property (Weston 2001). Buildings T406 through T409 and the Firehouse are located in the vicinity of Building T405. Building T104 is located across Hudson Road, approximately 2 miles southeast of the main property.	Listed on NPL in 1990. Included in FFA between US Army and US EPA in 1991. No further action per ROD for OU4, allowing for use as a wildlife refuge (US Army Environmental Center 1996) The ROD for OUs 4 and 5 is AR document SU-96091USAS (US Army Environmental Center 1996)	Possible dumping and burial of laboratory waste along the fence line was reported by former Natick laboratory employees. Between July 1999 and August 2000 asbestos containing material was removed from 11 buildings and structures and disposed of at a permitted asbestos landfill. Between November 1999 and July 2000 remediation of explosive residue occurred within building T405 and the associated drainage system during the closure of AOC P11 and building T104. Confirmatory soil sample results were well below MCP S-1 guidelines in 2000. Fluorescent lights and ballasts, hazardous waste and scrap metal and mercury switches were removed from all buildings within the annex. Materials were classified and disposed of accordingly (Master Environmental Plan Addendum, February 2002). Further remedial actions occurred under BRAC. Confirmatory soil results were well below MCP S-1 human health standards in 2000. The ecological assessment indicated that arsenic, lead, and zinc in the soil were unlikely to pose a significant risk to the raccoon, red fox, white-footed mouse, or American robin species.	Sep96	No. Not required by the ROD for OU4. In addition, MCP S-1 standards have not changed since 2000, so the site remains protective.
P12	Abandoned UST at Site A9	NFA per ROD (AR document SU 96091 USAS; U.S. Army Environmental Center 1996) for Operable Units 4 and 5; signed by BCT for land use as a wildlife refuge. Removal actions in 1992 led to the remaining soil being tested and having 14-35 mg/kg of TPH; up to 0.27 ppm Zn; 0.5 ppm Pb.	RA-CS. UST holding JP-4 and water was removed and contents containerized. Soil beneath tank stained. 30.75 yd^3 containing TPH removed and recycled. Included in the AOC A9 ROD.	Sep96	No.
P13	MFFA (Massachusetts Fire Fighting Academy) –	Listed on NPL in 1990. Included in FFA between US Army and US EPA in 1991. No further action per record	Remediation actions occurred under BRAC (See AOC P11). USTs, ASTs, and fire training activities.	Sep96	No. The site remains protective

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	reviewed in connection with P11 - Building T405 is located within AOC P11 on the Stow boundary of the Sudbury Annex, at the approximate center of the property (Weston 2001). Buildings T406 through T409 and the Firehouse are located in the vicinity of Building T405. Building T104 is located across Hudson Road, approximately 2 miles southeast of the main property.	of decision (US Army Environmental Center 1996) for use as a wildlife refuge.	Post-remediation confirmatory soil results were well below MCP S-1 guidelines in 2000. The ecological assessment indicated that arsenic, lead, and zinc in the soil were unlikely to pose a significant risk to the raccoon, red fox, white-footed mouse, or American robin species. Included in facility-wide arsenic investigation.		while the MCP S-1 standards are unchanged.
P14	East Gate Burial Dump	NFADD (AR document SU94052OHMP) signed by US Army 4 Aug 1994, with EPA concurrence 13 April 1994. (Title page dated May 1994)	Disposal of drummed waste derived from polyurethane foam and fiberglass structure research. No evidence of the purported disposal was found.	Aug94	No. 2001 5YrRvw reported "no use restrictions".
P15	Navy Burning Ground	NFADD (AR document SU 94031OHMP; US Army Environmental Center 1994a) signed by the Army with EPA concurrence dated 25 March 1994.	SI - Identified as a burning ground by former Natick Laboratory employees. Field investigation included soil gas survey, geophysical survey and groundwater sampling from one well. No significant contamination was found. Upon second interview with Natick lab employees who first identified the site, that he mistook P15 for activities associated with area P48.	Mar94	No. The site was mistakenly identified.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
P16	Bunkers 302,306, and 309 - located in the north central part of the Annex on slightly higher ground between a wetland on the west and Puffer Pond to the east (Weston 2001). AOC P16 consists of three bunkers (302, 306, and 309) that are located 800 ft west of Puffer Pond along a dirt road which, in this area, runs parallel to Puffer Pond Road. The three bunkers are surrounded by forest and their entrances face the direct road. Surface elevations range from approximately 195 ft amsl at Bunker 309 to over 200 ft amsl at Bunker 302. Depth to groundwater was estimated to be less than 16-ft below ground surface (bgs). Surface water flows from the site to the northwest to the wetland and east toward Puffer Pond.	Institutional control in place per MOA between US Army and USFWS 28Sep2000 that requires notification for changes in land use from recreational and wildlife refuge. Post-remedial confirmation samples below residential cleanup goals. No further action decision document signed by BCT December 1997. See also ABB 1996b.	Former ammunition bunkers used to store waste from Natick Laboratories, wood pallets, sheet metal ductwork, heat exchangers, foods, and food preparation equipment. Soil in bunkers found to contain pesticides and PAHs in excess of risk-based concentrations. Arsenic and SVOCs detected in drainage pathways and soil between bunkers. Empty drum removed. 38 yd^3 of soil exceeding soil standards in August 1996 were removed and placed at AOC A7. The reader is referred to Weston 1997 RA closeout report for greater detail.	Dec97	No. MCP S-1 standards were not exceeded in the 1996 confirmatory soil sampling.
P17	Building T206	USFWS reported in 2006 that Building T206 was removed in 2003. No further action decision document signed by BCT.	Burial of Vietnam-era clothing from Natick Laboratories. No excess risk found for recreational visitors, workers, and construction workers. No remediation was found to be necessary. Included in facility-wide arsenic investigation.	Dec99	No.
P18	Cloth Burial Area. SI activities showed P18 to be the site of a discarded tent.	NFADD (AR document 94053OHMP) signed by the Army, with EPA concurrence 19 Aug 1994.	Burial of 1970s-era cloth from Natick Laboratories. No signs of contamination found. No remediation was found to be necessary.	May94	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
P19	Clearing and Tracked Area	NFADD (AR document SU95043OHMP; US Army Environmental Center 1995k) signed by Army 31 Aug 1995 with EPA concurrence 14 November 1995. (Title page April 1995)	Small burn area, stressed trees. One drum removed. One sample was taken. No indication of possible contamination was identified.	Nov95	No. No land use restrictions.
P20	Burned Area and Drum - AOC P20 is a clearing located in the north-central part of the Sudbury Training Annex (Weston 2001). The area is separated from Puffer Pond Road on the SW side by a soil and stone berm.	No further action decision document signed by BCT, January 13, 2000. ABB 1997 (SSI data packages, March 1997); AR document SU 97032 ABBS.	RA – CS. Small burn area, stressed trees. Remedial actions completed 1999. Soil excavated to 2 foot depth based on a lead cleanup goal of 300 mg/kg and laboratory confirmation samples.	Jan 13, 2000	No.
P21	Possible Dump Area	NFADD (AR document SU94054OHMP) signed by the Army, with EPA concurrence 19 August 1994.	Possible dump area by Natick Laboratories, reportedly with stained soil. No apparent contamination was found; no threat to human health or the environment.	May94	No.
P22	Old Gravel Pit	No further action decision document signed by BCT (USACE 1999).	No evidence of contamination was found. No remediation was found to be necessary. Soils from AOC P22 were used to backfill various AOCs from which soil was removed and applied to AOC A7.	Apr99	No.
P23	Building T465 (Drums). South side of Puffer Pond, in the central part of the Annex. - includes Building T465 and a concrete pad near the building (Weston 2001). P23 is on the broad crest of a ridge that slopes southeastward toward the northeastern most bunkers and slopes northwestward across Puffer Road	Institutional control in place per MOA between US Army and USFWS 28Sep2000 that requires notification for changes in land use from recreational and wildlife refuge. Post-remedial confirmation samples below residential cleanup goals. See also ABB 1996b. Cleanup satisfied MCP S-1 soil standards in 1996/1997; S-1 standards have not changed. Site remains protective of human health and the environment.	Former aerial delivery testing facility for Natick Laboratories, and for measuring smoke obscurants. Two drums removed. Arsenic and TPH found in soil at levels exceeding criteria protective of human health. Lead found at high levels at only one location, prior to remediation/excavation. 24 yd^3 of soil was excavated and removed to AOC A7, and backfilled with clean soil. Confirmatory soil samples were below the human health and ecological PRE cleanup goals that would confirm acceptability for use as residential land or as recreational/ wildlife refuge use (USACE ROD Sep1997; PRE "residential" standard was applied	Dec 97	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	toward Honey Brook		to A1, A2, A7, A9, P2, P16, P23, P39, P41 as outlined in Stone and Webster Basis of Design/Design Analysis1996)		
P24	Cleared Area	NFADD (AR document SU94055OHMP; US Army Environmental Center 1994m) signed Aug 1994 by Army with EPA concurrence 19 August 1994.	Cleared area with vehicle tracks and metal debris. No evidence of contamination was found, no samples taken, and no remediation was found to be necessary.	May94	No.
P25	Test Chamber Building T463 - located in the west-central part of the Sudbury Training Annex, about 3,000-ft south of the Assabet River and midway between Patrol Road and White Pond Road along an unpaved road connecting the two (Weston 2001). Building T463 stands against a hill and is surrounded by forest. Building T463 is a reinforced-concrete bunker-like structure, reported as empty April 2001.	NFADD (AR document SU95044OHMP; US Army Environmental Center 1995l) signed by the Army 31 Aug 1995 with EPA concurrence 14 November 1995.	Cleared area with vehicle tracks, a reinforced-concrete bunker-like structure, and an empty above-ground storage tank. Remedial actions were conducted, by removing the tank. Soil samples were compared to criteria protective of human and ecological health.	Nov95	No. Review confirms that there was no evidence of contamination.
P26	Air Drop Zone Clearing	NFADD (AR document SU 94102EEP; US Army Environmental Center 1995m) signed by by the Army 6 January 1995 with EPA concurrence 27 March 1995.	Area was used to test flame retardant clothing. Sampling of soil, surface water, and groundwater, and comparison to residential screening values indicated no evidence of contamination.	Mar 1995	No.
P27	Pyrotechnics Test Area - located in the north-central part of the Sudbury Training Annex on the north side of Patrol Road and mostly north of the	Listed on the NPL in 1990. No further action decision document signed by BCT. See also ABB 1996b.	Two clearings used to test pyrotechnics. A risk-based cleanup goal for arsenic was set at 250 mg/kg (for laboratory confirmation) and 200 µg/g (for analysis by on-site x-ray fluorescence). 3693 cy of soil and ACM were removed, and O&M for groundwater was conducted in	Aug00	No. Further information can be found in Appendix F. Cleanup removed material known to contain more than 250 mg/kg

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	perimeter fence (Weston 2001). Two clear areas, adjacent to a wetland on the north.		May 2001 GW sampling round for both total and dissolved arsenic. As was not detected in the May 2001 sampling event. (MEP Addendum, 2002).		arsenic. EPA has expressed concerns over toxicity values related to dirt-bikers' exposure to arsenic-containing dust. Since the toxicity value used to derive the cleanup goal has not changed, the site remains protective of human health and the environment.
P28	Rocket Range - located in the northern section of the southern part of the Annex (Weston 2001). The southern part of the Annex is just south of Hudson Road, which divides the Sudbury Training Annex into north and south sections. The AOC P28 location is also situated adjacent to the former CFHA, a residential area. The main corridor consists of an area about 3600-ft long and 100-ft wide and includes a gravel roadway. This area consists of a sandy-gravely surface that is relatively flat. No vegetation exists along this corridor. The surrounding area contains tall grass and brush,	Institutional control in place per MOA between US Army and USFWS 28Sep2000 that requires notification for changes in land use from recreational and wildlife refuge. See also ABB 1996b. Details can be found in Weston 1997.	RA – CS. Area formerly used for rail activities, rocket testing, and recreational activities. Herbicides used along railway and to maintain line-of-sight. Elevated levels of arsenic warranted soil removal actions. 4,700 yd^3 of soil was removed and placed at AOC A7. Excavation was backfilled from AOC P22. Included in facility-wide arsenic investigation.	Dec99	No. Further information can be found in Appendix F. Cleanup achieved arsenic levels below the risk-based target of 250 mg/kg for dirt-bikers' exposure to dust. MOA requires USFWS to notify EPA of any changes from recreational/ wildlife refuge use. AOC P28 is included in the facility-wide arsenic investigation discussed in Appendix F. Since the toxicity value used to derive the cleanup goal has not changed, the site remains protective of

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	and is moderately forested.				human health and the environment.
P29	Static Rocket Firing	NFADD (AR document SU 94032OHMP; US Army Environmental Center 1994g) signed by the Army with EPA concurrence 1 April 1994.	EAR – NC 1992 Forested area reportedly used to static fire rockets. No evidence of rocket firing was found.	Apr94	No. No use restrictions
P30	Proposed Test Area	NFADD (AR document SU94033OHMP; US Army Environmental Center 1994h), signed by the Army with EPA concurrence 1 April 1994, includes: "test area is believed to have been proposed but never implemented".	EAR – NC EAR performed February 1992. Proposed test area was investigated and no apparent contamination was found. No further action was proposed.	Mar94	No
P31	Old Dump - AOC P31 is located approximately 800-ft northwest of Lake Boon (Boons Pond in one aerial photo), between Sudbury Road and White Pond Road but also includes some area east of White Pond Road (Weston 2001). There are two ways to access the site: either by means of White Pond Road that diverges north from Sudbury Road at power pole 120-½, or through a parking lot located on the western part of the site adjacent to Sudbury Road. White Pond Road leads into the northern part of the AOC P31.	No further action decision document (USACE 1999) signed by BCT December 21, 1999.	Possible old dump with apparent stained soil and stressed vegetation. Two empty, crushed drums were removed. Cleared area. Sample concentrations did not exceed criteria protecting recreational users, workers, and construction workers.	Apr99	No. Further information can be found in Appendix F, presented in conjunction with AOC P58. The site required As sampling through spring 2001, at which time As was below 50 µg/L. Weston 2001 recommended abandoning the wells; wells were abandoned with EPA approval in June 2002; both the EPA MCL and the MassDEP MCL for As in drinking water have been lowered to 10 µg/L. See Appendix F.
P32	Road and Railroad Intersection	NFADD (AR document SU 94056OHMP; U.S. Army Environmental Center 1994j) signed by the Army 4 Aug 1994 with EPA concurrence	Road and rail intersection with burned areas, dead trees, and debris from off-site sources. No evidence of contamination was found.	Aug 1994.	No. No land use restrictions.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		19 August 1994.			
P33	Ground Scar	NFADD (AR document SU 95045OHMP; US Army Environmental Center 1995n) signed by the Army 3 August 1995 with EPA concurrence 14 November 1995.	Former railroad classification yard. No evidence of contamination was found.	Apr95	No. NC
P34	Vegetation Stress at Main Gate	NFADD (AR document SU 94057OHMP; US Army Environmental Center 1994k) signed by the Army 4 August 1994 with EPA concurrence 19 August 1994.	Area with a pipeline easement and a stone-lined pit with reported drums and stressed vegetation. No debris or evidence of contamination was found.	May94	No. NC
P35	Main Gate Guard Shack	No further action decision document signed by BCT(USACE 1999; Weston 2001).	Shack formerly contained non-asbestos flooring. ACM in walls and roof were removed, beginning March 15, 2000. A 275-gallon above-ground storage tank was removed, beginning March 17, 2000. Soil sample results did not exceed criteria for land use to be as a wildlife refuge, for recreational activities, or for USFWS workers.	Apr99	No. NC. No land use restrictions.
P36	Former Raytheon Building T104	Record of Decision included rationale for no further action (AR document SU 96091 USAS; U.S. Army Environmental Center 1996) for Operable Units 4 and 5; signed by the Army and EPA with MassDEP concurrence for land use as a wildlife refuge. Weston 1998 documented decontamination and asbestos abatement cleanup as completed in 1997.	Former research facility for missile guidance and radar systems, and manufacturing electronic equipment. Remediation activities: 10,000 gallon UST removed in December 1988. This UST was in good condition and contained no. 2 fuel oil. Cleanup goals were met.	Sep96	No. ROD. The P36 site "is suitable for unrestricted use" (MEP Addendum 2002).
P37	Building T106 UST	Record of Decision included rationale for no further action (AR document SU 96091 USAS; U.S. Army Environmental Center 1996). for Operable Units 4 and 5; signed by the Army and EPA with MassDEP concurrence for land use as a wildlife refuge.	Abandoned former Raytheon building. 1000 gallon heating (no. 2 fuel) oil tank removed in December 1988. The tank was in poor condition with extensive corrosion. .16 cubic yards of contaminated soil was removed. Confirmatory samples for TPH indicated 6521 and 6517 ppm for the stockpile concentrations	Sep96 *ROD* for OU5	No.
P38	Former Railroad Inspection Pit	NFA signature page dated December 1999 was included in AR binder XXVIII (ABB 1996b) (reported also by Weston 2001). Risk was based on	ABB 1996 arsenic study: Annex-wide subsurface soils study for arsenic in 1992-95: highest observation at P38 was 6.66 µg/g, well below highest observation at the annex (960 µg/g). The highest	Dec-99	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		recreational users and USFWS workers potentially exposed to surface soil and sediment.	concentration of arsenic in sediment at P38 was 11.5 µg/g, approximately the median observation in the study. The highest As concentration in surface soil (less than 2 ft deep) at P38 was 200 µg/g, a result in the top quartile of observations. Harding 2002 reported arsenic and manganese in sediment exceeding EPA Region III residential soils RBC, but less than the MCP S-1 standard. Included in facility-wide arsenic investigation.		
P39	Dump Area	NFA DD, Oct 1997 (Weston 1997b; see also Weston 2001)	RA-CS 1991 SI included sampling for metals, TPH, and pesticides and geophysical testing. A 1995 PRE indicated "no substantial human health or ecological risks" but recommended removal of debris with field screening to verify the location of one "hot spot". Stone & Webster 1996 BD/DA allowed for removal of approximately 14 cy to be placed in the landfill at AOC A7. 12 samples taken; detection limits too great. 13 further samples. Results were non-detect. "The MADEP and EPA did not require any further action for P39." (Weston 1997b).	Oct-97	No.
P40	Building T452 Area One known spill in 1992 led to removal of contaminated soil to TPH below 65 µg/g.	NFA DD (AR document SU94103EEP; U.S. Army Environmental Center 1995c) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995. Human health screening values assumed that the annex would be used for residential purposes and the groundwater would be used for potable water (so MCP GW-1 and EPA drinking water MCLs were used in the NFADD).	NCF One known spill in 1992 led to removal by Laidlaw of contaminated soil to TPH below 65 µg/g. Elevated metal concentrations in a cesspool were determined to be from plumbing in Building T452. Groundwater sampling indicated there was no solvent contamination.	Mar-95	No.
P41	Bunker 303 Pesticide Storage. Pesticides were found during PA/SI sampling, and S&W (S&W	NFA DD See also ABB 1996b. Details may be found in the Weston 1997 RA closeout report.	RA-CS Harding 2002 reported that 89 cy were removed from AOC P41 and CS showed no area containing DDD, DDT, or DDE above the cleanup goal. The property was	Oct-97 Signed Dec97, per Hardin g ESE	No. MOA requires that USFWS inform EPA of any change from

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	1996) proposed that contaminated soils be removed from AOC P41 and placed in the landfill at AOC A7 (BD/DA). Cleanup levels at AOC P41 were to MCP S-1 and GW-3.		transferred to USFWS in September 2000.	2002 (MEP adden dum)	recreational and wildlife refuge land use.
P42	Off-Site Dump (along the Annex property line).	NFA DD (AR document SU 94104EEP; US Army Environmental Center 1995d) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995.	NCF NFADD: "The results of extensive environmental investigations, including historic documentation reviews, and sampling efforts at AOC P42 do not indicate any discernable impact from the site on surface soil, or surface water and sediments in the vicinity." Human health screening satisfied requirements for potential use of groundwater for residential use (e.g., GW-1 and EPA MCLs)	March 1995	No. There are no use restrictions at AOC P42
P43	A/B-Disturbed Area/ Staining Soils and Stressed Vegetation P43A is 800 ft north of Maynard Town Well No. 3; P43B is between Maynard Town Well No. 3 and the parking lot south of Digital Corporation.	NFA DD (AR document SU 94105EEP; US Army Environmental Center 1995e) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995. "The results of extensive environmental investigations, including historic documentation reviews, and sampling efforts at AOC P43A/B do not indicate any significant contamination or discernable impact from the site on the surface soil, or surface water and sediments in the vicinity. The SI undertaken by E&E confirmed that no evidence of contamination could be identified and that a threat to human health or the environment at the site appears highly unlikely."	NCF No evidence of contamination at P43A/B.	March 1995	No. There are no use restrictions at AOC P43 A/B.
P44	A/B-Clearing with Stains and White Objects. Located at land now (2006) operated by FEMA.	NFA DD (AR document SU93034OHMP; US Army Environmental Center 1994b) signed by the Army 9 March 1994 with EPA concurrence 28 March 1994. No evidence	EAR – NC. EAR 1992 confirmed the results of a 1985 reconnaissance.	Mar-94	No. No use restrictions

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		of a threat to human health or the environment.			
P45	Burned Area Outside Fence	NFA DD See also ABB 1996b. per Weston 2001.	PRE for NFADD assumed USFWS could be exposed to soil, sediment, surface water, and groundwater could be used for potable water. Included in facility-wide arsenic investigation.	Dec-99	No.
P46	Cleared/Burned Area/ Dead Trees	NFA DD (AR document 94035OHMP; US Army Environmental Center 1994c) signed by the Army 9 March 1994 with EPA concurrence 28 March 1994.	EAR-NC. Identified by EPA by aerial photo interpretation. Site reconnaissance in 1985 which showed no evidence of disposal or burning activities. EAR was done in 1992, no evidence of stressed vegetation was found. No samples collected and no further action proposed. There was a devastating gypsy moth outbreak in 1980 and 1981. The damaged vegetation identified on aerial photographs may have been the result of heavy infestation of the gypsy moth on the hardwoods.	Mar-94	No.
P47	Damaged Vegetation	NFA DD (AR document SU 94036OHMP; US Army Environmental Center 1994d) signed by the Army 9 March 1994 with EPA concurrence 28 March 1994.	EAR-NC Area initially identified by EPA as damaged vegetation. EAR was performed in 1985, found dead trees but no disposal area was noted. No evidence of contamination was found in area of reconnaissance. No samples were taken. There was a devastating gypsy moth outbreak in 1980 and 1981. The damaged vegetation identified on aerial photographs may have been the result of heavy infestation of the gypsy moth on the hardwoods.	March 1994	No
P48	Fuel Bladder Area Area is 30 ft by 45 ft.	NFADD signed by the Army 6 January 1995 with EPA concurrence 27 March 1995 (US Army Environmental Center 1995f). "Although historical evidence identified that POL bladders and clothing treated with fungicides were tested at AOC P48, and spills from the POL bladders were reported to have occurred, sampling results to date do not indicate any residual contamination in subsurface soils or	NCF Human health screenings for the NFADD assumed groundwater would be used in the future and the Annex would be used for residential purposes (therefore used MCP GW-1 and EPA MCLs for drinking water).	March 1995	No

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
		groundwater at the site that would pose potential risks to human health or the environment."			
P49	Two Drums Near Road/ Bunker 323 AOC P49 is located in the vicinity of Bunker 323 in the central area of the Annex (Weston 2001). The bunker is located on the side of an east-to-west-trending stretch of road.	NFA DD (AR document SU 94046OHMP; US Army Environmental Center 1995o) signed by the Army 31 August 1995 with EPA concurrence 14 November 1995. NFADD signed by the Army in August 1995, EPA concurrence 14 Nov 1995. AOC P49 was removed from further consideration under CERCLA. No further investigation or remediation was necessary.	RA-CS. An SI by OHM in 1991/92 assessed the land as suitable for unrestricted development. The noted drums were removed and confirmatory sampling was performed. No volatile organics or pesticides were detected. Following drum removal, soil sampling at and around the drums led to the following findings for the pesticides DDT, DDE, DDD, dieldrin and heptachlor epoxide, the volatile organic compound tetrachloroethene (PCE), and the metal nickel: DDT concentrations ranged from 0.03 to 0.23 mg/kg (below the 2 mg/kg standard for a human health assessment, or 0.5 mg/kg for an ecological assessment.) DDE concentrations ranged from 0.055 to 0.124 mg/kg (below the 2 mg/kg standard for a human health assessment, or 0.5 mg/kg for an ecological assessment) DDD concentrations ranged from non-detect to 0.071 mg/kg (below the 2 mg/kg standard for a human health assessment, or 0.5 mg/kg for an ecological assessment) Dieldrin detected in one sample at 0.012 mg/kg (below the 0.03 mg/kg standard for a human health assessment) Heptachlor epoxide detected in only one of the five soil samples at 0.005 mg/kg (below the 0.06 mg/kg standard for a human health assessment). PCE detected once at 0.003 mg/kg (below the 200 mg/kg standard for a human health assessment). Nickel, at 41.5 mg/kg in the one sample that was analyzed for metals (greater than the background concentration but below the 300 mg/kg standard for human health assessment or 100	Nov 1995	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
			mg/kg for an ecological health). The concentrations in soil suggested that the drums may have once contained solvents and pesticides. The post-removal sampling indicated that "extensive contamination" due to pesticides, VOCs, and/or metals did not exist. This finding led to an NFADD signed by the Army in August 1995, EPA concurrence 14 Nov 1995.		
P50	One Drum Near Road/ Bunker 325 NFA DD (AR document SU 94058OHMP) signed by the Army 4 August 1994 with EPA concurrence 19 August 1994. No contamination was found in the sample that was collected.	NFA DD (AR document SU 94058OHMP; US Army Environmental Center 1994i) signed by the Army 4 August 1994 with EPA concurrence 19 August 1994. No contamination was found in the sample that was collected.	RA-CS One drum was removed. There are no use restrictions at AOC P50.	Aug-94	No.
P51	One Drum Near White Pond Road AOC P51 is located on the west-central part of the Sudbury Training Annex along White Pond Road, approximately 1,600-ft north of the intersection with Patrol Road (Weston 2001). West across White Pond Road from this point, there is and extensive wetland. AOC P51 was identified by OHM during a site reconnaissance in March 1991 (Weston 2001). One drum was discovered along the edge of White	NFA DD (AR document SU 95047OHMP; US Army Environmental Center 1995j) signed by the Army 31 August 1995 with EPA concurrence 14 November 1995. Confirmation sampling of soil as follows: All samples were compared to EcoRisk screening values (ESAT 1994) Human health PRE compared soil samples to MCP S-1/ GW-1 soil standards. "the activities involved in the OHM investigation qualified for a categorical exclusion (CX) in accordance with National Environmental Policy Act (NEPA), as amended, and did not require prior preparation of an environmental assessment or an environmental impact statement."	SI performed 1991-1992. Drum was removed, staged, scanned. Took confirmatory samples VOAs, SVOCs TAL metals explosives, PCBs/Pesticides. 9 metals detected above background concentrations, but the exceedances were not widespread, so were considered not representative of the true risk at P51. Additional 4 point grid around area where drum was located. **Results** **Pesticides** – none exceeded the 2 ppm standard for human health, and none exceeded the ecological screening value (ESAT 1994) of 0.5 µg/g. **Dieldrin** – 0.117 ppm (exceeded the standard, but in only 1 of 5 samples). **Arsenic** – 12 ppm. Greater detail can be found in the NFA DD. RA-CS	Nov 1995	No. There are no use restrictions at AOC P51.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	Pond Road.				
P52	Possible Dump Area near FEMA Property	NFADD (AR document 94113EEP; US Army Environmental Center, 1995g) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995. "no physical or chemical evidence of contamination above screening levels has been found at this site."	NCF	March 1995	No. There are no use restrictions at AOC P52
P53	Building T210 "UST" Sign indicated No. 2 Fuel Oil.	NFA DD (AR document SU 94037OHMP; US Army Environmental Center, 1994e) signed by the Army 9 March 1994 with EPA concurrence 28 March 1994): "no evidence of contamination was observed." Building T210 was located across the road from the proposed location of the USFWS Visitors' Center, for which a Finding of No Significant Impact was approved March 1, 2006 for this new construction.	NCF Site was identified in 1991. The UST was found to be an AST in the building. No visual evidence of staining. GW samples were taken as part of a facility wide investigation, no PCBs Pesticides, SVOCs, VOCs, TAL metals explosives, chlorinated herbicides or phosphate were detected. No significant contamination was found; based on the results of the investigation NFA recommendation was made. No remediation and no further action.	Mar-94	No. There are no use restrictions at AOC P53.
P54	Bunkers 305,307, and 314. Identified as a general chemical storage area. NFA DD PRE assumed land to be used as a wildlife refuge, with recreational users and USFWS workers potentially exposed, with possible use of groundwater for drinking water supply.	NFA DD (included in ABB 1996b.) PRE assumed land to be used as a wildlife refuge, with recreational users and USFWS workers potentially exposed, with possible use of groundwater for drinking water supply.	Sampling was conducted for SVOCs, pesticides, arsenic. Included in facility-wide arsenic investigation: several soil boring samples were found to have As concentrations in the top quartile of the Annex's soil boring sample results, and two of these had concentrations exceeding 20 μg/g, and the peak observed value was 86 μg/g (both of these were at nominal depth 4 feet)	Dec-99	No.

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
P55	Cleared Area South of Bunker 301	NFA DD (AR document SU 94038OHMP) signed by the Army with EPA concurrence March 1994, stating "no evidence of contamination was observed".	EAR-NC The site was identified as possible site based on vegetation condition. Recommendation for an EAR. The EAR in Feb 1992 was a field investigation. No evidence of possible contamination was found and no samples were taken. The differing forest density and varying tree heights in the area may have been the cause for the identification of a clearing based on aerial photographs (NFA DD, March 1994) NC	Mar-94	No. There are no use restrictions at AOC 55.
P56	Cleared Area South of Bunker 313.	NFA DD (AR document SU 94107EEP; US Army Environmental Center 1995h) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995.	NCF	March 1995	No. There are no use restrictions at AOC P56.
P57	Former Building S449	NFA DD (AR document SU 94108EEP; US Army Environmental Center 1995i) signed by the Army 6 January 1995 with EPA concurrence 27 March 1995. "Sampling results did not identify any site-related contamination other than low-level PAH concentrations in the immediate area around the metal and debris in the center of the site. It is highly unlikely that the residual PAH levels pose any threat to human health or the environment. Given that no impacts were detected in groundwater, sediment, or soils outside of this one area."	NCF	March 1995	No. There are no use restrictions at AOC P57.
P58	Sudbury Road Dump. The wetland area is approximately 450 ft x 70 ft. (Weston 2001) A culvert on the western end of the wetland carries water under Sudbury Road and drains into Lake Boon.	Close-Out Report (+ LTM required through spring 2001) (AR document SU 00021USAP; HLA 1999 and BEC 2000) signed by the Army 21 March 2000; by EPA 15 March 2000; by MassDEP 14 March 2000.	Four wells at AOC P31 and AOC P58 were required to be sampled semi-annually at least through spring 2001. Following the May 2001 sampling event, the 2001 Five-Year Review (Weston 2001) reported that all concentrations were below the EPA drinking water MCL of 50 µg/L, and that there was no trend of concentrations rising over time. The report therefore recommended that no further sampling should be	March 2000.	No. Further information can be found in Appendix F, presented in conjunction with AOC P31. It is no longer clear that arsenic concentrations in groundwater are below the

Table 1. Site Status Table

Site	Site Description	Current Protectiveness and Decision Status	Disposition of Waste	Date	Evaluated in Five Year Review?
	AOC P58 is immediately north of AOC P31. P58 is an exposed dump in a NE-to-SW oriented wetland area, surrounded by forest.		done, and that the wells should be abandoned. The wells were abandoned with EPA approval in June 2002.		new (lowered) EPA MCL of 10 µg/L. See Appendix F.
P59	Cans/ Metal Debris North of B-319 Included five-gallon cans and other metal debris.	NFA signature page signed December 1999 and included in USACE 1999. Debris was removed from the site. Supplementary SSI (HLA February 1999) advised NFA based on the site's small size (approximately ¼ acre), the fact that DDT seemed to be undergoing degradation over time, and any further removal action would result in untenable habitat destruction.	Only arsenic was reported in soil in excess of MCP S-1 soil standards and EPA residential RBC. Included in facility-wide arsenic investigation.	Dec 1999.	No. NFA was based on small site size, low yet subsiding DDT, and likely habitat destruction during any further removal actions for arsenic.
P60	Three Drums West of Patrol Road	NFA signature page signed December 1999 and included in USACE 1999.	Drums were removed. Only arsenic exceeded MCP S-1 soil standards and EPA residential RBC. Included in facility-wide arsenic investigation.	Dec 1999	No. Adequate protectiveness is ensured through institutional controls provided by the US Fish and Wildlife Service who use the land for recreational and wildlife refuge purposes.
P61	Honey Brook Old Dump	NFADD Weston Remedial Action Completion Report 1999 (AR document SU 99091RFWR; Weston 1999)	Weston Remedial Action Completion Report 1999 (AR document SU 99091RFWR) RA-CS. CS was 3 sediment samples plus QC that included field duplicate and lab MS/MSD for QC. Drum was removed from the stream. Sediment was sampled for PAHs, TOC, grain size distribution, immediately downgradient of the drum's location.	Dec 15, 1999	No.

ACM – Asbestos-containing material
Al – Aluminum
AR – Administrative Record
As – Arsenic
AST – Above-ground Storage Tank
Be – Beryllium
Cd – Cadmium
Cu – Copper
Cr – Chromium (chrome)
BD/DA – Basis of Design/Design Analysis
cy – cubic yards, alternatively: yd^3
EAR-NC – Enhanced Area Reconnaissance – No Contamination
Facility-wide arsenic investigation – An acknowledged issue of arsenic having been a constituent in pesticides that were applied along the sides of the road and railway lines. Land that was ceded to USFWS had the added caveat that any development by USFWS along the roads would take into account the fact of slowly diminishing arsenic concentrations along a narrow corridor around the perimeter fence, the perimeter road, and railway lines. PRE "residential" standard was applied to A1, A2, A7, A9, P2, P16, P23, P39, P41 as outlined in ABB Environmental Services Phase II Facility-Wide Arsenic Investigation U.S. Army Sudbury Training Annex.
Fe – Iron
FFA - Federal Facilities Agreement
FRA-NR – Full Risk Assessment – No Risk
JP-4 – Jet Propulsion Fuel, Type 4
NC – No Contamination
NCF – No Contamination Found
NFA DD – No Further Action Decision Document
NPL – National Priorities List
NOAA – National Oceanic and Atmospheric Administration
OU – Operable Unit
PAH – Polycyclic aromatic hydrocarbon(s)
Pb – Lead
PRE – Preliminary Risk Evaluation – no risk
RA-CS – Removal Action – Confirmatory Sampling
RBC – Risk-based concentration
ROD – Record of Decision
Sb – Antimony PID – photoionization detector
SI – Site Investigation
SVOC – semivolatile organic compound
TOC – Total organic carbon
TPH – Total petroleum hydrocarbon(s)
UST – Underground Storage Tank
VOC – volatile organic compound
yd^3 – cubic yards

Table 2: Chronology of Site Events at AOC A7

(Table is embedded in Section 3.3 of the 2006 Five-Year Review).

Table 3
Groundwater VOC Analytical Results - May 9-10, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 1 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
VOLATILES (SW846-8260B)															
trans-1,3-Dichloropropene	0.5 *	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
m-Xylene & p-Xylene	6,000 *	0.18 J	0.65 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
o-Xylene	6,000 *	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane (Freon 12)	10,000	0.18 J	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Chloromethane	1,000	<1	<2	0.45 J	<1	<1	<1	0.27 J	<1.2	<1	<1	<1	0.26 J	<1	<1
Vinyl chloride	2	<1	<2	**2.1**	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Bromomethane	2	<1	<2	0.12 J	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Chloroethane	1,000	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane (Freon 11)	10,000	0.36 J	<2	<1	0.96 J	<1	0.37	0.37	<1.2	<1	2.7 J	4.6 J	1.9	<1	0.37 J
1,1-Dichloroethene	1	<1	**<2**	<1	<1	<1	<1	<1	**<1.2**	<1	<1	<1	<1	<1	<1
Methylene chloride	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	0.2 J	<1	<1	1.7
1,1-Dichloroethane	70	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	0.22 J
2,2-Dichloropropane	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	4.9 J	<5.2	<1	<1	<1	<1	<1	<1.2	<1	0.22 J	0.48 J	<1	<1	11
Chloroform	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	0.78 J	<1	<1	<1
Bromochloromethane	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	1
Benzene	5	0.38 J	0.42 J	<1	<1	<1	<1	<1	<1.2	0.37 J	<1	<1	<1	<1	<1
Trichloroethene	5	0.67 J	2.1	<1	<1	<1	<1	<1	<1.2	<1	0.82 J	1.6 J	<1	<1	**17**
1,2-Dichloropropane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Bromodichloromethane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Dibromomethane	5,000	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Toluene	1,000	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	1.9
Tetrachloroethene	5	**40**	**37 J**	<1	<1	<1	<1	<1	<1.2	<1	2.1 J	**6.1 J**	1.2	<1	**40**
Dibromochloromethane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Chlorobenzene	100	3.2 J	3.2 J	<1	<1	<1	<1	<1	<1.2	0.85 J	<1	0.62 J	<1	<1	0.53
1,1,1,2-Tetrachloroethane	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Ethylbenzene	700	<1	1.1 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Styrene	100	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Bromoform	5	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	**52 J**	1.2	<1	**12**
Bromobenzene	1,000	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	600	<1	<2	<1	<1	<1	<1	<1	<1.2	0.61 J	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	5	<1	<2	<1	<1	<1	<1	<1	<1.2	0.94 J	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	600	0.12 J	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane (DBCP)	100	<2	<4	2	<2	<2	<2	<2	<2.5	<2	<2	2.9 J	<2	<2	<2
1,2,4-Trichlorobenzene	70	1.3 J	1.4 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	0.6	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
Naphthalene	20	1.5 J	1.3 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	2.1
1,2,3-Trichlorobenzene	-	1.1 J	1.3 J	<1	<1	<1	<1	<1	<1.2	<1	<1	0.39 J	<1	<1	<1
1,3-Dichloropropane	0 5	**<1**	**<2**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1.2**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
1,2-Dibromoethane (EDB)		<2	<4	<2	<2	<2	<2	<2	<2.5	<2	<2	<2	<2	<2	<2
Isopropylbenzene	10,000	0.87 J	0.8 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	1,000	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
n-Propylbenzene	-	0.81 J	0.75 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
2-Chlorotoluene	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
4-Chlorotoluene		<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	-	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	-	0.24 J	0.26 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	-	0.4 J	0.38 J	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	-	0.18 J	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
n-Butylbenzene	-	0.19 J	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	(5)	<1	<2	<1	<1	<1	<1	<1	<1.2	<1	<1	<1	<1	<1	<1

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

25

* Regulatory standard is for total 1,3-Dichloropropene and total Xylenes

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = Analyte is also present in equipment blank sample at a reportable level.

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

NA = Not Analyzed

E = Estimated values greater than the instrument calibration range

Table 3
Groundwater VOC Analytical Results - October 22 - 24, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 2 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
VOLATILES (SW846-8260B)															
trans-1,3-Dichloropropene	0.5 *	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
m-Xylene & p-Xylene	6,000 *	0.53 J	0.65 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
o-Xylene	6,000 *	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Dichlorodifluoromethane (Freon 12)	10,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Chloromethane	1,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Vinyl chloride (chloroethene)	2	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Bromomethane	2	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Chloroethane	1,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Trichlorofluoromethane (Freon 11)	10,000	<6.2	<2	<1	0.44 J	<1	0.45 J	No sample	<1	No sample	4.5	2.1	No sample	<1	0.54 J
1,1-Dichloroethene	1	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Methylene chloride	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
trans-1,2-Dichloroethene	100	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	1.4	No sample	<1	4.0
1,1-Dichloroethane	70	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	0.29 J
2,2-Dichloropropane	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
cis-1,2-Dichloroethene	70	4.3 J	5.1	<1	<1	<1	<1	No sample	<1	No sample	0.67 J	4.0	No sample	<1	16
Chloroform	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	0.90 J	<1	No sample	<1	<1
Bromochloromethane	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,1,1-Trichloroethane	200	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,1-Dichloropropene	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Carbon tetrachloride	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2-Dichloroethane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	1.1	No sample	<1	3.6
Benzene	5	0.70 J	0.88 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	0.27 J
Trichloroethene	5	2.2 J	2.1	<1	<1	<1	<1	No sample	<1	No sample	1.9	**9.6**	No sample	<1	**29**
1,2-Dichloropropane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Bromodichloromethane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Dibromomethane	5,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Toluene	1,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,1,2-Trichloroethane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	1.7
Tetrachloroethene	5	**59 J**	**77 J**	<1	<1	<1	<1	No sample	<1	No sample	**6.5**	**6.7**	No sample	<1	**16**
Dibromochloromethane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Chlorobenzene	100	17	20	0.78 J	<1	<1	<1	No sample	<1	No sample	2.3	<1	No sample	<1	2.8
1,1,1,2-Tetrachloroethane	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Ethylbenzene	700	0.83 J	1.1 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Styrene	100	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Bromoform	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,1,2,2-Tetrachloroethane	2	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	**6.0**	**2.9**	No sample	<1	**14**
Bromobenzene	1,000	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,3-Dichlorobenzene	600	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,4-Dichlorobenzene	5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2-Dichlorobenzene	600	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2-Dibromo-3-chloropropane (DBCP)	100	<12	<4	<2	<2	<2	<2	No sample	<2	No sample	<2	<2	No sample	<2	<2
1,2,4-Trichlorobenzene	70	1.6 J	2.3 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Hexachlorobutadiene	0.6	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
Naphthalene	20	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	2.1
1,2,3-Trichlorobenzene	-	<6.2	2.0	<1	<1	<1	<1	No sample	<1	No sample	0.95 J	<1	No sample	<1	0.17 J
1,3-Dichloropropane	0.5	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2-Dibromoethane (EDB)		<12	<4	<2	<2	<2	<2	No sample	<2	No sample	<2	<2	No sample	<2	<2
Isopropylbenzene	10,000	2.9 J	3.6 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2,3-Trichloropropane	1,000	<6.2 J	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
n-Propylbenzene	-	2.3 J	3.0 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
2-Chlorotoluene	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
4-Chlorotoluene		<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,3,5-Trimethylbenzene	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
tert-Butylbenzene	-	<6.2 J	0.33 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
1,2,4-Trimethylbenzene	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	0.37 J
sec-Butylbenzene	-	2.7 J	3.7 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
p-Isopropyltoluene	-	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
n-Butylbenzene	-	1.6 J	2.2 J	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1
cis-1,3-Dichloropropene	(5)	<6.2	<2	<1	<1	<1	<1	No sample	<1	No sample	<1	<1	No sample	<1	<1

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = Analyte is also present in equipment blank sample at a reportable level.

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

NA = Not Analyzed

25

* Regulatory standard is for total 1,3-Dichloropropene and total Xylenes

Metals specific qualifiers:

B (metals) = Estimated value; result is less than the reporting limit

J (metals) = Associated method blank showed reportable concentration of this analyte.

Table 3
Groundwater VOC Analytical Results - April 23-25, 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 3 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
VOLATILES (SW846-8260B)															
trans-1,3-Dichloropropene	0.5 *	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
m-Xylene & p-Xylene	6,000 *	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
o-Xylene	6,000 *	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Dichlorodifluoromethane (Freon 12)	10,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Chloromethane	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Vinyl chloride (chloroethene)	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Bromomethane	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Chloroethane	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Trichlorofluoromethane (Freon 11)	10,000	<1	<1	0.93 J	<1	<1	0.38 J	<1	<1	<1	3.2	2.1	1.7	<1	< 2
1,1-Dichloroethene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.18 J	<1	<1	<1	< 2
Methylene chloride	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
trans-1,2-Dichloroethene	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6.7
1,1-Dichloroethane	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.32 J
2,2-Dichloropropane	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
cis-1,2-Dichloroethene	70	0.9 J	0.93 J	<1	<1	<1	<1	<1	<1	0.16 J	0.92 J	0.41 J	<1	<1	19
Chloroform	5	0.24 J	0.25 J	<1	<1	<1	<1	<1	<1	<1	<1	0.24 J	0.51 J	<1	1.8 J
Bromochloromethane	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,1,1-Trichloroethane	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,1-Dichloropropene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Carbon tetrachloride	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,2-Dichloroethane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4.4
Benzene	5	0.21 J	0.24 J	<1	<1	<1	<1	<1	<1	0.21 J	<1	<1	0.16 J	0.13 J	0.80 J,B
Trichloroethene	5	0.37 J	0.40 J	<1	<1	<1	<1	<1	<1	<1	2.0	0.85 J	<1	<1	**40**
1,2-Dichloropropane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Bromodichloromethane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Dibromomethane	5,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Toluene	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,1,2-Trichloroethane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.9 J
Tetrachloroethene	5	**14**	**16**	<1	<1	<1	<1	<1	<1	<1	**6.3**	2.4	1.6	<1	**23**
Dibromochloromethane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Chlorobenzene	100	3.7	4.1	<1	<1	<1	<1	<1	<1	0.58 J	<1	<1	<1	<1	6.6
1,1,1,2-Tetrachloroethane	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	**7.5**	<1	<1	<1	< 2
Ethylbenzene	700	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Styrene	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Bromoform	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,1,2,2-Tetrachloroethane	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	0.97 J	<1	**20**
Bromobenzene	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,3-Dichlorobenzene	600	<1	<1	<1	<1	<1	<1	<1	<1	0.19 J	<1	<1	<1	<1	< 2
1,4-Dichlorobenzene	5	0.18 J	0.21 J	<1	<1	<1	<1	<1	<1	0.39 J	<1	<1	<1	<1	< 2
1,2-Dichlorobenzene	600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,2-Dibromo-3-chloropropane (DBCP)	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.8 J	1.3 J	<2	<2	< 4
1,2,4-Trichlorobenzene	70	1.6	2.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Hexachlorobutadiene	0.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
Naphthalene	20	<1	<1	0.52 J,B	0.38 J,B	<1	<1	<1	<1	<1	<1	<1	<1	0.28 J,B	< 2
1,2,3-Trichlorobenzene	-	1.0 B	1.3 B	<1	<1	<1	<1	<1	<1	<1	0.56 J,B	<1	<1	<1	< 2
1,3-Dichloropropane	0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,2-Dibromoethane (EDB)		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	< 4
Isopropylbenzene	10,000	0.54 J	0.61 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,2,3-Trichloropropane	1,000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
n-Propylbenzene	-	0.33 J	0.37 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
2-Chlorotoluene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
4-Chlorotoluene		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,3,5-Trimethylbenzene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
tert-Butylbenzene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
1,2,4-Trimethylbenzene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
sec-Butylbenzene	-	1.2	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
p-Isopropyltoluene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
n-Butylbenzene	-	0.74 J, B	0.86 J,B	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2
cis-1,3-Dichloropropene	(5)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 2

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

25

J = Estimated value less than PQL or based on data evaluation of laboratory results
B = Analyte is also present in equipment or method blank sample at a reportable level.
G = Elevated reporting limit. The reporting limit is elevated due to matrix interference
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
NT = Well not sampled.
NA = Not Analyzed

* Regulatory standard is for total 1,3-Dichloropropene and total Xylenes

Metals specific qualifiers:

B (metals) = Estimated value; result is less than the reporting limit
J (metals) = Associated method blank showed reportable concentration of this analyte.

Table 3
Groundwater VOC Analytical Results - October 15,17, 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 4 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
VOLATILES (SW846-8260B)															
trans-1,3-Dichloropropene	0.5 *	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	<1	NT	<1	<1
m-Xylene & p-Xylene	6,000 *	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	<1	NT	<1	<1
o-Xylene	6,000 *	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	<1	NT	<1	<1
Dichlorodifluoromethane (Freon 12)	10,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Chloromethane	1,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Vinyl chloride (chloroethene)	2	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Bromomethane	2	0.23 J	< 1	<1 N	<1	<1	<1	WD	0.16 J	NT	0.23 J	0.37 J	NT	<1	<1
Chloroethane	1,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Trichlorofluoromethane (Freon 11)	10,000	<1	<1	<1 N	0.37 J	<1	0.60 J	WD	<1	NT	2.7	2.1	NT	<1	<1
1,1-Dichloroethene	1	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Methylene chloride	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
trans-1,2-Dichloroethene	100	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	0.50 J	< 1	NT	< 1	4.9
1,1-Dichloroethane	70	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	0.26 J
2,2-Dichloropropane	-	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
cis-1,2-Dichloroethene	70	3.1	2.8	0.27 J,N	<1	<1	<1	WD	<1	NT	1.3	0.24 J	NT	0.17 J	15
Chloroform	5	<1	< 1	<1	<1	<1	<1	WD	<1	NT	<1	< 1	NT	< 1	<1
Bromochloromethane	-	< 1	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,1,1-Trichloroethane	200	< 1	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,1-Dichloropropene	-	< 1	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
Carbon tetrachloride	5	< 1	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,2-Dichloroethane	5	< 1	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	3.1
Benzene	5	0.47 J	0.47 J	<1 N	<1	<1	<1	WD	<1	NT	0.26 J	< 1	NT	< 1	0.46 J
Trichloroethene	5	0.96 J	0.81 J	<1 N	<1	<1	<1	WD	<1	NT	2.7	0.34 J	NT	< 1	**33**
1,2-Dichloropropane	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	0.18 J
Bromodichloromethane	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
Dibromomethane	5,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
Toluene	1,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
1,1,2-Trichloroethane	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	1.9
Tetrachloroethene	5	**33**	**31**	<1 N	<1	<1	<1	WD	<1	NT	**7.8**	2.5	NT	1.3	**14**
Dibromochloromethane	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	< 1	NT	< 1	<1
Chlorobenzene	100	11	9.8	0.88 J,N	<1	<1	<1	WD	<1	NT	5.9	< 1	NT	< 1	4.3
1,1,1,2-Tetrachloroethane	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
Ethylbenzene	700	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
Styrene	100	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
Bromoform	5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
1,1,2,2-Tetrachloroethane	2	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	**6.1**	1.4	NT	< 1	**13**
Bromobenzene	1,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,3-Dichlorobenzene	600	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	< 1	NT	<1	<1
1,4-Dichlorobenzene	5	0.26 J	0.22 J	<1 N	<1	<1	<1	WD	<1	NT	<1	0.13 J	NT	<1	<1
1,2-Dichlorobenzene	600	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	0.21 J	< 1	NT	<1	<1
1,2-Dibromo-3-chloropropane (DBCP)	100	< 2	<2	<2 N	<2	<2	< 2	WD	<2	NT	<2	<2	NT	<2	<2
1,2,4-Trichlorobenzene	70	1.3	1.5	<1 N	<1	<1	<1	WD	<1	NT	0.34 J	0.29 J	NT	<1	<1
Hexachlorobutadiene	0.6	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	<1	<1	NT	<1	<1
Naphthalene	20	0.49 J	0.43 J	0.34 J,N	<1	<1	<1	WD	<1	NT	<1	0.21 J	NT	<1	<1
1,2,3-Trichlorobenzene	-	1.0 J+	<1	<1	<1	<1	<1	WD	<1	NT	<1	<1	NT	< 1	<1
1,3-Dichloropropane	0.5	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	< 1	<1
1,2-Dibromoethane (EDB)		< 2	< 2	< 2 N	<2	< 2	< 2	WD	<2	NT	<2	<2	NT	<2	<2
Isopropylbenzene	10,000	1.3	1.3	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,2,3-Trichloropropane	1,000	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
n-Propylbenzene	-	0.67 J	0.69 J	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
2-Chlorotoluene	-	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
4-Chlorotoluene		<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,3,5-Trimethylbenzene	-	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
tert-Butylbenzene	-	0.21 J	0.18 J	0.38 J,N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
1,2,4-Trimethylbenzene	-	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
sec-Butylbenzene	-	1.8	1.9	0.36 J,N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
p-Isopropyltoluene	-	0.13 J	< 1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
n-Butylbenzene	-	0.91 J	0.84 J	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1
cis-1,3-Dichloropropene	(5)	<1	<1	<1 N	<1	<1	<1	WD	<1	NT	< 1	< 1	NT	<1	<1

Shaded area with bold numbers indicates MCP GW-1 exceedance. - 25

J = Estimated value less than PQL or based on data evaluation of laboratory results

UN = Tentative nondetection due to blank contamination / value is within 5X result reported for blank

J+ = Concentration biased high due to blank contamination

NT = Well not sampled.

N = Analyzed outside holding time by 13 days.

NA = Not Analyzed

WD = Well Previously Decommissioned

* Regulatory standard is for total 1,3-dichloropropene and total xylenes

Sample-specific qualifiers:

- OHM-A7-13 was decommissioned in June 2002.

OHM-A7-46 and OHM-A7-51 were not sampled in October 2002 due to low groundwater elevations.

Table 3
Groundwater VOC Analytical Results - April 22-24, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 5 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
VOLATILES (SW846-8260B)															
trans-1,3-Dichloropropene	0.5 *	<1	< 1	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
m-Xylene & p-Xylene	6,000 *	<1	< 1	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
o-Xylene	6,000 *	0.16 J	0.15 J	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane (Freon 12)	10,000	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Chloromethane	1,000	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Vinyl chloride (chloroethene)	2	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Bromomethane	2	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	<1	<1	<1	<1
Chloroethane	1,000	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Trichlorofluoromethane (Freon 11)	10,000	<1	< 1	<1	0.42 J	<1	<1	WD	<1	<1	2.8	1.6	0.52 J	<1	<1
1,1-Dichloroethene	1	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Methylene chloride	5	0.42 B,J	0.42 B,J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
trans-1,2-Dichloroethene	100	<1	< 1	<1	<1	<1	<1	WD	<1	<1	0.28 J	0.17 J	<1	< 1	0.64 J
1,1-Dichloroethane	70	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
2,2-Dichloropropane	-	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
cis-1,2-Dichloroethene	70	8.8	9.5	<1	<1	<1	<1	WD	<1	<1	0.73 J	0.44 J	<1	<1	2.9
Chloroform	5	<1	< 1	<1	<1	<1	<1	WD	<1	<1	0.45 J	0.15 J	0.19 J	< 1	0.25 J
Bromochloromethane	-	< 1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,1,1-Trichloroethane	200	< 1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,1-Dichloropropene	-	< 1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
Carbon tetrachloride	5	< 1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,2-Dichloroethane	5	< 1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	0.54 J
Benzene	5	0.52 J	0.53 J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
Trichloroethene	5	1.3	1.5	<1	<1	<1	<1	WD	<1	<1	1.6	1.5	<1	< 1	**5.9**
1,2-Dichloropropane	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
Bromodichloromethane	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
Dibromomethane	5,000	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	<1
Toluene	1,000	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	0.27 J
1,1,2-Trichloroethane	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	< 1	0.68 J
Tetrachloroethene	5	**24**	**24**	<1	<1	<1	<1	WD	<1	<1	**6.4**	2.4	0.70 J	< 1	1.9
Dibromochloromethane	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	<1	< 1	< 1	< 1	<1
Chlorobenzene	100	2.9	2.9	<1	<1	<1	<1	WD	<1	0.46 J	1	< 1	< 1	< 1	<1
1,1,1,2-Tetrachloroethane	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	< 1	< 1	<1
Ethylbenzene	700	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	< 1	< 1	<1
Styrene	100	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	< 1	< 1	<1
Bromoform	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	< 1	< 1	<1
1,1,2,2-Tetrachloroethane	2	<1	<1	<1	<1	<1	<1	WD	<1	<1	**4.8**	1.2	< 1	< 1	**5.1**
Bromobenzene	1,000	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,3-Dichlorobenzene	600	<1	<1	<1	<1	<1	<1	WD	<1	<1	<1	< 1	<1	<1	<1
1,4-Dichlorobenzene	5	<1	<1	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	600	<1	<1	<1	<1	<1	<1	WD	<1	0.18 J	< 1	< 1	<1	<1	<1
1,2-Dibromo-3-chloropropane (DBCP)	100	< 2	<2	<2	<2	<2	< 2	WD	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	70	2.1	2.1	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	0.6	<1	<1	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
Naphthalene	20	0.33 J	0.42 J	<1	<1	<1	<1	WD	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	-	1.5	1.6	<1	<1	<1	<1	WD	<1	<1	0.53 J	<1	< 1	< 1	<1
1,3-Dichloropropane	0.5	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	< 1	< 1	<1
1,2-Dibromoethane (EDB)		< 2	< 2	< 2	<2	< 2	< 2	WD	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene	10,000	0.66 J	0.68 J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,2,3-Trichloropropane	1,000	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
n-Propylbenzene	-	0.85 J	0.91 J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
2-Chlorotoluene	-	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
4-Chlorotoluene		<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,3,5-Trimethylbenzene	-	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
tert-Butylbenzene	-	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
1,2,4-Trimethylbenzene	-	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
sec-Butylbenzene	-	0.58 J	0.61 J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
p-Isopropyltoluene	-	<1	< 1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
n-Butylbenzene	-	0.18 J	0.19 J	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1
cis-1,3-Dichloropropene	(5)	<1	<1	<1	<1	<1	<1	WD	<1	<1	< 1	< 1	<1	<1	<1

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

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J = Estimated value less than PQL or based on data evaluation of laboratory results

B = The compound was detected at less than 5x the concentration detected in either lab or field (trip or equipment) blank samples.

WD = Well Previously Decommissioned

* Regulatory standard is for total 1,3-dichloropropene and total xylenes

Sample-specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

Table 3
Groundwater VOC Analytical Results - October 6-8, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 6 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8 (AMRO split)	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	ug/L															
VOLATILES (SW846-8260B)																
trans-1,3-Dichloropropene	0.5 *	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m-Xylene & p-Xylene	6,000 *	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	6,000 *	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane (Freon 12)	10,000	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	1.8 J	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	1,000	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride (chloroethene)	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	2	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	1,000	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane (Freon 11)	10,000	< 1.0	< 1.0	< 1.0	1.2 J	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	2.0 J	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene chloride	5	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3
1,1-Dichloroethane	70	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	70	3.6 J	3.6 J	3.3	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.8
Chloroform	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon tetrachloride	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1
Benzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	5	< 1.0	< 1.0	0.78 J	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	1.3 J	< 1.0	< 1.0	< 1.0	**11**
1,2-Dichloropropane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	5,000	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	1,000	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0
Tetrachloroethene	5	**23 J**	**23 J**	**24**	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	**5.8 J**	2.2 J	1.6	< 1.0	3.0
Dibromochloromethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	100	5.9 J	5.6 J	5.6	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	1.6 J	< 1.0	< 1.0	< 1.0	1.2
1,1,1,2-Tetrachloroethane	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	700	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	**2.4 J**	1.2 J	< 1.0	< 1.0	**3.8**
Bromobenzene	1,000	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	600	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	600	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane (DBCP)	100	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2,4-Trichlorobenzene	70	< 1.0	1.1 J	1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	0.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	-	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	0.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane (EDB)		< 2.0	< 2.0	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Isopropylbenzene	10,000	< 1.0	< 1.0	0.57 J	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	1,000	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	-	< 1.0	< 1.0	0.61 J	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Butylbenzene	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	(5)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

UN = Tentative nondetection due to blank contamination / value is within 5X result reported for blank

J+ = Concentration biased high due to blank contamination

NT = Well not sampled.

N = Analyzed outside holding time by 13 days.

NA = Not Analyzed

WD = Well Previously Decommissioned

*** Regulatory standard is for total 1,3-dichloropropene and total xylenes**

Sample-specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

In October 2003, **OHM-A7-08, 09, 10, 45, 46, 51 and 52** were received at excessive temperature and so all detections are "J"-qualified.

Table 3
Groundwater VOC Analytical Results - April 21-23, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 7 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	ug/L															
VOLATILES (SW846-8260B)																
trans-1,3-Dichloropropene	0.5 *	1 U	1 U	1.0 U	1 U	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
m-Xylene & p-Xylene	6,000 *	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
o-Xylene	6,000 *	1.0 U	1.0 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Dichlorodifluoromethane (Freon 12)	10,000	1 U	1 U	5.0 UJ	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Chloromethane	1,000	1 U	1 U	5.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Vinyl chloride (chloroethene)	2	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Bromomethane	2	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Chloroethane	1,000	1 U	1 U	5.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Trichlorofluoromethane (Freon 11)	10,000	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1.5 J	1.2 J	0.68 J	1 U	0.37 J
1,1-Dichloroethene	1	1 U	1 U	1.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Methylene chloride	5	1.0 U	1.0 U	5.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
trans-1,2-Dichloroethene	100	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1.6
1,1-Dichloroethane	70	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
2,2-Dichloropropane	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
cis-1,2-Dichloroethene	70	4.9	5.1	5.4	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	0.58 J	0.35 J	1 U	1 U	9.2
Chloroform	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	0.20 J	1 UJ	0.20 J	1 U	0.34 J
Bromochloromethane	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,1-Dichloropropene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Carbon tetrachloride	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1.5
Benzene	5	0.44 J	0.40 J	1.0 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	0.22 J	1 UJ	1 UJ	1 U	1 U	1 U
Trichloroethene	5	1.4	1.3	1.3 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	0.85 J	0.75 J	1 U	1 U	**17**
1,2-Dichloropropane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Bromodichloromethane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Dibromomethane	5,000	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Toluene	1,000	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,1,2-Trichloroethane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1.6
Tetrachloroethene	5	**21**	**21**	**17**	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	4.6 J	1.9 J	1.5	1 U	2.9
Dibromochloromethane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Chlorobenzene	100	5.5	5.3	4.9	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1.6	1 J	1 UJ	1 U	1 U	0.94 J
1,1,1,2-Tetrachloroethane	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Ethylbenzene	700	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Styrene	100	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Bromoform	5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	**2.7 J**	0.73 J	0.58 J	1 U	**4.8**
Bromobenzene	1,000	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,3-Dichlorobenzene	600	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	0.45 J	1 UJ	1 UJ	1 U	1 U	1 U
1,4-Dichlorobenzene	5	0.31 J	0.32 J	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	0.69 J	1 UJ	1 UJ	1 U	1 U	1 U
1,2-Dichlorobenzene	600	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane (DBCP)	100	2 U	2 U	5.0 U	2 UJ	2 U	2 UJ	2 U	WD	2 UJ	2 U	2 UJ	2 UJ	2 U	2 U	2 U
1,2,4-Trichlorobenzene	70	1.4	1.5	1.3 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Hexachlorobutadiene	0.6	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Naphthalene	20	0.29 UJ	0.63 UJ	5.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2,3-Trichlorobenzene	-	1.1	1.1 B	1.1 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	0.32 J	1 UJ	1 U	1 U	1 U
1,3-Dichloropropane	0.5	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2-Dibromoethane (EDB)		2 U	2 U	2.0 U	2 UJ	2 U	1 UJ	2 U	WD	2 UJ	2 U	2 UJ	2 UJ	2 U	2 U	2 U
Isopropylbenzene	10,000	0.41 J	0.42 J	0.57 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2,3-Trichloropropane	1,000	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
n-Propylbenzene	-	0.17 J	0.18 J	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
2-Chlorotoluene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
4-Chlorotoluene		1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,3,5-Trimethylbenzene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
tert-Butylbenzene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
1,2,4-Trimethylbenzene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
sec-Butylbenzene	-	0.93 J	0.92 J	1.1 J	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
p-Isopropyltoluene	-	1 U	1 U	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
n-Butylbenzene	-	0.45 J	0.48 J	2.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
cis-1,3-Dichloropropene	(0.5)	1 U	1 U	1.0 U	1 UJ	1 U	1 UJ	1 U	WD	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

U = Compound not detected above laboratory's Practical Quantitation Limit (PQL)

UJ = Compound tentatively not detected at reported concentration

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = The associated method blank had compound detected at a concentration below the PQL

WD = Well Previously Decommissioned

* Regulatory standard is for total 1,3-dichloropropene and total xylenes

Table 3
Groundwater VOC Analytical Results - October 12-13, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 8 of 10)

PARAMETERS	Well No.	MCP GW-1	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
VOLATILES (SW846-8260B)																	
Dichlorodifluoromethane		10,000	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane		1,000	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride		2	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane		2	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane		1,000	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane		10,000	1.0 U	1.0 U	2.0 U	1.4	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.8	0.60 J	0.46 J	1.0 U	1.0 U
Acrolein		100	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	WD	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Freon TF		-	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene		1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone		3,000	5.7 UJ	6.2 UJ	10 U	3.8 UJ	5.0 U	5.0 U	5.0 U	WD	5.0 U	20 UJ	5.0 U	5.0 U	4.9 UJ	4.3 UJ	13 UJ
Methyl Iodide (Iodomethane)		1,000	1.0 U	0.24 J	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Allyl Chloride		5,000	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride		5	0.32 UJ	0.32 UJ	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acrylonitrile		1,000	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene		100	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2
1,2-Dichloroethene (total)		70	4.8	5.2	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0	1.0 U	1.0 U	1.0 U	7.0
Methyl-t-Butyl Ether (MTBE)		700	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane		70	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate		10,000	0.34 J	0.34 J	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroprene		100	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		70	4.4	4.7	4.8	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	0.95 J	1.0 U	1.0 U	1.0 U	5.6
2-Butanone		400	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	WD	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Propionitrile		500	4.0 U	4.0 U	NA	4.0 U	4.0 U	4.0 U	4.0 U	WD	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Methacrylonitrile		5,000	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane		-	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran		5,000	14.0 U	14.0 U	10 U	14.0 U	14.0 U	14.0 U	14.0 U	WD	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
Chloroform		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane		200	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isobutyl Alcohol		10	50 U	50 U	NA	50 U	50 U	50 U	50 U	WD	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene		5	0.60 J	0.58 J	0.52 J	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	0.35 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.86 J
Trichloroethene		5	1.3	1.4	1.2 J	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	**9.3**
1,2-Dichloropropane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Methacrylate		5	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane		5,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane		1,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	WD	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Bromodichloromethane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethyl Vinyl Ether		5,000	1.0 U R	1.0 U R	NA	1.0 U R	1.0 U R	1.0 U R	1.0 U R	WD	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R
cis-1,3-Dichloropropene		0.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone		400	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	WD	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene		0.5 *	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Methacrylate		5,000	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.94 J
Tetrachloroethene		5	**13**	**13**	**19**	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	4.0	0.86 J	1.2	1.0 U	0.62 J
2-hexanone		1,000	5.0 UJ	5.0 UJ	10 U	5.0 UJ	5.0 U	5.0 U	5.0 UJ	WD	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U
Dibromochloromethane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)		0.02	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene		100	8.5	8.4	8.7	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	0.72 J	1.0 U	1.0 U	1.0 U	1.0 U	1.4
1,1,1,2-Tetrachloroethane		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene		700	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (m,p,)		6,000 *	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)		6,000 *	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (o)		6,000 *	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene		100	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform		5	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene		10,000	0.68 J	0.72 J	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,4-Dichloro-2-butene		100	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane		2	0.95 J	0.95 J	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	**4.4**	0.58 J	0.95 J	1.0 U	1.8
1,2,3-Trichloropropane		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,4-Dichloro-2-butene		100	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene		600	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	0.35 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene		5	0.39 J	0.42 J	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	0.54 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene		600	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane		100	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	0.95 J	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene		70	1.3	1.3	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene		0.6	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Napthalene		20	1.0 U	0.24 J	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane		5 *	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene		0.5 *	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane		5,000	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
n-Propylbenzene		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene		1,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene		100	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
tert-Butylbenzene		-	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene		10,000	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
sec-Butylbenzene		-	0.86 J	0.92 J	0.82 J	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Isopropyltoluene		-	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
n-Butylbenzene		-	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene		100 *	1.2	1.2	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	0.72 J	1.0 U	1.0 U	1.0 U	1.0 U

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

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U = Compound was not detected above laboratory's Practical Quantitation Limit (PQL)

UJ = Compound tentatively not detected at reported concentration or reporting limit estimated due to low spike recovery

UR = Non-detect result was rejected based on the inability to recover the compound (0% recovery) from the matrix spike (MS) and MSD. The laboratory attributes this anomaly to the acid preservation of the sample.

J = Estimated value less than PQL or based on data evaluation of laboratory results

WD = Well Previously Decommissioned

NA = Not Analyzed

* "Exceptional" Regulatory standards:

TOTAL 1,3-dichloropropene

TOTAL xylenes

2,2-dichloropropane: GW-1 std is for dichloropropane.

1,1-dichloropropene: GW-1 std is for dichloropropene

n-propylbenzene: GW-1 std is for propylbenzene

1,2,3-Trichlorobenzene: GW-1 std is for 1,2,4-Trichlorobenzene

Table 3
Groundwater VOC Analytical Results May 31-June 2, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 9 of 10)

PARAMETERS	Well No.	OHM-A7-5	OHM-A7-5DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP GW-1 Standard * µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
gamma-BHC (Lindane)**														
Dichlorodifluoromethane	10,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	10,000	1.0 U	1.0 U	0.78 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.98 J	0.36 J	0.38 J	1.0 U	1.0 U
Acrolein	100	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Freon TF	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	3,000	4.9 UJ	4.9 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	6.4 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl Iodide (Iodomethane)	1,000	1.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Allyl Chloride	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	0.44 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acrylonitrile	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J
Methyl-t-Butyl Ether (MTBE)	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	70	4.5	4.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.70 J	1.0 U	1.0 U	1.0 U	3.8
1,1-Dichloroethane	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroprene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	10,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	70	4.3	4.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.69 J	1.0 U	1.0 U	1.0 U	3.3
2-Butanone	400	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Propionitrile	500	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Bromochloromethane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methacrylonitrile	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	5,000	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U
Chloroform	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 UJ	1.0 U	1.0 U	1.0 U	0.40 UJ
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene	0.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	5	0.23 J	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J
Isobutyl Alcohol	10	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Trichloroethene	5	0.57 J	0.58 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 J	1.0 U	1.0 U	1.0 U	3.8
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Methacrylate	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	1,000	50 U	50 U	200	50 UJ	50 UJ	50 U	50 U	50 U	50 UJ	50 UJ	50 U	50 U	50 U
Bromodichloromethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethyl Vinyl Ether	5,000	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R	1.0 U R
cis-1,3-Dichloropropene	0.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone	400	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	0.5 *	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Methacrylate	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	**8.7**	**9.0**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.1	0.54 J	0.90 J	1.0 U	1.5
1,3-Dichloropropane	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-hexanone	1,000	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	0.02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	100	4.2	4.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (m,p,)	6,000 *	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)	6,000 *	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (o)	6,000 *	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene	10,000	0.29 J	0.27 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,4-Dichloro-2-butene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	2	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	**2.0**	1.0 U	0.28 J	1.0 U	**2.0**
n-Propylbenzene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	1,000	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,4-Dichloro-2-butene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	1,000	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
tert-Butylbenzene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	10,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
sec-Butylbenzene	-	0.37 J	0.37 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Isopropyltoluene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	5	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.35 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
n-Butylbenzene	-	1.0 U	1.0 U	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	1.5	1.6	0.49 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	0.6	0.27 UJ	1.0 U	0.83 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	20	1.0 UJ	0.24 J	0.78 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	--	1.4	1.4	0.73 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	1.0 U	1.0 U	1.0 U

* MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]
Shaded area with bold numbers indicates MCP GW-1(or GW-3) exceedance.
U = Compound was not detected above laboratory's Practical Quantitation Limit (PQL)
UJ = Compound tentatively not detected at reported concentration or reporting limit estimated due to low spike recovery
UR = Non-detect result was rejected based on the inability to recover the compound (0% recovery) from the matrix spike (MS) and MSD.
The laboratory attributes this anomaly to the acid preservation of the sample.
J = Estimated value less than PQL or based on data evaluation of laboratory results
NA = Not Analyzed
** Regulatory standards are for total 1,3-dichloropropene and total xylenes

Table 3
Groundwater VOC Analytical Results - September 13-14, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 10 of 10)

PARAMETERS	Well No. / MCP GW-1 Standard * ug/L	OHM-A7-8 ug/L	OHM-A7-8DUP ug/L	OHM-A7-9 ug/L	OHM-A7-11 ug/L	OHM-A7-12 ug/L	OHM-A7-46 ug/L	OHM-A7-51 ug/L	JO-A07-M63 ug/L
VOLATILES (SW846-8260B)									
1,1,1,2-Tetrachloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	2	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	**4.1**
1,1,2-Trichloro-1,2,2-trifluoroethane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0 U**	**1.0 U**
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	-	1.9	2.0	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	1,000	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	1.4	1.4	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	100	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (EDB)	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	600	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	0.2 J	1.0 U	1.0 U
1,3-Dichloropropane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	5	0.3 J	0.3 J	1.0 U	1.0 U	1.0 UJ	0.3 J	1.0 U	1.0 U
1-Chlorohexane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	-	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
2-Chlorotoluene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	-	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chlorotoluene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Isopropyltoluene	-	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	-	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Acetone	3,000	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Benzene	5	0.4 J	0.5 J	1.0 U	1.0 U	1.0 U	0.2 J	1.0 U	0.4 J
Bromobenzene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	100	10.8	11.2	1.0 U	1.0 U	1.0 U	0.9 J	1.0 U	4.2
Chloroethane	1,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6 UJ
Chloromethane	1,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	70	6.8	7.1	1.0 U	1.0 U	1.0 U	1.0 U	0.8 J	13.5
cis-1,3-Dichloropropene	0.5 **	**0.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	-	0.4 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (Freon 12)	10,000	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	0.6	0.6 U	0.6 U	0.6 UJ	0.6 U	0.6 UJ	0.6 U	0.6 U	0.6 U
Isopropylbenzene	10,000	0.9 J	1.0	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Methyl Acetate	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert-Butyl Ether	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	-	0.7 J	0.7 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	0.4 UJ	0.4 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	20	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
n-Butylbenzene	-	0.7 J	0.7 J	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
n-Propylbenzene	-	0.2 J	0.2 J	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
sec-Butylbenzene	-	1.4	1.5	0.3 J	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
tert-Butylbenzene	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	**25.4**	**27.4**	1.0 U	1.0 U	1.0 U	1.0 U	3.8	**11.6**
Tetrahydrofuran	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.7
trans-1,3-Dichloropropene	0.5 **	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	5	1.1	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.3	**25.4**
Trichlorofluoromethane (Freon 11)	10,000	2.0 U	2.0 U	0.5 J+	2.0 U	2.0 U	2.0 U	1.0 J	1.0 J
Vinyl Acetate	-	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Vinyl Chloride (chloroethene)	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	6,000 **	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m-Xylene & p-Xylene	6,000 **	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U

* MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]

** Regulatory standard is for total 1,3-dichloropropene and total xylenes

Shaded area with bold numbers indicates MCP GW-1 (or GW-3) exceedance. - **25**

U = Compound not detected above laboratory's Practical Quantitation Limit (PQL)

UJ = Compound tentatively not detected at reported concentration

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = The associated method blank had compound detected at a concentration below the PQL

Table 4
Groundwater Pesticide & Metals Analytical Results - May 9-10, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 1 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
PESTICIDES															
METHOD SW846 8081A															
alpha-BHC	500	0.044 J	<0.5	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.06	0.078	0.26	0.056	<0.050	0.25
gamma-BHC (Lindane)	0.2	**7**	**6.6**	<0.050	<0.050	<0.050	<0.050	NA	<0.050	.031 J	0.078	<0.050	0.16	<0.050	**0.31**
Heptachlor	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Aldrin	0.5	<.5	<.5	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050
beta-BHC	100	<.5	<.5	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.050	<0.50	<0.050	<0.050	<0.050	<0.050
delta-BHC	100	<.5	<.5	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.050	<0.50	<0.050	<0.050	<0.050	<0.050
Heptachlor epoxide	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Endosulfan I	0.1	<0.05	<0.05	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
gamma-Chlordane	2 *	<0.5	<0.05	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
alpha-Chlordane	2 *	<0.5	<0.05	<0.050	<0.050	<0.050	<0.050	NA	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4,4'-DDE	0.1	<1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dieldrin	0.1	<1	<.0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	**0.86 J**	**0.63 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**
Endosulfan II	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.3	0.19 J	<0.1	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J
Endrin aldehyde	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Endosulfan sulfate	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone															
Toxaphene	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TAL METALS (6010); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	190 B	150 B	86 B	110 B	99 B	1700	330	220	< 200	59 B	140 B	230	400	710
Calcium	-	33,300	32,300	8,400	10,000	21,200	9,800	3400 B	4,100 B	6,500 B	12,800	13,900	6,700	8,500	12,100
Potassium	-	4,200 B	4000 B	2000 B	2,900 B	4,200	2000 B	5,000	2,000 B	3,900 B	1,500 B	2,000 B	960 B	2,300 B	4,000 B
Magnesium	-	8,900	8,700	1,800 B	1900 B	5,100	2000 B	740 B	620 B	2200 B	3,400 B	4,800 B	1,800 B	2,100 B	4,500 B
Sodium	-	8,500	8,300	5,600	5,700	10,100 J	9,200	7,600	1,600 B	7,800	5,800	7,100	5,200	5,500	17,000
Silver	7	1.4 B	<5	<5	<5	<5	<5	<5	< 5	< 5	< 5	< 5	<5	<5	5
Arsenic	50	10	6.5 B	<10	<10	<10	<10	<10	<10	< 10	< 10	< 10	<10	<10	< 10
Barium	2,000	10	58	4.1 B	7.6 B	3.1 B	11	3.2 B	11	< 11	4.9 B	6.9 B	5 B	7.1 B	11
Beryllium	4	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	<5	< 5	< 5	< 5	<5	<5	< 5
Cadmium	5	<5	<5	<5	<5	<5	<5	<5	<5	< 5	< 5	< 5	<5	<5	3.2 B
Cobalt	5,000	150	160	40 B	3.7 B	26 B	14 B	9.1 B	7.9 B	16 B	13 B	11 B	20 B	22 B	10 B
Chromium (total)	100	6.9	4.2 B	5	1.1 B	5.4 B	42	2.5 B	1.9 B	3.7 B	1.6 B	4.2 B	4.3 B	12	3.2 B
Copper	10,000	77 J	45 J	<25	<25	<25	4.2 B	<25	31 B	3 B	< 250	< 25	<25	<25	< 25
Iron	-	18,500	15,000	160	46 B	240	2500	350	95 B	1,200	62 B	360	360	510	10,500
Manganese	-	14,800	14,900	110	500	23 B	24	13 B	14 B	1,800	11 B	370	13 B	14 B	1,500
Molybdenum		2.4	<40	<40	<40	4 B	8.4 B	<40	<40	< 40	< 40	1.6 B	<40	2.8 B	1.8 B
Nickel	80	42	41	4.4 B	2.5 B	4.3 B	43	2.3 B	7.3 B	8.2 B	2.3 B	5.8 B	4.1 B	14 B	4 B
Lead	15	10	8.6	<5	<5	<5	<5	<5	< 5	5 U	< 5	< 5	<5	<5	< 5
Antimony	6	**<10**	**<10**	**<10**	**<10**	**<10**	4.3 B	**<10**	**<10**	3 B	< 10	< 10	3.1 B	**<10**	2.7 B
Selenium	50	<5	<5	<5	<5	<5	<5	<5	<5	< 5	< 5	< 5	<5	<5	< 5
Thallium	2	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	<10	< 10	< 10	< 10	<10	<10	< 10
Vanadium	50	1.1 B	<50	<50	<50	<50	4.4 B	<50	<50	< 50	< 5	< 50	1 B	1.1 B	< 50
Zinc	900	7.8B	20 B	5.5 B	<20	<20	6.7 B	3.7 B	8.4 B	5.5 B	< 10	4 B	3.8 B	7.9 B	43
Mercury (SW 7470)	1	0.9 J	0.55 J	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	< 0.2	< 0.2	< 0.2	<0.2	<0.2	< 0.2

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = Analyte is also present in equipment blank sample at a reportable level.

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

NA = Not Analyzed

* Regulatory standard is for total Chlordane

E = Estimated values greater than the instrument calibration range

Table 4
Groundwater Pesticides & Metals Analytical Results - October 22-24, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 2 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
PESTICIDES															
METHOD SW846 8081A															
alpha-BHC	500	0.051 J	0.069 J	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	2 Q	<0.050
gamma-BHC (Lindane)	0.2	**4.3 Q**	**4.9 Q**	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	**0.35**	<0.050	No sample	<0.050	**0.31**
Heptachlor	0.4	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
Aldrin	0.5	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
beta-BHC	100	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
delta-BHC	100	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
Heptachlor epoxide	0.2	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
Endosulfan I	0.1	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
gamma-Chlordane	2 *	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
alpha-Chlordane	2 *	<.5	<.5	<0.050	<0.050	<0.050	<0.050	No sample	<0.050	No sample	<0.050	<0.050	No sample	<0.050	<0.050
4,4'-DDE	0.1	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Dieldrin	0.1	<.5	<.5	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Endrin	2	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
4,4'-DDD	0.1	**.25 J**	**.25 J**	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Endosulfan II	-	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
4,4'-DDT	0.3	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Endrin aldehyde	100	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Methoxychlor	2	<.5	<.5	<0.50	<0.50	<0.50	<0.50	No sample	<0.50	No sample	<0.50	<0.50	No sample	<0.50	<0.50
Endosulfan sulfate	0.1	<1	<1	<0.10	<0.10	<0.10	<0.10	No sample	<0.10	No sample	<0.10	<0.10	No sample	<0.10	<0.10
Endrin ketone				<0.10				No sample		No sample			No sample		
Toxaphene	100	<20	<20	<2.0	<2.0	<2.0	<2.0	No sample	<2.0	No sample	<2.0	<2.0	No sample	<2.0	<2.0
TAL METALS (6010); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	<200	<200	<200	85 B,J	<200	96 B,J	No sample	80 B	No sample	550	<200	No sample	96 B,J	260
Calcium	-	34,400	34,700	19,600	11,900	19,000	9,300	No sample	4,900 B	No sample	13,900	12,100	No sample	11,800	12,500
Potassium	-	4,300 B	4,400 B	4,700 B	3,100 B	4,200 B	2,100 B	No sample	1,800 B	No sample	2,400 B	2,700 B	No sample	3,300 B	4,300 B
Magnesium	-	8,600	8,700	4,400 B	2,100 B	4,800 B	1,400 B	No sample	1,300 B	No sample	4,800 B	4,700 B	No sample	2,700 B	4,600 B
Sodium	-	9,600 J	9,700 J	8,500 B	6,300 J	10,100 J	9,900 B	No sample	6,300 J	No sample	8,100 J	7,500 B	No sample	7,500 B	12,200 J
Silver	7	<5	<5	<5	<5	<5	<5	No sample	<5	No sample	<5	<5	No sample	<5	<5
Arsenic	50	15	18	9.6 B	<10	<10	<10	No sample	<10	No sample	<10	<10	No sample	<10	<10
Barium	2,000	48	50	<10	4.9 B	2.0 B	3.7 B	No sample	6.6 B	No sample	8.8 B	8.8 B	No sample	6.8 B	8.6 B
Beryllium	4	<5	<5	<5	<5	<5	<5	No sample	<5	No sample	<5	<5	No sample	<5	<5
Cadmium	5	<5	<5	<5	<5	<5	<5	No sample	<5	No sample	<5	<5	No sample	<5	2.0 B
Cobalt	5,000	54	58	12 B	2.2 B	<50	2.6 B	No sample	3.6 B	No sample	2.5 B	<50	No sample	2.6 B	9.2 B
Chromium	100	2.9 B,J	2.9 B,J	1.3 B	1.6 B	5.0	6.6	No sample	2.6 B	No sample	4.5 B	1.3 B	No sample	3.1 B	5.6
Copper	10,000	8 B	8 B	<25	<25	<25	<25	No sample	<25	No sample	<25	<25	No sample	<25	<25
Iron	-	28,600 J	28.7 J	2,100	150	290	130	No sample	21 B	No sample	1,200	15 B	No sample	270	7,600
Manganese	-	8,000	8,100	1,200	230	23	4.3 B	No sample	11 B	No sample	0.43	90	No sample	180	1,200
Molybdenum		2.8 B	3 B	<40	No result	No result	No result	No sample	<40	No sample	2.2 B	<40	No sample	No result	No result
Nickel	80	23 B	25 B	2.5 B	3.0 B	<40	4.8 B	No sample	10 B	No sample	5.3 B	<40	No sample	6.3 B	4.5 B
Lead	15	4.4 B	4.8 B	<5	<5	<5	<5	No sample	<5	No sample	<5	<5	No sample	<5	<5
Antimony	6	4.7 B	3.8 B	3.8 B	<10	3.8 B	3.6 B	No sample	<10	No sample	<10	2.7 B	No sample	<10	<10
Selenium	50	<5	3.9 B	<5	6.4	<5	3.9 B	No sample	<5	No sample	<5	<5	No sample	4.2 B	<5
Thallium	2	<10	**4.1 B**	**3.3 B**	**4.0 B**	**4.3 B**	<10	No sample	<10	No sample	**3.3 B**	<10	No sample	**3.3 B**	<10
Vanadium	50	<50	<50	<50	<50	<50	<50	No sample	<50	No sample	1.6 B	<50	No sample	<10	<50
Zinc	900	<20	<20	6.6 B,J	<20	<20	<20	No sample	8.8 B,J	No sample	4 B,J	<20	No sample	4.0 B,J	11 B,J
Mercury (SW 7470)	1	0.15 B	0.12 B	<0.2	0.13 B	0.055 B	0.20	No sample	0.058 B	No sample	0.056 B	<0.2	No sample	<0.2	0.074 B

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = Analyte is also present in equipment blank sample at a reportable level.

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

NA = Not Analyzed

25

*** Regulatory standard is for total Chlordane**

Metals specific qualifiers:

B (metals) = Estimated value; result is less than the reporting limit

J (metals) = Associated method blank showed reportable concentration of this analyte.

Table 4
Groundwater Pesticides & Metals Analytical Results - April 23-25, 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 3 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
PESTICIDES															
METHOD SW846 8081A		HOLDING	HOLDING					HOLDING	HOLDING	HOLDING					
alpha-BHC	500	0.048 J	0.051	<0.050	<0.050	<0.050	<0.050	0.011 J	<0.050	0.025 J	<0.050	<0.050	<0.050	<0.050	<0.050
gamma-BHC (Lindane)	0.2	**1.4**	**1.4**	<0.050	<0.050	< 0.050	< 0.050	0.010 J	< 0.050	0.027 J	0.13	0.054	0.052	< 0.050	**0.25**
Heptachlor	0.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Aldrin	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
beta-BHC	100	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
delta-BHC	100	0.037 J	0.04 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Heptachlor epoxide	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Endosulfan I	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
gamma-Chlordane	2 *	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
alpha-Chlordane	2 *	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4,4'-DDE	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dieldrin	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDD	0.1	**0.13 J**	**0.16 J**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan II	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	0.3	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin aldehyde	100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Methoxychlor	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Endosulfan sulfate	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin ketone		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toxaphene	100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TAL METALS (6010); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	120 B,J,M	110 B,J,M	110 B,J,M	120 B,J,M	87 B,J,M	400 J	200 J,M	660 J	100 B,J,M	81 B,J,M	99 B,J,M	210 J,M	94 B,J,M	1,400 J
Calcium	-	18.6 J,M	18,500 J	12,500 J	12,400 J	20,600 B,J	8,400 J	4,900 B,J	6,200 J	6,900 J	11,300 J	11,300 J	5,700 J	9,300 B	12,900 J
Potassium	-	3,200 B,K	3,200 B,K	2,600 B,K	3,400 B,K	4,600 B,K	1,600 B,K	620 B,K	2,200 B,K	4,600 B,K	1,800 B,K	1,500 B,K	1,000 B,K	2,600 B,K	3,700 B,K
Magnesium	-	4.6 B	4,700 B	2,400 B	2,500 B	4,800 B	1,500 B	1,100 B	1,200 B	2,100 B	3,700 B	2,900 B	1,600 B	1,900 B	4,800 B
Sodium	-	8.3 B,M	8,100 J	7,600 J	6,500 J	10,500 J	8,800 J	6,500 J	2,700 B,J	7,800 J	6,400 J	5,500 J	5,400 J	6,800 B	9,900 J
Silver	7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Arsenic	50	8.7 B	8.5 B	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5.9 B
Barium	2,000	19	19	4.2 B	7.4 B	2.4 B	4.8 B	2.4 B	14	15	4.9 B	4.6 B	4.3 B	4 B	12
Beryllium	4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Cadmium	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Cobalt	5,000	57	62	1.8 B	3.1 B	< 50	< 50	< 50	13 B	22 B	1.2 B	< 50	< 50	< 50	15 B
Chromium	100	2.3 B	2.2 B	1.3 B	1.2 B	3.7 B	7.7	< 5	1.3 B	23	1.2 B	1.6 B	1.5 B	1.2 B	3.4 B
Copper	10,000	12 B,J	15 B,J	9.8 B,J	13 B,J	8.5 B,J	5.4 B,J,M	6.7 B,J	12 B,J	13 B,J	8.5 B,J	8 B,J	3.2 B,J,M	4.5 B,J,M	9.9 B,J,M
Iron	-	12,500 J	12,300 J	150 J,M	23 B,J,M	90 B,J,M	470 J	99 B,J	18 B,J,M	260 J,M	54 B,J,M	19 B,J,M	280 J	32 B,J,M	14,500 J
Manganese	-	3,800	3,800	300	180	11 B	88 B	14 B	39	930	130	8.5 B	9.9 B	7.4 B	1,200
Molybdenum		< 40	< 40	< 40	< 40	2.6 B	< 40	< 40	< 40	4.2 B	< 40	< 40	< 40	< 40	2.2 B
Nickel	80	17 B	19 B	< 40	3.0 B	1.9 B	5.5 B	< 40	30 B	32 B	2.7 B	1.8 B	< 40	< 40	3 B
Lead	15	5.2 D	7.4 D	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Antimony	6	< 10	< 10	< 10	< 10	< 10	2.5 B	< 10	< 10	< 10	< 10	< 10	2.6 B	< 10	< 10
Selenium	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	4.1 B	< 5
Thallium	2	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**3.1 B**	< 10	**5 B**	< 10	< 10
Vanadium	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	1.8 B
Zinc	900	12 B,J	11 B,J	< 20	3.7 B,J,M	< 20	< 20	< 20	27 J	6.3 B,J,M	< 20	< 20	< 20	< 20	7.9 B,J,M
Mercury (SW 7470)	1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

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J = Estimated value less than PQL or based on data evaluation of laboratory results
B = Analyte is also present in equipment blank sample at a reportable level.
G = Elevated reporting limit. The reporting limit is elevated due to matrix interference
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
NT = Well not sampled.
NA = Not Analyzed
HOLDING= sample extracted beyond holding time from collection to extraction.
M= Sample conc within 5 times that of the method blank.
D= Greater than 20% RPD between field duplicates.
K= MS/MSD and LCS/LCSD recoveries outside limits.

* Regulatory standard is for total Chlordane

Metals specific qualifiers:
B (metals) = Estimated value; result is less than the reporting limit
J (metals) = Associated method blank showed reportable concentration of this analyte.

Table 4
Groundwater Pesticides & Metals Analytical Results - October 15,17, 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 4 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
PESTICIDES															
METHOD SW846 8081A															
alpha-BHC	500	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
gamma-BHC (Lindane)	0.2	**2.6**	**2.4**	<0.050	<0.050	< 0.050	< 0.050	WD	< 0.050	NT	0.19	0.097	NT	< 0.050	**0.24**
Heptachlor	0.4	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
Aldrin	0.5	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
beta-BHC	100	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
delta-BHC	100	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
Heptachlor epoxide	0.2	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
Endosulfan I	0.1	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
gamma-Chlordane	2 *	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
alpha-Chlordane	2 *	< 1	< 1	<0.050	<0.050	<0.050	<0.050	WD	<0.050	NT	<0.050	<0.050	NT	<0.050	<0.050
4,4'-DDE	0.1	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Dieldrin	0.1	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Endrin	2	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
4,4'-DDD	0.1	**< 2**	**< 2**	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Endosulfan II	-	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
4,4'-DDT	0.3	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Endrin aldehyde	100	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Methoxychlor	2	< 10	< 10	<0.50	<0.50	<0.50	<0.50	WD	<0.50	NT	<0.50	<0.50	NT	<0.50	<0.50
Endosulfan sulfate	0.1	< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Endrin ketone		< 2	< 2	<0.10	<0.10	<0.10	<0.10	WD	<0.10	NT	<0.10	<0.10	NT	<0.10	<0.10
Toxaphene	100	< 40	< 40	<2.0	<2.0	<2.0	<2.0	WD	<2.0	NT	<2.0	<2.0	NT	<2.0	<2.0
TAL METALS (6020); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	140 J+	130 J+	31 J+	35 J+	< 50	26 J	WD	47 J+	NT	< 50	7.4 J+	NT	470 J+	2400 J+
Calcium	-	23,000	21,700	20,400	13,200	17,700	9,100	WD	5,400	NT	19,100	9,300	NT	20,400	10,900
Potassium	-	3,700	3,500	4,900	3,100	4,000	1,900	WD	1,800	NT	2,700	1,600	NT	3,800	4,000
Magnesium	-	6,000	5,600	4,200	2,100	4,100	1,400	WD	1,400	NT	6,500	2,300	NT	4,900	4,800
Sodium	-	9,200	8,200	8,300	5,900	8,900	8,800	WD	6,500	NT	8,800	5,600	NT	12,400	11,800
Silver	7	0.19 J	0.18 B	<1.0	< 1	< 1	< 1.0	WD	< 1.0	NT	< 1.0	<1.0	NT	0.44 J	0.05
Arsenic	50	24	22	<2.0	<2	< 2.0	<2.0	WD	< 2.0	NT	< 2.0	< 2.0	NT	1.2 J	6.2
Barium	2,000	31	29	11	5.1	< 2.9	3.6	WD	5.4	NT	7.2	3.7	NT	17	19
Beryllium	4	< 1.0	< 1.0	< 1.0	< 1	< 1.0	<1.0	WD	0.081 J	NT	< 1.0	<1.0	NT	<1.0	0.11 J
Cadmium	5	0.15 J	0.14 J	0.19 J	0.082 J	< 1.0	< 1.0	WD	< 1.0	NT	0.099 J	< 1.0	NT	<1.0	1.2
Cobalt	5,000	72	70	15	2.2	0.19 J	0.76 J	WD	4.3	NT	3.8	1.3	NT	80	20
Chromium	100	38 J+	39 J+	3 UN	2.1 UN	2.3 UN	2.3 UN	WD	< 2.1	NT	2.8 UN	2.3 UN	NT	**180**	7.6 UN
Copper	10,000	7.3 UN	6.8 UN	< 2	< 2	< 2	< 2	WD	< 2	NT	< 2	< 2	NT	6.1 UN	5.1 UN
Iron	-	14,600	14,000	3,200	240	280	25 J	WD	18 J	NT	380	40 J	NT	1,500	29,300
Manganese	-	4,800	4,600	1,400	160	77	1,400	WD	8.9 J+	NT	320	7.9 J+	NT	320	1,900 J
Molybdenum		6	6	< 1.0	< 1	2	< 1.0	WD	< 1.0	NT	1.6	< 1.0	NT	31	4
Nickel	80	50	52	3.7 J+	2.9 J+	< 2	2.8 J+	WD	9.2	NT	7	< 2.0	NT	**170**	6.7
Lead	15	7.9	7	<1.0	0.068 J	< 1.0	< 1.0	WD	< 1.0	NT	0.074 J	<1.0	NT	3	2
Antimony	6	0.49 B	0.42 J	< 2.0	0.069 J	<2.0	< 2.0	WD	< 2.0	NT	0.037 J	< 2.0	NT	0.38 J	0.13 S
Selenium	50	< 2.0	< 2.0	< 2.0	< 2.0	<2.0	< 2.0	WD	< 2.0	NT	< 2.0	< 2.0	NT	<2.0	<2
Thallium	2	< 1.0	<1.0	< 1.0	<1.0	<1.0	< 1.0	WD	< 1.0	NT	< 1.0	< 1.0	NT	<1.0	< 1.0
Vanadium	50	< 10	< 10	< 10	<10	<10	< 10	WD	< 10	NT	< 10	< 10	NT	< 10	3.7 S
Zinc	900	8.9 UN	8.2 UN	6.6 UN	< 5.0	< 5.0	< 5.0	WD	6.7 UN	NT	< 5.0	< 5.0	NT	< 5.0	22 J+
Mercury (SW 7470)	1	0.091 UN	0.084 UN	< 0.2	0.12 UN	< 0.2	< 0.2	WD	< 0.2	NT	< 0.2	< 0.2	NT	< 0.2	< 0.2

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

NT = Well not sampled.

UN = Analyte not reliably detected because of blank contamination.

WD = Well Previously Decommissioned

J+ = Concentration biased high due to blank contamination

*** Regulatory standard is for total Chlordane**

Sample-specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

OHM-A7-46 and OHM-A7-61 were not sampled in October 2002 due to low groundwater elevations.

Table 4
Groundwater Pesticides & Metals Analytical Results - April 22-24, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 5 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M62DUP-TAL	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	ug/L															
PESTICIDES																
METHOD SW846 8081A																
alpha-BHC	500	0.049 J	0.051	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	0.0097 J	<0.050	<0.050	<0.050	NA	0.010 J
gamma-BHC (Lindane)	0.2	**2.6**	**2.3**	<0.050	<0.050	< 0.050	< 0.050	WD	< 0.050	0.018 J	**0.21**	0.045	0.022 J	<0.050	NA	0.12
Heptachlor	0.4	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	0.025 J	<0.050	<0.050	<0.050	<0.050	NA	<0.050
Aldrin	0.5	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050
beta-BHC	100	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	0.016 J
delta-BHC	100	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	0.0067 J
Heptachlor epoxide	0.2	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050
Endosulfan I	0.1	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050
gamma-Chlordane	2 *	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050
alpha-Chlordane	2 *	< 0.050	<0.050	<0.050	<0.050	<0.050	<0.050	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NA	<0.050
4,4'-DDE	0.1	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Dieldrin	0.1	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Endrin	2	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
4,4'-DDD	0.1	**0.21**	**0.20**	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Endosulfan II	-	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
4,4'-DDT	0.3	0.16	0.18	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Endrin aldehyde	100	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Methoxychlor	2	< 0.50	<0.50	<0.50	<0.50	<0.50	<0.50	WD	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50
Endosulfan sulfate	0.1	< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Endrin ketone		< 0.10	<0.10	<0.10	<0.10	<0.10	<0.10	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA	<0.10
Toxaphene	100	< 2.0	<2.0	<2.0	<2.0	<2.0	<2.0	WD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0
TAL METALS (6020); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	12 B,M	15 B	26 B	47 B	< 50	17 B	WD	23 B	69	2.3 B,M	18 B	46 B,J	23 B	23 B	1,700 J
Calcium	-	27,000	26,400	6,000	8,200	19,700	8,300	WD	3,500	7,000	15,000	13,600	5,500	5,300	5,500	7,600
Potassium	-	4,300	4,200	1,500	2,600	4,400	1,500	WD	1,500	4,300	1,900	1,700	650	1,700	1,800	3,200
Magnesium	-	7,200	7,100	1,300	1,600	4,900	1,300	WD	480	2,400	5,400	3,900	1,600	1,200	1,200	2,900
Sodium	-	8,900	8,800	3,600	4,400	11,000	8,600	WD	1,400	9,200	8,100	6,200	4,000	2,600	2,700	14,000
Silver	7	0.14 B	0.14 B	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	0.27 B	< 1.0	< 1.0	< 1.0	0.14 B	0.18 B	< 1.0
Arsenic	50	1.8 B	1.5 B	< 2.0	< 2.0	1.0 B	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	1.5 B
Barium	2,000	75	74	< 2.2	5.5	2.5	< 2.8	WD	4.4	12	5.3	5.2	3.5	2.7	2.7	12
Beryllium	4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	5	0.65 B	0.62 B	< 1.0	0.12 B	< 1.0	< 1.0	WD	< 1.0	0.20 B	0.16 B	< 1.0	< 1.0	< 1.0	< 1.0	0.95 B
Cobalt	5,000	150	150	0.24 B	2.6	0.14 B	0.17 B	WD	< 1.0	35	1.8	0.59 B	2.1	23	25	6
Chromium	100	< 2.0	< 2.0	2.5 J,M	2.6 J,M	3.9 J,M	3.4 J,M	WD	2.4 J,M	160 J	2.3 J,M	4.0 J,M	< 2	76 J	77 J	18
Copper	10,000	12 J	11 J	1.8 B,J,M	2.2 J,M	1.4 B,J,M	1.0 B,J,M	WD	1.4 B,J,M	8.8 J	0.92 B,J,M	1.2 B,J,M	0.36 B,M	3.7 M	4.1 M	5.3
Iron	-	38,900	37,500	29 B	< 50	59	< 50	WD	17 B	3,700	< 50	< 50	250	480	470	4,500
Manganese	-	10,600 B	10,400 B	27	280	16	< 1.0	WD	3.7	1,100	340	13	55	9.3	9.6	530
Molybdenum		< 1.0	< 1.0	< 1.0	< 1.0	2.5	< 1.0	WD	< 1.0	25	0.75 B	< 1.0	< 1.0	13	13	2.7
Nickel	80	32	31	0.99 B	2.1	1.4 B	1.4 B	WD	2.1	**140**	4.6	2.1	1.3 B	71	68	15
Lead	15	0.90 B	1.5	< 1.0	< 1.0	< 1.0	< 1.0	WD	0.073 B,M	0.26 B,M	< 1.0	0.070 B,M	< 1.0	0.15 B,M	0.16 B,M	1.4
Antimony	6	0.27 B	0.27 B	< 2.0	0.078 B	< 2.0	< 2.0	WD	0.069 B	0.065 B	< 2.0	< 2.0	< 2.0	0.040 B	0.049 B	0.042 B
Selenium	50	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Thallium	2	0.59 B	0.57 B	< 1.0	< 1.0	< 1.0	< 1.0	WD	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	50	< 10	< 10	< 10	< 10	< 10	< 10	WD	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Zinc	900	14 M	16 M	13 M	2.9 B,M	1.8 B,M	2.8 B,M	WD	3.0 B,M	< 5.0	2.4 B,M	4.2 B,M	1.3 B,M	2.4 B,M	3.4 B,M	< 15
Mercury (SW 7470)	1	0.33	0.34	0.078 B	0.070 B	0.094 B	0.069 B	WD	0.098 B	< 0.2	< 0.20	0.069 B	< 0.20	0.076 B	0.078 B	< 0.20

Shaded area with bold numbers indicates MCP GW-1 exceedance. - 25

B (in metals): Estimated result, less than PQL.

J = Estimated value less than PQL or based on data evaluation of laboratory results

M (In metals): detected compound concentration is less than or equal to 5 times a concentration detected in the lab method, or field equipment, blank sample(s)

WD = Well Previously Decommissioned

*** Regulatory standard is for total Chlordane**

Sample-specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

Table 4
Groundwater Pesticides & Metals Analytical Results - October 6-8, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 6 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8 (AMRO split)	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	ug/L															
PESTICIDES																
METHOD SW846 8081A																
alpha-BHC	500	< 0.20	<0.20	0.058	12 J	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
gamma-BHC (Lindane)	0.2	**2.0**	**2.0**	**1.8**	<0.050	<0.050	< 0.050	< 0.050 J	WD	< 0.050	< 0.050	0.18	0.029 J	0.037 J	<0.050	0.041 J
Heptachlor	0.4	< 0.20	<0.20	0.031	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Aldrin	0.5	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
beta-BHC	100	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
delta-BHC	100	< 0.20	<0.20	< 0.0067	13 J	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Heptachlor epoxide	0.2	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Endosulfan I	0.1	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
gamma-Chlordane	2 *	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
alpha-Chlordane	2 *	< 0.20	<0.20	< 0.0067	<0.050	<0.050	<0.050	<0.050 J	WD	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4,4'-DDE	0.1	**< 0.40**	**< 0.40**	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dieldrin	0.1	< 0.40	< 0.40	0.014	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	2	< 0.40	< 0.40	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDD	0.1	**< 0.40**	**< 0.40**	**0.16**	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan II	-	< 0.40	< 0.40	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	0.3	< 0.40	< 0.40	0.054	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin aldehyde	100	< 0.40	< 0.40	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Methoxychlor	2	< 2.0	< 2.0	< 0.067	<0.50	<0.50	<0.50	<0.50 J	WD	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Endosulfan sulfate	0.1	< 0.40	< 0.40	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin ketone		< 0.40	< 0.40	< 0.013	<0.10	<0.10	<0.10	<0.10 J	WD	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toxaphene	100	< 8.0	< 8.0	< 0.21	<2.0	<2.0	<2.0	<2.0 J	WD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TAL METALS (6020); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	27 B	36 B	150 J	33 B	54	20 B,J	52 J	WD	360	24 B	20 B	30 B	64 J	35 B,J	260 J
Calcium	-	25,700	24,400	22,000	14,800 J	9,600 J	18,600 J	8,500 J	WD	5,000 J	3,900	14,100 J	8,000 J	5,700 J	10,100 J	9,200 J
Potassium	-	4,400	4,200	4,000	3,800	3,200	4,300	1,900	WD	2,100	4,100	2,500	1,800	1,400	3,400	4,800
Magnesium	-	6,800	6,300	6,300	3,100	1,800	4,600 J	1,300 J	WD	1,200	1,300	5,200	2,200	1,600 J	2,200 J	3,600 J
Sodium	-	10,200 J	9,300 J	9,400	6,300	5,200	10,300	8,900	WD	5,400	9,500 J	8,000	4,900	5,300	6,000	22,500
Silver	7	0.067 B	0.067 B	< 7.0	< 1.0	< 1.0	< 1.0	0.030 B	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	50	2.1	2.7	14 J	< 2.0	< 2.0	< 2.0	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.88 B	1.1 B
Barium	2,000	45	44	42 J	5.4	5.4	2.8	3.2	WD	12	9.7	5.7	4.0	5.0	6.0	8.0
Beryllium	4	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	0.41 B	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	5	0.92 B	0.92 B	< 5.0	< 1.0	0.11 B	< 1.0	< 1.0	WD	0.14 B	< 1.0	0.079 B	< 1.0	0.098 B	< 1.0	0.80 B
Cobalt	5,000	100	100	100	8.3	2.7	0.078 B	0.62 B	WD	7.9	4.8	1.7	0.67 B	5.9	4.6	16
Chromium	100	5.8	4.6	6.7 J	4.3 J	2.2 J	< 2.0	2.0	WD	< 2.0	3.1	2.5 J	2.2 J	3.9	1.2 B	9.7
Copper	10,000	6.0 J	6.1 J	< 25	0.65 B,J	1.8 B,J	0.72 B,J	0.99 B,J	WD	6.1 J	2.2 J	0.99 B,J	0.98 B,J	3.3 J	0.81 B,J	9.9 J
Iron	-	13,000	12,900	13,000	3,000	300	98	51	WD	62	11,300	130	< 50	580	660	18,400
Manganese	-	5,700 J	5,600 J	6,100 J	750 J	220 J	130 J	4.1 J	WD	23 J	1300 J	240 J	9.0 J	0.16 J	170 J	2,400 J
Molybdenum		< 1.0	0.70 B	NT	< 1.0	< 1.0	2.2	< 1.0	WD	< 1.0	< 1.0	0.93 B	< 1.0	< 1.0	< 1.0	1.8
Nickel	80	25	26	26	2.8	2.7	< 2.0	2.0	WD	20	7.5	4.2	1.1 B	4.0	3.5	10
Lead	15	1.4	1.6	5.3 J	< 1.0	< 1.0	< 1.0	0.098 B	WD	2,100	< 1.0	< 1.0	< 1.0	0.15 B	0.082 B	0.46 B
Antimony	6	0.12 B	0.11 B	6.4 J	< 2.0	< 2.0	< 2.0	1.1 B	WD	< 2.0	< 2.0	< 2.0	< 2.0	0.078 B	0.057 B	0.079 B
Selenium	50	< 2.0	< 2.0	21 J	< 2.0	< 2.0	< 2.0	< 2.0	WD	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Thallium	2	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	WD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	50	< 10	< 10	< 50	< 10	< 10	< 10	< 10	WD	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Zinc	900	19	19	22	2.7 B	4.3 B	1.2 B	2.3 B	WD	21.0	4.9 B	1.7 B	1.9 B	3.1 B	6.0	9.0
Mercury (SW 7470)	1	< 0.20	< 0.20	0.12 J	< 0.20	0.098 B	< 0.20	< 0.20	WD	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.067 B

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than PQL or based on data evaluation of laboratory results

J = (in metals): method blank contamination. The associated method blank contains the target analyte at a reportable level.

NT = Well not sampled.

UN = Analyte not reliably detected because of blank contamination.

WD = Well Previously Decommissioned

B = (In metals): estimated result, less than RL

J+ = Concentration biased high due to blank contamination

*** Regulatory standard is for total Chlordane**

Sample-specific qualifiers:

Sample **OHM-A7-12** was analysed for pesticides outside of holding time and thereforeits "pesticide" results are **J-qualified**.

OHM-A7-13 was decommissioned in June 2002.

Table 4
Groundwater Pesticides & Metals Analytical Results - April 21-23, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 7 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	ug/L															
PESTICIDES																
METHOD SW846 8081A																
alpha-BHC	500	0.050 U	0.050 U	0.064 J	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.2	**1.4**	**1.4**	**0.68 J**	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.11	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor	0.4	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Aldrin	0.5	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	100	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	100	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	0.2	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.1	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	2 *	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
alpha-Chlordane	2 *	0.050 U	0.050 U	0.0067 U	0.050 U	0.050 U	0.050 U	0.050 U	WD	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
4,4'-DDE	0.1	0.10 U	0.1 U	0.0075 J	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dieldrin	0.1	0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	2	0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.1	**0.29**	**0.26**	**0.19**	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	-	0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.3	0.10 U	0.1 U	0.010 J	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	100	0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	2	0.50 U	0.50 U	0.067 U	0.50 U	0.50 U	0.50 U	0.50 U	WD	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endosulfan sulfate	0.1	0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin ketone		0.10 U	0.1 U	0.013 U	0.1 U	0.1 U	0.1 U	0.1 U	WD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Toxaphene	100	2.0 U	2.0 U	0.21 U	2.0 U	2.0 U	2.0 U	2.0 U	WD	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
TAL METALS (6020); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	1,500	1,300	1,900	27 J	47 J	2.1 J	38 J	WD	44 J	66	7.9 J	16 J	59	29 J	9,300
Calcium	-	17,900	18,300	17,000	5,300	8,600	18,300	4,300	WD	5,100	7,600	11,400	11,500	5,700	7,100	7,400
Potassium	-	4,500	35	4,600	1,600	2,500	4,300	750	WD	1,600	3,600	1,700	1,400	730	2,100	3,600
Magnesium	-	5,100	5,200	5,400	1,000	1,600	4,300	750	WD	700	2,500	3,600	3,000	1,500	1,400	3,600
Sodium	-	9,000	9,000	9,000	3,600	3,900	9,400	5,100	WD	1,200	5,800	5,700	4,200	4,500	3,500	22,800
Silver	7	0.26 J	0.22 J	7.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	0.036 J	1.0 U	1.0 U	1.0 U	1.0 U	0.062 J
Arsenic	50	14	12	22	2.0 U	2.0 U	2.0 U	2.0 U	WD	2.0 U	1.1 J	2.0 U	2.0 U	2.0 U	2.0 U	0.99 J
Barium	2,000	64	62	54 J	2.8	5.8	2.7	2.0	WD	6.4	10	4.7	4.1	3.1	3.0	15
Beryllium	4	0.091 J	1.0 U	0.14 J	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 J
Cadmium	5	2.2	2.5	5.0 U	0.091 J	0.093 J	1.0 U	1.0 U	WD	1.0 U	0.089 J	0.075 J	1.0 U	1.0 U	0.084 J	1.7
Cobalt	5,000	77	76	80	0.76 UJ	1.5 UJ	0.078 UJ	0.12 UJ	WD	0.57 UJ	7.8 J+	1.3 UJ	0.36 UJ	2.1 UJ	0.73 UJ	12 J+
Chromium	100	33 J+	35 J+	26	2.8 UJ	2.0 UJ	1.4 UJ	3.1 UJ	WD	2.4 UJ	2.5 UJ	2.2 UJ	2.2 UJ	2.9 UJ	3.6 UJ	4.3 UJ
Copper	10,000	13	13	10 J	0.93 J	1.5 J	0.70 J	0.76 J	WD	1.7 J	3.9	0.89 J	0.93 J	0.76 J	1.3 J	6.3
Iron	-	9,200	8,000	17,000	72	73	44 J	27 J	WD	50 U	24,300	120	50 U	240	31 J	15,800
Manganese	-	3,700	3,700	4,000	42	130	13	2.3	WD	3.1	2,300	170	5.4	83	5.4	1,400
Molybdenum		4.0	4.2	NA	1.0 U	1.0 U	2.0	1.0 U	WD	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nickel	80	47	49	38 J	1.3 J	1.9 J	2.0 U	0.92 J	WD	1.6	12	3.8	1.1 J	1.0 J	1.8 J	4.9
Lead	15	9.5	8.8	11	1.0 U	1.0 U	0.26 J	1.0 U	WD	1.0 U	0.22 J	1.0 U	1.0 U	0.095 J	0.14 J	2.7
Antimony	6	1.5 J	1.4 J	**6.5 J**	2.0 U	0.054 J	2.0 U	2.0 U	WD	2.0 U	0.047 J	2.0 U	2.0 U	2.0 U	2.0 U	0.13 J
Selenium	50	2.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	WD	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Thallium	2	0.35 J	0.36 J	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	WD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vanadium	50	3.8 J	10 U	5.1 J	10 U	10 U	10 U	10 U	WD	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	900	50	54	33	6.1	2.1 J	5.7	1.6 J	WD	6.4	9	6.3	6	5.0 U	2.8 J	22
Mercury (SW 7470)	1	0.32	0.36	0.27	0.20 U	0.20 U	0.20 U	0.20 U	WD	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

J+ = Reported value may be biased high due to blank contamination

WD = Well Previously Decommissioned

NA = Not Analyzed

25

*** Regulatory standard is for total Chlordane**

Table 4
Groundwater Pesticides & Metals Analytical Results - October 12-13, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(Sheet 8 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP GW-1	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	µg/L															
PESTICIDES (SW846-8081A)																
alpha-BHC	500	0.053 U	0.16 U	0.032	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
gamma-BHC (Lindane)	0.2	**0.82 J**	**1.4 J**	**1.0**	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.17	0.053 U	0.051 U	0.051 U	0.10
Heptachlor	0.4	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
Aldrin	0.5	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
beta-BHC	100	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
delta-BHC	100	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
Heptachlor epoxide	0.2	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
Endosulfan I	0.1	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
gamma-Chlordane	2 *	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
alpha-Chlordane	2 *	0.053 U	0.16 U	0.0070 U	0.055 U	0.051 U	0.051 U	0.053 U	WD	0.053 U	0.052 U	0.051 U	0.053 U	0.051 U	0.051 U	0.051 U
4,4'-DDE	0.1	**0.17**	**0.17**	0.012 J	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Dieldrin	0.1	0.11 U	0.32 U	0.0081J	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Endrin	2	0.11 U	0.32 U	0.014	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.1	0.11 U	0.32 U	**0.27**	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Endosulfan II	-	0.11 U	0.32 U	0.014 U	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.3	0.11 U	0.32 U	0.010 J	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	100	0.11 U	0.32 U	0.014 U	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Methoxychlor	2	0.53 U	1.6 U	0.070 U	0.55 U	0.51 U	0.51 U	0.53 U	WD	0.53 U	0.52 U	0.51 U	0.53 U	0.51 U	0.51 U	0.51 U
Endosulfan sulfate	0.1	0.11 U	0.32 U	0.014 U	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Endrin ketone		0.11 U	0.32 U	0.014 U	0.11 U	0.10 U	0.10 U	0.11 U	WD	0.11 U	0.10 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U
Toxaphene	100	5.3 U	16 U	0.22 U	5.5 U	5.1 U	5.1 U	5.3 U	WD	5.3 U	5.2 U	5.1 U	5.3 U	5.1 U	5.1 U	5.1 U
TAL METALS (6020); Mercury by 7470A	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Aluminum	-	531 D	296 D	299	34.1 U	34.1 U	34.1 U	34.1 U	WD	105 J	34.1 U	34.1 U	34.1 U	34.1 U	34.1 U	2,190
Calcium	-	24,600	22,800	21,100	8,910	6,910	20,500	7,670	WD	4840 J	4860 J	11,400	7,710	5,020	9,350	6,400
Potassium	-	5,080	4,600	4,100	3080 J	2550 J	4970 J	1620 J	WD	2320 J	4550 J	2300 J	1410 J	1050 J	3300 J	5,200
Magnesium	-	6,660	6,100	6,130	1770 J	1320 J	5,020	1190 J	WD	630 J	1370 J	3810 J	1900 J	1380 J	1920 J	2520 J
Sodium	-	9,000	8,370	8,480	4420 J	3160 J	9,770	7,400	WD	2160 J	6,070	6,180	3350 J	4580 J	5,080	18,300
Silver	7	0.14 J	0.16 J	7.00 U	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Arsenic	50	15.8	14.9	18	0.10 U	0.10 U	1.7 J	0.10 U	WD	0.10 U	0.87 J	0.39 J	0.10 U	0.10 U	0.20 J	4.1
Barium	2,000	44.5 J	44.7 J	40.4 J	8.6 J	9.7 J	7.2 J	7.3 J	WD	19.7 J	11.6 J	9.6 J	8.2 J	8.6 J	9.3 J	14.5 J
Beryllium	4	0.10 U	0.10 U	4.00 U	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Cadmium	5	0.72 J	0.79 J	0.296 J	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.3 J
Cobalt	5,000	73.8	73.1	70.9	0.20 U	0.34 J	0.20 U	0.20 U	WD	1.5 J	3.1 J	0.38 J	0.20 U	0.20 U	0.20 U	12.0
Chromium	100	6.5	6.6	8.27 J	1.0 J	0.51 J	0.49 J	1.7 J	WD	2.0 J	1.8 J	0.66 J	1.1 J	0.88 J	1.6 J	12.5
Copper	10,000	4.0 J	4.1 J	7.86 J	0.79 J	0.78 J	0.30 U	0.30 U	WD	0.94 J	0.46 J	0.30 U	0.30 U	0.30 U	0.35 J	3.2 J
Iron	-	10,800	9,420	9,490	96.7 J	49.4 J	278	60.3 J	WD	43.2 J	26,800	193	35.5 U	69.9 J	53.9 J	35,400
Manganese	-	4,340	4,260	4,250	52.5	83.6	95.4	4.2	WD	21.3	1,190	159	6.9	17.4	22.2	1,130
Molybdenum		0.69 J	0.73 J	NA	0.40 U	0.40 U	1.8 J	0.40 U	WD	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	2.3 J
Nickel	80	28.9	28.8	30.7 J	1.1 J	2.3 J	0.33 J	2.0 J	WD	7.9 J	5.2 J	4.2 J	1.4 J	1.1 J	2.0 J	6.4 J
Lead	15	9.3	8.5	8.2	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.56 J	0.10 U	0.10 U	0.10 U	0.10 U	3.4
Antimony	6	2.3 J	2.4 J	**9.63 J**	1.5 J	1.6 J	1.7 J	1.3 J	WD	1.3 J	1.5 J	1.4 J	1.4 J	1.4 J	1.4 J	1.5 J
Selenium	50	2.1	2.0 J	5.0 U	0.30 U	0.30 U	0.30 U	0.30 U	WD	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.48 J
Thallium	2	0.11 J	0.10 U	5.0 UJ	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.17 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Vanadium	50	1.0 J	0.93 J	1.37 J	0.10 U	0.10 U	0.10 U	0.10 U	WD	0.10 U	0.10 U	0.23 J	0.10 U	0.10 U	0.10 U	0.69 J
Zinc	900	31.3	33.2	35.0	0.70 U	1.7 J	0.70	0.70 U	WD	6.0 J	1.9 J	0.70 U	0.70 U	0.70 U	1.6 J	18.5 J
Mercury	1	0.10 UJ	0.10 UJ	0.072 J	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	WD	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ	0.10 UJ

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

25

* Regulatory standard is for total Chlordane

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination or reporting limit is estimated due to low spike recovery

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

WD = Well Previously Decommissioned

NA = Not Analyzed

D = Estimated value due to duplicate results exceeding acceptable RPD

Table 4
Groundwater Pesticides & Metals Analytical Results May 31-June 2, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 9 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP GW-1	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Standard *													
	µg/L													
PESTICIDES (SW846-8081A)														
alpha-BHC (note 3)	500	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054
gamma-BHC (Lindane)**	0.2	**1.1**	**1.1**	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.084	0.051 U	0.051 U	0.053 U	0.059
Heptachlor	0.4	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
Aldrin	0.5	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
beta-BHC (note 3)	-	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
delta-BHC (note 3)	-	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
Heptachlor epoxide	0.2	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
Endosulfan I (GW-3)	0.1	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
gamma-Chlordane (note 1)	2 *	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
alpha-Chlordane (note 1)	2 *	0.11 U	0.10 U	0.052 U	0.051 U	0.051 U	0.051 U	0.052 U	0.051 U	0.050 U	0.051 U	0.051 U	0.053 U	0.054 U
4,4'-DDE	0.1	0.21 U Q	0.20 U Q	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Dieldrin	0.1	0.21 U Q	0.20 U Q	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Endrin	2	0.21 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
4,4'-DDD	0.1	0.21 U Q	0.20 U Q	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Endosulfan II (note 2)	0.1	0.21 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
4,4'-DDT	0.3	0.21 U Q	0.20 U Q	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Endrin aldehyde	-	0.21 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Methoxychlor	2	1.1 U	1.0 U	0.52 U	0.51 U	0.51 U	0.51 U	0.52 U	0.51 U	0.50 U	0.51 U	0.51 U	0.053 U	0.54 U
Endosulfan sulfate	-	0.21 U Q	0.20 U Q	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Endrin ketone	-	0.21 U	0.20 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U
Toxaphene	-	11 U	10 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U	5.1 U	5.0 U	5.1 U	5.1 U	5.3 U	5.4 U
TAL METALS & Molybdenum by 6020/6010; Mercury by 7470A														
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Aluminum	-	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	88.0 U	168 J	88.0 U	103 J
Calcium	-	23,400	22,500	8,640	6,720	18,900	6,500	3700 J	6,110	11,000	8,620	6,360	8,420	7,690
Potassium	-	5,480	5,160	2250 J	2730 J	4420 J	1470 J	2440 J	4340 J	2040 J	1580 J	989 J	2790 J	4520 J
Magnesium	-	6,410	6,180	1750 J	1340 J	4640 J	1050 J	545 J	1960 J	3790 J	2220 J	1740 J	1750 J	3030 J
Sodium	-	7,560	7,380	3140 J	3620 J	9,240	6,190	1450 J	7,900	5,580	3760 J	4250 J	3200 J	20,800
Silver (GW-3)	7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.25 J	0.10 U	0.10 U
Arsenic (note 4)	50 -> 10	0.94 J	0.98 J	0.10 U	0.10 U	0.35 J	0.10 U	0.10 U	1.5 J	0.10 U	0.10 U	0.35 J	0.10 U	0.17 J
Barium	2,000	44.0 J	44.5 J	0.80 U	1.0 J	0.80 U	0.80 U	1.4 J	2.7 J	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
Beryllium	4	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Cadmium	5	0.55 J	0.59 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**7.3**
Cobalt	5,000	71.3	72.4	0.94 U J	1.5 UJ	0.57 UJ	0.56 UJ	0.55UJ	13.1J+	1.4 UJ	0.52UJ	159	0.72 UJ	7.2 J+
Chromium	100	0.66 UJ	0.74 UJ	0.35 UJ	0.28 UJ	0.57 UJ	0.47 UJ	0.29 UJ	1.2 J+	0.29 UJ	0.64 UJ	33.8	0.45 UJ	1.3 J+
Copper	10,000	4.1 UJ	4.8 UJ	0.30 U	6.1UJ	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	5.3 UJ	0.30 U	0.30 U
Iron	-	2,250	2,230	72.4 J	62.5 J	104	47.8 J	48.0 J	26,600	65.4 J	37.9 U	1470	37.9 U	4,490
Manganese	-	4,370	4,380	34.0	138	12.6	1.5 UJ	2.0 UJ	1,990	134	3.4 J+	58.6	3.3 J+	1,190
Molybdenum	-	0.30 U	0.30 U	0.30 U	0.30 U	1.5 UJ	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	17.1 J	0.30 U	0.30 U
Nickel	80	20.0 J	20.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	4.0 J	2.0 J	0.50 U	112	0.50 U	2.3 J
Lead	15	1.5 UJ	1.5 UJ	0.50 UJ	0.61 UJ	0.65 UJ	0.67 UJ	0.54 UJ	0.55 UJ	0.55 UJ	0.57 UJ	0.78 UJ	0.57 UJ	0.62 UJ
Antimony	6	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Selenium	50	2.5	2.6	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.26 J	0.20 U	0.20 U	0.20 U	0.20 U	0.73 J
Thallium	2	0.28 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Vanadium	50	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Zinc (GW-3)	900	18.0 J+	18.2 J+	1.4 UJ	0.60 U	5.3 UJ	0.90 UJ	1.6 UJ	4.2 UJ	7.9 UJ	3.1 UJ	4.4 UJ	0.60 U	9.3 UJ
Mercury (GW-3)	1	0.61	0.60	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.98	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

*** MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]**

**** synonym for gamma -BHC/Lindane = gamma hexachlorocyclohexane**

Shaded area with bold numbers indicates MCP RCGW-1 exceedance.

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination or reporting limit is estimated due to low spike recovery

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

J+ = Value may be biased high based on blank contamination

NA = Not Analyzed

D = Estimated value due to duplicate results exceeding acceptable RPD

Q = The pesticide sample was diluted 2:1 increasing the reporting limit to 0.20 µg/L, above the MCP GW-1 standard of 0.10 µg/L for 4,4'-DDE. The QA laboratory's undiluted result for 4,4'-DDE was < 0.05 µg/L.

Q = Other chemicals similarly affected were DDD (detected by the QA lab at 0.09 ug/L); DDT detected by the QA lab at 0.04 ug/L); Dieldrin not detected by the QA lab (0.05 U ug/L); Endosulfan sulfate (0.21 U).

Metals run by 6010 ICP - aluminum, calcium, potassium, magnesium, sodium and iron; remainder of listed samples (other than Hg) run by 6020 ICP/MS.

Note 1: Alpha-chlordane: MCP GW-1 standard is based on technical chlordane or total chlordane (the sum of all multi-component isomers, including the alpha and gamma chlordane isomers, found in technical chlordane).

Note 2: Endosulfan II: MCP standard is for endosulfan GW-3.

Note 3: Alpha-BHC, beta-BHC, delta-BHC, Endrin aldehyde, Endrin ketone, Endosulfan sulfate, Toxaphene: no MCP standard.

Note 4: Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Table 4
Groundwater Pesticides & Metals Analytical Results - September 13-14, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 10 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-11	OHM-A7-12	OHM-A7-46	OHM-A7-51	JO-A07-M63
PARAMETERS	**MCP GW-1**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Standard *								
	ug/L								
PESTICIDES									
METHOD SW846 8081A									
4,4'-DDD	0.1	**0.12**	**0.10**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)**	0.1	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDT	0.3	0.05 J	0.06	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.5	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-BHC (note 3)	-	0.03 J	0.03 J	0.05 U	0.05 U	0.05 U	0.02 J	0.05 U	0.05 U
alpha-Chlordane (note 1)	2	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC (note 3)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Chlordane (total) (note 1)	2	0.56 U	0.50 U	0.50 U	0.50 U	0.50 U	0.53 U	0.50 U	0.50 U
delta-BHC (note 3)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.1	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I (GW-3)	0.1	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan II (note 2)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan sulfate (note 3)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin	2	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin aldehyde (note 3)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin ketone (note 3)	-	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.2	**1.84**	**1.76**	0.05 U	0.05 U	0.05 U	0.05 U	0.10	0.17
gamma-Chlordane (note 1)	2	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.4	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.2	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobenzene	1	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methoxychlor	2	0.06 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene (note 3)	-	2.78 U	2.50 U	2.50 U	2.50 U	2.50 U	2.63 U	2.50 U	2.50 U
TAL METALS (6020); Mercury by 7470A	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	-	50.0 U	50.0 U	120	50.0 U	118	50.0 U	50.0 U	688
Antimony	6	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Arsenic (note 4)	50	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	3.9
Barium	2,000	36.5	37.9	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Beryllium	4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Calcium	-	22,300	23,000	13,100	19,600	7,350	4,250	10,700 J-	9,040
Chromium	100	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Cobalt	5,000	64.8	69.9	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	11
Copper	10,000	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Iron	-	5,660	4,980	197	160	162	29,500	119	20,700
Lead	15	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Magnesium	-	5,610	5,750	2,590	4,790	1,160	1,170	3,480	3,070
Manganese	-	4,090	4,190	789	209	142J-	1,200	170	1,270
Mercury (SW 7470)	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Nickel	80	21.4	20.9	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Potassium	-	4,200	4,300	3,180	3,920	2500 U	3,330	2,500	3,550
Selenium	50	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Silver	7	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Sodium	-	7,790	7,730	5,430	9,920	7,460	6,020	6,520	10600
Thallium	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vanadium	50	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Zinc	900	25.0 U	25.1	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U

*** MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]**

**** synonym for gamma -BHC/Lindane = gamma hexachlorocyclohexane**

Shaded area with bold numbers indicates MCP Standard exceedance. - **25**

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

J+ = Reported value may be biased high due to blank contamination

NA = Not Analyzed

Note 1: Alpha-chlordane: MCP GW-1 standard is based on technical chlordane or total chlordane (the sum of all multi-component isomers, including the alpha and gamma chlordane isomers, found in technical chlordane).

Note 2: Endosulfan II: MCP standard is for endosulfan GW-3.

Note 3: Alpha-BHC, beta-BHC, delta-BHC, Endrin aldehyde, Endrin ketone, Endosulfan sulfate, Toxaphene: no MCP standard.

Note 4: Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Table 5
Groundwater General Water Quality Parameters Analytical Results - May 9-10, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 1 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
ANIONS (300)															
Nitrate (as N)	-	100 J	140 J	130	740	70	910	1,500 J	1,700 J	580 J	4,600 Q,J	5,000 J	740	750	70
Orthophosphate (as P)	-	<200	<200	<200	<200	180 B	80 B,U	80 B,J	<200	<200 J	<200	<200	<200	<200	<200
Chloride	-	6,700 G	6,800 G	1,200	2,600	5,200	2,300	2,300	1,700	3,800	3,200	5,000	3,500	1,700	11,000
Sulfate	-	29,200 Q	30,900 Q	21,200	16,000	17,100	9,400	8,900	9,500	4,200	8,200	11,900	9,500	15,800	12,900
AMMONIA (350.1)															
Ammonia as N	-	1,500	1,400	<100	76 B	<100	39 B	<100	<100	1,000	<100	57 B	<10	<100	46,000
COD (410.4)															
Chemical Oxygen Demand	-	243000 Q,J	108,000 J	<10,000 J	<10,000	<10,000	<10,000	<10,000	<10,000	18,000	<10,000	<10,000	<10,000	<10,000	<10,000
TDS (160.1)															
Solids, Total Dissolved	-	242,000 J	230,000 J	72,000 J	83,000 J	130,000 J	19,000 J	37,000 J	13,000 J	46,000 J	76,000 J	72,000 J	56,000 J	62000 J	10,000 J
CYANIDE (335.4)															
Cyanide, Total	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
FER IRON (HACH 8146)															
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

25

J = Estimated value less than PQL or based on data evaluation of laboratory results

B = Analyte is also present in equipment blank sample at a reportable level.

G = Elevated reporting limit. The reporting limit is elevated due to matrix interference

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

NA = Not Analyzed

E = Estimated values greater than the instrument calibration range

Table 5
Groundwater General Water Quality Parameters Analytical Results - October 22-24, 2001 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 2 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP GW-1**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	ug/L														
ANIONS (300)															
Nitrate (as N)	-	<50	<50	<50	180	68	800	No sample	530	No sample	400	330	No sample	<50	<50
Orthophosphate (as P)	-	<200	<200	<200	<200	<200	<200	No sample	<200	No sample	<200	<200	No sample	<200	<200
Chloride	-	6,800 G	6,500 G	12,800 G	2,700	5,600	2,500	No sample	4,800	No sample	6,500	8,400	No sample	3,900	10,600
Sulfate	-	12,100	12,300	19300	14,200	17,100	10,400	No sample	15,200	No sample	10,600	12,000	No sample	23,800	13,600
AMMONIA (350.1)															
Ammonia as N	-	760	740	<100	<100	<100	<100	No sample	<100	No sample	<100	<100	No sample	<100	380
COD (410.4)															
Chemical Oxygen Demand	-	31,700	33,100	<10,000 J	<10,000	<10,000	<10,000	No sample	<10,000	No sample	<10,000	<10,000	No sample	<10,000	19,500
TDS (160.1)															
Solids, Total Dissolved	-	203,000	213,000	12,600 JB	75,000	120,000	72,000	No sample	57000 B	No sample	95,000 J	101,000	No sample	85,000	108,000
CYANIDE (335.4)															
Cyanide, Total	10	<10	<10	<10	<10	<10	<10	No sample	<10	No sample	<10	<10	No sample	<10	<10
FERROUS IRON (HACH 8146)															
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

25

J = Estimated value less than PQL or based on data evaluation of laboratory results
B = Analyte is also present in equipment blank sample at a reportable level.
G = Elevated reporting limit. The reporting limit is elevated due to matrix interference
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
NT = Well not sampled.
NA = Not Analyzed

Metals specific qualifiers:
B (metals) = Estimated value; result is less than the reporting limit
J (metals) = Associated method blank showed reportable concentration of this analyte.

Table 5
Groundwater General Water Quality Parameters Analytical Results - April 23-25 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 3 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
ANIONS (300)															
Nitrate (as N)	-	130 N	130 N	500	1,500	77 N	520	2,400	620	930	400	1,500	180 N	280	< 50
Orthophosphate (as P)	-	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200
Chloride	-	6,200 J	6,200 J	1,900 J	2,800 J	5,100 J	2,500	2,100 J	2,400 J	4,000 J	4,700 J	4,400 J	3,700	2,600	11,500
Sulfate	-	12400 L	12300 L	23,700 J,L	15900 L	16500 L	8,900	10600 L	21200 L	10700 L	11600 L	8800 L	11,300	19,000	13,200
AMMONIA (350.1)															
Ammonia as N	-	700	680	140	42 B	< 100	< 100	< 100	< 100	120	130	< 100	< 100	< 100	340
COD (410.4)															
Chemical Oxygen Demand	-	15,900	14,600	5,200 B	3,200 B	<10,000	< 10,000	< 10,000	< 10,000	10,100	< 10,000	< 10,000	< 10,000	3,200 B	5,800 B
TDS (160.1)															
Solids, Total Dissolved	-	120,000	113,000	80,000	78,000	110,000	60,000	53,000	46,000	73,000	80,000	57,000	51,000	59,000	114
CYANIDE (335.4)															
Cyanide, Total	10	< 10	< 10	< 10	< 10	< 10	< 10	4.0 B	< 10	< 10	< 10	2 B	< 10	< 10	< 10
FER IRON (HACH 8146)															
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

25

J = Estimated value less than PQL or based on data evaluation of laboratory results
B = Analyte is also present in equipment blank sample at a reportable level.
G = Elevated reporting limit. The reporting limit is elevated due to matrix interference
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
NT = Well not sampled.
NA = Not Analyzed
N= Sample concentration within 5 times that of the equipment blank.
L= MS/MSD recoveries outside limits, but corresponding LCS/LCSD recoveries within limits.

Metals specific qualifiers:
B (metals) = Estimated value; result is less than the reporting limit
J (metals, anions) = Associated method blank showed reportable concentration of this analyte.
B (COD, ammonia) = Sample detection at below the detection limit

Table 5
Groundwater General Water Quality Parameters Analytical Results - October 15,17 2002 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 4 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
ANIONS (300)															
Nitrate (as N)	-	< 50	< 50	< 50	850	44 J	640	WD	600	NT	220	1,600	NT	< 50	42 J
Orthophosphate (as P)	-	< 200	< 200	< 200	< 200	< 200	< 200	WD	< 200	NT	< 200	< 200	NT	< 200	< 200
Chloride	-	5600 J+	5600 J+	12500 J+	2,600 J+	5,200 J+	2400 J+	WD	4000 J+	NT	6400 J+	3200 J+	NT	60,000 J,Q	18,100 J
Sulfate	-	11,200	11,900	17,600	14,100 V	16,400 V	10,600	WD	12,400	NT	10,900	9,300	NT	11,400	12,900
AMMONIA (350.1)															
Ammonia as N	-	680 J+	690 J+	<100	< 100	< 100	< 100	WD	< 100	NT	< 100	< 100	NT	< 100	350 UN
COD (410.4)															
Chemical Oxygen Demand	-	23,600	25,600	5,700 J	6,700 J	<10,000	6,400 J	WD	4,000 J	NT	< 10,000	< 10,000	NT	8,700 J	12,000
TDS (160.1)															
Solids, Total Dissolved	-	168,000	153,000	141,000	76,000	113,000	8,300	WD	66,000 B	NT	128,000	61,000	NT	220,000	121,000
CYANIDE (335.4)															
Cyanide, Total	10	< 10	< 10	2.5 L	< 10	< 10	< 10	WD	< 10	NT	< 10	< 10	NT	< 10	< 10
FER IRON (HACH 8146)															
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. - **25**

J = Estimated value less than RL or based on data evaluation of laboratory results

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NT = Well not sampled.

WD = Well Previously Decommissioned

J+ = Concentration biased high due to blank contamination

Sample specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

OHM-A7-46 and OHM-A7-61 were not sampled in October 2002 due to low groundwater elevations.

Table 5
Groundwater General Water Quality Parameters Analytical Results - April 22-24, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 5 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1														
	ug/L														
ANIONS (300)															
Nitrate (as N)	-	910	940	75	600	< 50	440	WD	190 B	980	50	5,000 Q	1,400	400	310
Orthophosphate (as P)	-	< 200	< 200	< 200	< 200	< 200	< 200	WD	< 200	< 200	< 200	< 200	< 200	< 200	< 200
Chloride	-	4,400 B,G	4,500 B,G	< 1,000	1,400	4,700	1,600	WD	1,700	3,900	4,800	3,000	1,900	< 1,000	13,500
Sulfate	-	26,500 Q	26,500 Q	17,100	13,600	18,000	10,100	WD	6,100	7,300	10,500	7,800	10,300	12,600	10,600
AMMONIA (350.1)															
Ammonia as N	-	1,400	1,400	< 100	< 100	< 100	< 100	WD	19 B	410	< 100	< 100	< 100	< 100	310
COD (410.4)															
Chemical Oxygen Demand	-	50,300	52,400	< 10,000	< 10,000	< 10,000	< 10,000	WD	< 10,000	14,200	< 10,000	< 10,000	< 10,000	< 10,000	< 10,000
TDS (160.1)															
Solids, Total Dissolved	-	219,000	204,000	22,000	48,000	99,000	70,000	WD	21,000	71,000	89,000	89,000	46,000	45,000	112,000
CYANIDE (335.4)															
Cyanide, Total	10	8.0 B,N	8.1 B,N	< 10	< 10	< 10	< 10	WD	7.1 B,N	7.1 B,N	3.5 B,N	8.4 B,N	< 10	< 10	< 10
FER IRON (HACH 8146)															
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

25

B = Estimated value less than reporting limit.
G = Elevated reporting limit. The reporting limit is elevated due to matrix interference.
N = The compound is detected at less than 5 times the equipment blank concentration.
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
WD = Well Previously Decommissioned

Sample specific qualifiers:

OHM-A7-13 was decommissioned in June 2002.

Table 5
Groundwater General Water Quality Parameters Analytical Results - October 6-8, 2003 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 6 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8 (AMRO split)	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP GW-1**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	ug/L															
ANIONS (300)																
Nitrate (as N)	-	78 J	48 B,J	70 J	< 50	160	< 50	410	WD	360	610	460	1,200	220	< 50	< 100 G
Orthophosphate (as P)	-	< 200	< 200	550 J	< 200	< 200	< 200	< 200	WD	< 200	< 200	< 200	< 200	< 200	< 200	< 400 G
Chloride	-	3,600 Q	3,800 Q	5,100	1,700 B,G	1,500	4,800	1,300	WD	3,100	4,100	3,900	2,300	1,800	2,400	9,300 Q
Sulfate	-	15,100	15,000	14,000	19,500 Q	13,900	17,700	11,000	WD	23,100 Q	3,400	11,000	9,800	11,200	19,600	10,000 G
AMMONIA (350.1)																
Ammonia as N	-	1,600	1,600	1,400	79 B	< 100	< 100	< 100	WD	< 100	2,000	< 100	35 B	< 100	< 100	540
COD (410.4)																
Chemical Oxygen Demand	-	27,500	29,800	32,000 J	< 10,000	< 10,000	<10,000	< 10,000	WD	< 10,000	17,800	< 10,000	< 10,000	< 10,000	< 10,000	12,900
TDS (160.1)																
Solids, Total Dissolved	-	133,000 J	175,000 J	300,000	101,000	87,000	117,000 J	56,000 J	WD	45,000	72,000	130,000	53,000	63,000 J	76,000 J	119,000
CYANIDE (335.4)																
Cyanide, Total	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	WD	< 10	< 10	< 10	< 10	< 10	< 10	< 10
FER IRON (HACH 8146)																
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Cross-hatched area with bold numbers indicates MCP GW-1 exceedance. -

J = Estimated value less than RL or based on data evaluation of laboratory results

J (TDS in wells 11,12,61,62; Oct 2003) = Sample analysed one day past holding time therefore J-qualified.

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

B - Estimated result. Result is less than RL

G - Elevated Reporting Limit. The reporting limit is elevated due to matrix interference.

NT = Well not sampled.

WD = Well Previously Decommissioned

J+ = Concentration biased high due to blank contamination

Sample specific qualifiers:

OHM-A7-8 and duplicate, for nitrate and TDS: Oct 2004: RPD>20% therefore J qualified.

OHM-A7-13 was decommissioned in June 2002.

Table 5
Groundwater General Water Quality Parameters Analytical Results - April 21-23, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 7 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
PARAMETERS	**MCP**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	GW-1															
	µg/L															
ANIONS (300)																
Nitrate (as N)	-	610 J	610 J	600	190	930	50 U	140	WD	600	80	650	3,700 Q	360	1,600	65 J
Orthophosphate (as P)	-	200 UJ	200 UJ	500 UJ	200 U	200 UJ	200 U	200 UJ	WD	200 U	200 UJ	200 U	200 U	200 UJ	200 U	200 UJ
Chloride	-	6,600	6,200	5,400	870 J	1,800	4,800	1900 J	WD	1,300	5,700	2,900	2,000	1,900	1,900	13,400
Sulfate	-	10,300	10,300	9,200	15,800	11,200	17,100	6400 J	WD	6,900	10,900	10,000	8,100	10,600	12,000	10,000
AMMONIA (350.1)																
Ammonia as N	-	530	530	1000 U	37 J	35 J	100 U	20 J	WD	29 J	2,300	33 J	100 U	37 J	100 U	530
COD (410.4)																
Chemical Oxygen Demand	-	20700 UJ	15400 UJ	24000 J	6,800 UJ	3,300 UJ	10,000 U	4,600 UJ	WD	3,300 UJ	25800 UJ	16000 UJ	4,300 UJ	7,100 J	7,800 UJ	12200 UJ
TDS (160.1)																
Solids, Total Dissolved	-	166000 J	121000 J	140000 J	27,000	43,000	100,000	22,000	WD	17,000	82,000	64,000	73,000	47,000	38,000	163,000
CYANIDE (335.4)																
Cyanide, Total	10	2.5 J	2.4 J	10 U	3.4 J	10 U	10 U	10 U	WD	10 U	10 U	10 U	2.3 J	3.1 J	2.9 J	2.3 J
FER IRON (HACH 8146)																
Ferrous Iron	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

Shaded area with bold numbers indicates MCP GW-1 exceedance. -

25

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination or holding time exceedance

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

WD = Well Previously Decommissioned

Table 5
Groundwater General Water Quality Parameters Analytical Results - October 12-13, 2004 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(Sheet 8 of 10)

PARAMETERS	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-8QA	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	MCP GW-1	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	µg/L															
ANIONS (300)																
Nitrate (as N)	-	200 U	200 U	195 UJ	470	530	200 U	460	WD	1,300	200 UJ	640	1,300	420	250	200 U
Orthophosphate (as P)	-	200 U	200 U	740	200 U	200 U	200 U	200 U	WD	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	-	5600 J+	5700 J+	NA	2200 UJ	2200 UJ	6000 J+	2400 UJ	WD	2300 UJ	4200 J+	4400 J+	2800 UJ	3200 UJ	4000 J+	10000 J+
Sulfate	-	19,800	20,400	17,000	21,200	16,600	20,000	10900 J+	WD	11400 J+	7500 J+	11900 J+	11200 J+	12400 J+	19000 J+	12500 J+
AMMONIA (350.1)																
Ammonia as N	-	74 UJ	710 J+	1000 U	84 UJ	110 UJ	110 UJ	99 UJ	WD	110 UJ	1900 J+	760 J+	130 UJ	110 UJ	150 UJ	440 UJ
COD (410.4)																
Chemical Oxygen Demand	-	46000 UJ	42000 UJ	32,000 UJ	20,000 U	20,000 U	20,000 U	20,000 U	WD	20,000 U	33900 UJ	20,000 U	20,000 U	20,000 U	20,000 U	35900 UJ
TDS (160.1)																
Solids, Total Dissolved	-	125,000	131,000	160,000	42,000	31,000	94,000	36,000	WD	16,000	68,000	56,000	44,000	30,000	46,000	89,000
CYANIDE (335.4)																
Cyanide, Total	10	**26.2**	10.0 U	10.0 U	10.0 U	10 U	10 U	10 U	WD	10 U	10 U	10 U	2.3 J	10.0 U	10.0 U	10.0 U
FER IRON (HACH 8146)																
Ferrous Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Shaded area with bold numbers indicates MCP GW-1 exceedance. - **25**

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination or holding time exceedance

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

J+ = Value may be biased high based on blank contamination

WD = Well Previously Decommissioned

Table 5
Groundwater General Water Quality Parameters Analytical Results May 31-June 2, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 9 of 10)

PARAMETERS	MCP GW-1 Standard	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-12	OHM-A7-13	OHM-A7-45	OHM-A7-46	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	mg/L															
ANIONS (300)																
Nitrate (as N)	-		0.62 UJ	0.63 UJ	0.58	0.63	0.35	0.46	WD	0.64 UJ	0.34 UJ	0.67	2.9	1.0	0.82	0.39
Orthophosphate (as P)	-		0.20 U	0.42 UJ	0.26 UJ	0.20 U	0.28 UJ	0.20 U	WD	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Chloride	-		4.9	5.3	1.7	1.6	5.6	2.0	WD	1.2 UJ	3.8	2.6	1.8	2.0	1.7	8.4
Sulfate	-		34.9	31.0	16.5	13.7	19.6	10.1	WD	5.1	7.8	11.0	10.2	11.0	14.4	9.4
AMMONIA (350.1)																
Ammonia as N	-		1.40	1.3	0.039 UJ	0.031 UJ	0.043 UJ	0.085 UJ	WD	0.1 UJ	2.0	0.026 UJ	0.039 UJ	0.024 U	0.024 U	0.66 J+
COD (410.4)																
Chemical Oxygen Demand	-		54.6 J	20.0 UJ	58.5	20.0 U	20.0 U	20.0 U	WD	88.1	31.0	32.9	20.0 U	20.0 U	20.0 U	20.0 U
TDS (160.1)																
Solids, Total Dissolved	-		142	142	73	61	134	62	WD	26	91	80	83	70	66	116
CYANIDE (335.4)	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Cyanide, Total (GW-3)	10		10.0 U	10.0 U	10.0 U	10 U	10 U	10 U	WD	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U
FIELD WATER QUALITY PARAMETERS																
Temp (initial) (deg C)			11.56	11.56	10.76	10.16	10.31	10.00	WD	10.07	10.10	11.00	10.97	9.71	10.04	9.70
Temp (final) (deg C)			12.10	12.10	11.11	12.60	11.13	10.90	WD	12.37	10.48	13.97	12.62	12.17	11.98	13.35
Spec Conductance (µS/cm	µS/cm		227	227	82	72	175	77	WD	39	208	126	84	69	78	157
pH (std units)	pH		5.60	5.60	5.46	5.41	8.08	5.93	WD	5.83	5.99	6.01	5.47	5.52	5.66	6.44
ORP/Eh (mV)	mV		161.7	161.7	271.5	258.2	159.2	241.5	WD	235.6	17.2	214.3	255.3	237.6	263.4	44.6
DO mg/L	mg/L		4.02	4.02	1.45	0.82	1.32	6.66	WD	10.89	0.79	0.84	3.77	1.83	1.78	1.94
Turbidity (NTU)	NTU		NC	NC	1.72	1.51	NC	1.80	WD	0.43	NC	NC	0.52	0.70	0.48	18.2

*** MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]**

Shaded area with bold numbers indicates MCP GW-1 standard exceedance.

U = Analyte not detected above laboratory's reporting limit

UJ = Analyte tentatively not detected at reported concentration due to blank contamination

J = Estimated value less than reporting limit or based on data evaluation of laboratory results

J+ = Value may be biased high based on blank contamination

NC = Not Collected: turbidity at OHM-A7-08, OHM-A7-11, OHM-A7-46 (turbidity meter malfunctioning); turbidity meter reporting negative values at OHM-A7-51.

Table 5
Groundwater General Water Quality Parameters Analytical Results - September 13-14, 2005 Sampling Event
Sudbury Training Annex - Landfill at AOC A7
(SHEET 10 of 10)

	Well No.	OHM-A7-8	OHM-A7-8DUP	OHM-A7-9	OHM-A7-11	OHM-A7-12	OHM-A7-46	OHM-A7-51	JO-A07-M63
PARAMETERS	**MCP GW-1**								
	Standard *								
COD (410.4)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Chemical Oxygen Demand	-	21	18	10 U	10 U	10 U	10 U	10 U	16
CYANIDE (335.4)	µg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Cyanide, Total (GW-3)	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FIELD PARAMETERS									
Temperature ^{0}C		20.03	20.03	14.22	19.9	17.8	25.97	21.25	N/A
Specific Conductance		236	236	134	179	87	187	137	N/A
pH	pH	5.21	5.21	N/A	3.4	5.6	5.63	5.14	N/A
Oxidation Reduction Potential mV	mV	232.8	232.8	649	388	512.6	246.8	579.7	N/A
Dissolved Oxygen mg/L	mg/L	2.17	2.17	1.1	9.8	4.69	4.48	0.57	N/A
Turbidity	NTU	3.39	3.39	11.2	0.65	3.5	7.01	2.13	N/A

*** MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]**
Shaded area with bold numbers indicates MCP Standard exceedance. -
U = Analyte not detected above laboratory's reporting limit
UJ = Analyte tentatively not detected at reported concentration due to blank contamination
J = Estimated value less than reporting limit or based on data evaluation of laboratory results
Q = Elevated reporting limit. The reporting limit is elevated due to high analyte levels.
N/A = Number not available.

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 1 OF 10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-8															
			25-Jun-92	4-Nov-92	1-Dec-93	2-Jul-96	10-Oct-96	Apr-97	Oct-97	Oct-97 (dup)	Apr-98	Apr-98 (dup)	Oct-98	Oct-98 (dup)	Apr-99	Apr-99 (dup)	Oct-99	Oct-99 (dup)
Volatile Organic Compounds																		
Chloroform	ug/L	5	**24**	**5.4**	**300**	**48**	**7**	3	4	3	1 U	1 u	10 u	10 u	10 u	10 u	10 u	5 u
cis-1,3-dichloropropene	ug/L	0.5	NA	NA	NA				NA	NA	1 U	1 U	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	NA	NA	NA	0.5 u	0.5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	20	ND	7	ND	NA	NA	0.5 u	**57**	**28**	3.6	4.2	**29**	**29**	12	12	15	17
1,1,2,2-Tetrachloroethane	ug/L	2	ND	ND	ND	0.51 u	0.51 u	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene	ug/L	5	**13**	**15**	**38**	**12**	**27**	**120**	**140**	**100**	**98**	**89**	**130**	**130**	**94**	**95**	**91**	**93**
Trichloroethene	ug/L	5	ND	ND	ND	0.5 u	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Pesticides/PCBs																		
gamma-BHC (Lindane)	ug/L	0.2	**1.1**	**1.26**	**0.49**	**0.836**	**2.8**	**17**	0.052 u	0.053 u	**15**	**17**	**14**	**12**	**12**	**12**	**6.7**	**7.7**
4,4'-DDE	ug/L	0.1	#N/A	#N/A	#N/A	#N/A	#N/A	< 0.1	< 0.1	< 0.1	**<5.0**	**<5.0**	**<5.6**	**< 5.7**	**< 2.0**	**< 1.0**	**< 5.0**	**< 5.6**
4,4'-DDD	ug/L	0.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**0.35**	**0.48**	**< 5.0**	**< 5.0**	**< 5.6**	**< 5.7**	**0.3 J**	**0.29 J**	**< 5.0**	**< 5.6**
Metals (Total)																		
Arsenic	ug/L	50	ND	2.98	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Antimony	ug/L	6						5 U	NA	NA	2 U							
Chromium	ug/L	100	ND	ND	NA	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Lead	ug/L	15	ND	5.96	NA	NA	NA	**495**	**450**	**290**	**17**	15	10	9.5	11.7	11.5	10	4.3
Mercury	ug/L	1	ND	ND	NA	NA	NA	**5.1**	**1.6**	0.9	**1.5**	**1.1**	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u
Nickel	ug/L	80	-	-	-	-	-	**80.4**	51	43	**170**	**160**	50	53	51	53	48	41
Thallium	ug/L	2.0	-	-	-	-	-	-	< 2		30 U		1 U		10 U		10 U	

Parameter	Units	MCP GW-1 Standard	OHM-A7-8 Continued															
			Apr-00	Apr-00 (dup)	Oct-00	Oct-00 (dup)	May-01	May 2001 (dup	Oct-01	Oct-01 (dup)	Apr-02	Apr-02 (dup)	Oct-02	Oct-02 (dup)	Apr-03	Apr-03 (dup)	Oct-03	Oct-03 (dup)
Volatile Organic Compounds																		
Chloroform	ug/L	5	<2	<2	<1	<1	<1	<2	**<5.2**	<2	0.24 J	0.25 J	0.29 J	1 U	1 U	1 U	< 1	< 1
cis-1,3-dichloropropene	ug/L	0.5	NA	NA	NA	NA	1 U	2 U	6.2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2- Dichloroethane	ug/L	5	<2	<2	<1	<1	<1	<2	**<5.2**	<2	<1	<1	<1	<1	< 1	< 1	< 1	< 1
Naphthalene	ug/L	20	<2	<2	9.2 J	12 J	1.5 J	1.3 J	<5.2	<2	< 1	< 1	0.49 J	0.43 J	0.33 J	0.42 J	< 1	< 1
1,1,2,2-Tetrachloroethane	ug/L	2	<2	<2	<1	<1	<1	<2	**<5.2**	<2	<1	<1	<1	<1	< 1	< 1	< 1	< 1
Tetrachloroethene	ug/L	5	**43**	**44**	**71 E**	**71**	**40**	**37 J**	**59**	**77**	**14**	**16**	**33**	**31**	**24**	**24**	**23 J**	**23 J**
Trichloroethene	ug/L	5	<2	<2	2.4	2	0.67 J	2.1	2.2 J	2.1	<5	<5	0.96 J	0.81 J	1.3	1.5	< 1	< 1
Pesticides																		
gamma-BHC (Lindane)	ug/L	0.2	**9.5**	**9.6**	**5.1 J**	**7.4**	**7**	**6.6**	**4.3 Q**	**4.9 Q**	**1.4**	**1.4**	**2.6**	**2.4**	**2.6**	**2.3**	**2.0**	**2.0**
4,4'-DDE	ug/L	0.1	**< 1**	**< 1**	**< 1**	**< 2**	**< 1**	< 0.1	**< 1**	**< 1**	< 0.1	< 0.1	**< 2**	**< 2**	< 0.1	< 0.1	**< 0.4**	**< 0.4**
4,4'-DDD	ug/L	0.1	**0.28 J**	**0.28 J**	**< 2**	**0.52 J**	**0.1 J**	**0.1 J**	**0.25 J**	**0.25 J**	**0.13 J**	**0.16 J**	**< 2**	**< 2**	**0.21**	**0.20**	**< 4.0**	**< 4.0**
Metals (Total)																		
Arsenic	ug/L	50	7.9 J	6.7 J	13	13	10	6.5 B	15	18	8.7 B	8.5 B	24	22	1.8 B	1.5 B	2.1	2.7
Antimony	ug/L	6	10 U	10 U	10 U	10 U	10 U	10 U	4.7 B	3.8 B	10 U	10 U	0.49 J	0.42 J	0.27 J	0.27 J	10 U	10 U
Chromium	ug/L	100	2.2 J	3.0 J	2.7 J	2.5 J	6.9	4.2 B	2.9 B,J	2.9 B,J	2.3 B	2.2 B	38 J	38 J	< 2.0	< 2.0	5.8	4.6
Lead	ug/L	15	11	11	5.8	5.6	10	8.5	4.4 B	4.8 B	5.2 D	7.4 D	7.9	7	0.90 B,D	1.5 D	1.4	1.6
Mercury	ug/L	1	<0.20	.070 J	NA	NA	0.9 J	0.55 J	0.15 B	0.12 B	< 0.2	< 0.2	0.091 J	0.084 J	0.33	0.34	< 0.2	< 0.2
Nickel	ug/L	80	47	49	20 J	22 J	42	41	23 B	25 B	17 B	19 B	51	52	32	31	25	26
Thallium	ug/L	2.0	10 U				10 U		**4.1 B**		10 U		1.0 U		0.59 B	0.57 B	1 U	1 U

Parameter	Units	MCP GW-1 Standard	OHM-A7-8 Continued													
			10/03 QA dup	Apr-04	Apr-04 (dup)	Oct-04	Oct-04 (dup)	10/04 QA dup	Jun-05	Jun-05 (dup)	Jun-05 QA dup	Sep-05	Sep-05	Sep-05 QA dup		
Volatile Organic Compounds																
Chloroform	ug/L	5	< 1	< 1	< 1	< 1	< 1	< 2	< 1.0	< 1.0		1.0 U	1.0 U			
cis-1,3-dichloropropene	ug/L	0.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		**0.5**	0.5 U	1.0 U		
1,2- Dichloroethane	ug/L	5	< 1	< 1	< 1	< 1	< 1	< 2	< 1.0	< 1.0		1.0 U	1.0 U			
Naphthalene	ug/L	20	< 1	0.29 J,B	0.63 J,B	< 1	0.24 J	< 5	< 1.0	0.24 J		1.0 U	1.0 U			
1,1,2,2-Tetrachloroethane	ug/L	2	< 1	< 1	< 1	0.95 J	0.95 J	< 2	< 1.0	< 1.0		0.5	0.5 U			
Tetrachloroethene	ug/L	5	**24**	**21**	**21**	**13**	**13**	**19**	**8.7**	**9.0**	**10.9**	**25.4**	**27.4**	**20.0**		
Trichloroethene	ug/L	5	0.78 J	1.4	1.3	1.3	1.4	1.2 J	0.57 J	0.58 J	0.7 J	1.1	1.1	0.85 J		
Pesticides																
gamma-BHC (Lindane)	ug/L	0.2	**1.8**	**1.4**	**1.4**	**0.82 J**	**1.4 J**	**1.0**	**1.1**	**1.1**	**1.02**	**1.84**	**1.76**	**1.9**		
4,4'-DDE	ug/L	0.1	< 0.013	< 0.10	< 0.10	**0.17**	**0.17**	0.012 J	< 0.21	< 0.20	0.05 U	0.05 U	0.05 U			
4,4'-DDD	ug/L	0.1	**0.16**	**0.29**	**0.26**	**0.11 U**	**0.32 U**	**0.27**	< 0.21	< 0.20	0.09	**0.12**	**0.1**	0.42 U		
Metals (Total)																
Arsenic	ug/L	50.10	14 J	14	12	15 B	14 B	16	0.94 J	0.98	25 U	2.5 U	2.5 U	2.6		
Antimony	ug/L	6	**8.4 J**	1.5 J	1.4 J; (OA result **6.5 J**)	2.3 J	2.4 J	**9.63 J**	0.30 U	0.30 U		2.5 U	2.5 U			
Chromium	ug/L	100	6.7 J	33 J	35 J	6.5	6.6	8.27 J	0.66 U	0.74 U		10.0 U	10.0 U	1.5 J		
Lead	ug/L	15	5.3 J	9.5	8.8	9.3	8.5	8.2	1.5 U	1.5 U	3.7 J+	2.5 U	2.5 U	1.2 J		
Mercury	ug/L	1	0.12 J	0.32	0.36	0.10 UJ	0.10 UJ	0.072 J	0.61	0.60	0.5 U	0.5 U	0.5 U	0.17 J		
Nickel	ug/L	80	26	47	49	28.5	28.9	30.7 J	20.0 J	20.5 J	24	21.4	20.9	22.1		
Thallium	ug/L	2.0	5 U	0.35 B	0.36 B	0.11 J	0.10 U	5.0 U	0.28 J	0.10 U		1.0 U	1.0 U	1.0 U		

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

u: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

D: Greater than 20% RPD between field duplicates.

J: (also B in metals results)estimated value less than PQL or based on data evaluation of laboratory results

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex - Area of Concern A7
(SHEET 2 OF10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-9 3-Oct-91	25-Jun-92	5-Nov-92	2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds															
Chloroform	ug/L	5	ND	ND	ND	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
cis-1,3-dichloropropene	ug/L	0.5	NA	NA	NA	NA	NA	NA	NA	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	NA	NA	NA	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
Naphthalene	ug/L	20	ND	ND	ND	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2	ND	**16**	ND	0.51 u	0.51 u	0.5 u	0.5 u	<1	<1	<1	0.53 J	<1	<1
Tetrachloroethene	ug/L	5	ND	ND	ND	1.6 u	1.6 u	**31**	0.5 u	<1	<1	<1	<1	<1	<1
Trichloroethene	ug/L	5	ND	ND	ND	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	ND	ND	ND	0.05 u	0.05 u	<.2	<.2	<.2	<.2	<.2	<.2	<0.05	<0.05
Metals (Total)															
Arsenic	ug/L	50	ND	ND	ND	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10
Antimony	ug/L	6						5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	ND	ND	ND	NA	NA	<100	<100	<100	<100	<100	<100	<1.2 J	1.3 J
Lead	ug/L	15	ND	ND	4.35	NA	NA	<15	<15	<15	<15	<15	<15	<5	<5
Mercury	ug/L	1	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/L	80	-	-	-	-	-	-	25	< 10	1.3	3 J	13 J	< 40	3.7 J
Thallium	ug/L	2.0	-	-	-	-	-	-	2 U	10 U	1 U	10 U	10 U	10 U	10 U

Parameter	Units	MCP GW-1 Standard	OHM-A7-9 (*continued*) May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	May-05	Sep-05			
Volatile Organic Compounds															
Chloroform	ug/L	5	<1	<1	<1	0.27 J	1 U	1 U	1 U	1 U	1 U	1.0 U			
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1 U	1 UJ	1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U			
1,2- Dichloroethane	ug/L	5	<1	<1	<1	< 1	1 U	1 U	1 U	1 U	1 U	1.0 U			
Naphthalene	ug/L	20	1.5 J	<1	<1	0.34 J	1 U	1 U	1 U	1 U	0.78 U	1.0 UJ			
1,1,2,2-Tetrachloroethane	ug/L	2	<1	<1	<1	< 1	1 U	1 U	1 U	1 U	1 U	0.5 U			
Tetrachloroethene	ug/L	5	<1	<1	<1	< 1	1 U	1 U	1 U	1 U	1 U	1.0 U			
Trichloroethene	ug/L	5	<1	<1	<1	< 1	1 U	1 U	1 U	1 U	1 U	1.0 U			
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	<0.050	<0.050	<0.050	<0.050	0.050 U	0.050 U	0.050 U	0.055 U	0.052 U	0.05 U			
Metals (Total)															
Arsenic	ug/L	50; 10	6.5 B	9.6 B	< 10	< 2.0	2.0 U	2.0 U	2.0 U	0.10 U	0.10 U	2.5 U			
Antimony	ug/l	6	10 U	3.8 B	10 U	2 U	2 U	2.0 U	2.0 U	1.5 U	0.30 U	2.5 U			
Chromium	ug/L	100	5	1.3 B	1.3 B	3 J	2.5 J	4.3 J	2.8 J	1.0 J	0.35 UJ	10.0 U			
Lead	ug/L	15	<5	< 5	< 5	< 1.0	1.0 U	1.0 U	1.0 U	0.10 U	0.50 UJ	2.5 U			
Mercury	ug/L	1	<0.2	< 0.2	< 0.2	< 0.2	0.078 J	0.2 U	0.2 U	0.10 UJ	0.10 U	0.5 U			
Nickel	ug/L	80	4.4 J	2.5 J	< 40	3.7 J	0.99 B	2.8	1.3 B	1.1 J	0.50 UJ	10 U			
Thallium	ug/L	2.0	10 U	**3.3 B**	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U			

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

U: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

J: estimated value (based on data evaluation of laboratory results)

Table 6

Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex - Area of Concern A7
(SHEET 3 OF 10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-11												
			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
Volatile Organic Compounds															
Chloroform	ug/L	5	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-dichloropropene	ug/L	0.5	NA	NA	1 U	1 U	NA	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
1,2- Dichloroethane	ug/L	5	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	ug/L	20	0.9	2	1 U	1 U	1 U	1 U	1 U	0.92 J	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethan	ug/L	2	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	5	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	5	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	0.053 U	0.056 U	0.05 U	0.056 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Metals (Total)															
Arsenic	ug/L	50	10 U	10 U	5 U	2 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	1.0 J
Antimony	ug/L	6	5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U	10 U	3.8 B	10 U	2.0 U	2 U
Chromium	ug/L	100	20 U	20 U	8.7	1 U	5 U	5 U	5 U	5 U	10 U	5	3.7 J	2.3 U	3.9 J
Lead	ug/L	15	10 U	10 U	3 U	1 U	5 U	5 U	5 U	5 U	5.4 J	5 U	5 U	1.0 U	1.0 U
Mercury	ug/L	1	0.2 U	0.20 U	0.20 U	0.20 U	0.077 J	0.20 U	0.20 U	NA	5 U	0.055 B	0.2 U	0.2 U	0.094 J
Nickel	ug/L	80	20 U	36	20 U	10 U	40 U	40 U	1.7 J	40 U	0.2 U	40 U	1.9 J	2 U	1.4 J
Thallium	ug/L	2.0	-	2 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	**4.3 B**	10 U	1.0 U	1.0 U

Parameter	Units	MCP GW-1 Standard	OHM-A7-11 (continued)												
			Oct-03	Apr-04	Oct-04	May-05	Sep-05								
Volatile Organic Compounds															
Chloroform	ug/L	5	1.0 U	1 U	1.0 U	1.0 U	1.0 U								
cis-1,3-dichloropropene	ug/L	0.5	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U								
1,2- Dichloroethane	ug/L	5	1.0 U	1 U	1.0 U	1.0 U	1.0 U								
Naphthalene	ug/L	20	1.0 U	1 U	1.0 U	1.0 U	1.0 U								
1,1,2,2-Tetrachloroethan	ug/L	2	1.0 U	1 U	1.0 U	1.0 U	0.5 U								
Tetrachloroethene	ug/L	5	1.0 U	1 U	1.0 U	1.0 U	1.0 U								
Trichloroethene	ug/L	5	1.0 U	1 U	1.0 U	1.0 U	1.0 U								
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	0.050 U	0.050 U	0.051 U	0.35 J	0.05 U								
Metals (Total)															
Arsenic	ug/L	50; 10	2.0 U	2.0 U	1.7 J	0.35 J	2.5 U								
Antimony	ug/L	6	2.0 U	2.0 U	1.7 J	0.30 U	2.5 U								
Chromium	ug/L	100	2.0 U	1.4 U	0.49 J	0.57 U	10.0 U								
Lead	ug/L	15	1.0 U	0.26 J	0.10 U	0.65 U	2.5 U								
Mercury	ug/L	1	0.20 U	0.20 U	0.10 U	0.10 U	0.5 U								
Nickel	ug/L	80	2.0 U	2.0 U	0.33 J	0.50 U	10.0 U								
Thallium	ug/L	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U								

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

U: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

J: *estimated value (based on data evaluation of laboratory results)*

Table 6

Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex - Area of Concern A7
(SHEET 4 OF 10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-12												
			3-Oct-91	25-Jun-92	4-Nov-92	2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds															
Chloroform	ug/L	5	ND	ND	ND	3.2	0.96	<5	<5	<5	<5	<5	<5	<1	<1
cis-1,3-dichloropropene	ug/L	0.5						NA	NA	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	NA	NA	NA	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
Naphthalene	ug/L	20	ND	ND	ND	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2	ND	ND	ND	0.51 u	0.51 u	<2	<2	<2	<2	<2	<2	<1	<1
Tetrachloroethene	ug/L	5	ND	ND	ND	1.6 u	1.6 u	<5	<5	<5	<5	<5	<5	<1	<1
Trichloroethene	ug/L	5	ND	ND	ND	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	ND	ND	ND	0.05 u	0.05 u	<.2	<.2	<.2	<.2	<.2	<.2	<0.05	<0.05
Metals (Total)															
Arsenic	ug/L	50	ND	ND	ND	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10
Antimony	ug/L	6						5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	ND	ND	ND	NA	NA	<100	<100	<100	<100	<100	<100	1.0 J	<5
Lead	ug/L	15	6.99	**18.7**	4.26	NA	NA	10 u	**17**	3 u	1 u	5 u	5 u	<5	<5
Mercury	ug/L	1	ND	ND	ND	NA	NA	<1	<1	<1	<1	<1	<1	<0.20	NA
Nickel	ug/L	1							36	< 10	4.4	1.8 J	3 J	< 40	1.6 J
Thallium	ug/L	2.0							2 U	10 U	1 U	10 U	10 U	10 U	10 U

Parameter	Units	MCP GW-1 Standard	OHM-A7-12 - continued												
			May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	May-05	Sep-05			
Volatile Organic Compounds															
Chloroform	ug/L	5	<1	<1	<1	< 1	< 1	< 1	< 1	1 U	1.0 U	1.0 U			
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U			
1,2- Dichloroethane	ug/L	5	<1	<1	<1	<1	<1	<1	<1	1 U	1.0 U	1.0 U			
Naphthalene	ug/L	20	<1	<1	<1	<1	<1	<1	<1	1 U	1.0 U	1.0 U			
1,1,2,2-Tetrachloroethane	ug/L	2	<1	<1	<1	<1	<1	<1	<1	1 U	1.0 U	1.0 U			
Tetrachloroethene	ug/L	5	<1	<1	<1	<1	<1	<1	<1	1 U	1.0 U	1.0 U			
Trichloroethene	ug/L	5	<1	<1	< 1	< 1	< 1	< 1	< 1	1.0 U	1.0 U	1.0 U			
Pesticides															
gamma-BHC (Lindane)	ug/L	0.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.051 U	0.051 U	0.05 U			
Metals (Total)															
Arsenic	ug/L	50; 10	<10	<10	<10	< 2.0	< 2.0	< 2.0	< 2.0	0.10 U	0.10 U	2.5 U			
Antimony	ug/L	6	4.3 B	3.6 B	2.5 B	2 U	2 U	1.1 B	2.0 U	1.3 J	0.30 U	2.5 U			
Chromium	ug/L	100	42	6.6	7.7	2.3 J	3.4 J	2	3.1 J	1.7 J	0.47 U	10.0 U			
Lead	ug/L	15	<5	<5	<5	< 1	< 1	0.098 J	< 1	0.10 U	0.67 U	2.5 U			
Mercury	ug/L	1	<0.2	< 0.2	< 0.2	< 0.2	0.069 J	< 0.2	< 0.2	0.10 UJ	0.10 U	10.0 U			
Nickel	ug/L	1	43	4.8 J	5.5 J	2.8 J	1.4 J	2	0.92 J	2.0 J	0.50 U	10.0 U			
Thallium	ug/L	2.0	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.1 U	0.10 U	1.0 U			

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

U: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

J: estimated value (based on data evaluation of laboratory results)

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 5 OF 10)

		MCP GW-1	OHM-A7-46											
Parameter	**Units**	**Standard**	25-Jun-92	5-Nov-92	1-Dec-93	Apr-97	Apr-97(dup)	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds														
Chloroform	ug/L	5	ND	ND	NA	<5	<5	<5	<5	<5	<5	<5	<1	<1 J
cis-1,3-dichloropropene	ug/L	0.5				NA	NA	NA	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	NA	NA	NA	<5	<5	<5	<5	<5	<5	<5	<1	<1 J
Naphthalene	ug/L	20	ND	NA	NA	<20	<20	<20	<20	<20	<20	<20	<1	<1 J
1,1,2,2-Tetrachloroethane	ug/L	2	ND	ND	NA	<2	<2	<2	<2	<2	<2	<2	<1	<1 J
Tetrachloroethene	ug/L	5	**12**	**5.1**	NA	0.5	0.7	1	1 u	1 u	1 u	0.44 J	<1	.44 J
Trichloroethene	ug/L	5	ND	ND	NA	<5	<5	<5	<5	<5	<5	<5	<1	<1 J
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	**2.8**	NA	**3.1**	0.051 u	0.058 u	0.09	**0.48**	0.14	0.15	0.07	048 J	.031 J
Metals (Total)														
Arsenic	ug/L	50	ND	NA	NA	**64.1**	**67.3**	NA	5 u	2.8	10 u	10 u	<10	<10
Antimony	ug/L	6				5 U	5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	ND	NA	NA	<100	<100	NA	<100	<100	<100	<100	2 J	5
Lead	ug/L	15	2.68	NA	NA	<15	<15	NA	<15	<15	<15	<15	<5	<5
Mercury	ug/L	1	ND	NA	NA	<1	<1	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/L	80							24	15	10 J	6.5 J	7.4 J	4.4 J
Thallium	ug/L	2.0						NA	10 U	1 U	10 U	10 U	10 U	10 U
Zinc	ug/L	900	-	-	-	10 u	11	NA	320	**1,100**	390	16 J	5.7 J	2.9 J

		MCP GW-1	OHM-A7-46											
Parameter	**Units**	**Standard**	May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Jun-05	Sep-05		
Volatile Organic Compounds														
Chloroform	ug/L	5	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	1.0 U		
cis-1,3-dichloropropene	ug/L	0.5	1 U	NA	1 U	No sample	1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U		
1,2- Dichloroethane	ug/L	5	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	1.0 U		
Naphthalene	ug/L	20	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	1.0 U		
1,1,2,2-Tetrachloroethane	ug/L	2	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	0.5 U		
Tetrachloroethene	ug/L	5	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	1.0 U		
Trichloroethene	ug/L	5	< 1	NA	< 1	No sample	< 1	< 1	< 1	1 U	1.0 U	1.0 U		
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	< 0.06	NA	0.027 J	No sample	0.018 J	< 0.050	< 0.050	0.052 U	0.051 U	0.05 U		
Metals (Total)														
Arsenic	ug/L	50; 10	< 10	NA	< 10	No sample	< 2.0	< 2.0	1.1 B	0.87 J	1.5 J	2.5 U		
Antimony	ug/L	6	3 B	NA	10 U	No sample	0.065 B	2.0 U	0.047 J	1.5 J	0.30 U	2.5 U		
Chromium	ug/L	100	2.6 B	NA	23	No sample	160 J	3.1	2.5 J	1.8 J	1.2 J	10.0 U		
Lead	ug/L	15	< 5	NA	< 5	No sample	0.26 J	< 1.0	0.22 B	0.56 J	0.55 U	2.5 U		
Mercury	ug/L	1	0.058 B	NA	< 0.2	No sample	< 0.2	< 0.2	< 0.2	0.10 UJ	0.98	0.5 U		
Nickel	ug/L	80	8.2 J	NA	32 J	No sample	**140**	7.5	12	5.2 J	4.0 J	10.0 U		
Thallium	ug/L	2.0	10 U	NA	10 U	No sample	1.0 U	1.0 U	1.0 U	0.17 J	0.1 U	1.0 U		
Zinc	ug/L	900	6.8 B,J	NA	6.3 J	No sample	< 5.0	4.9 J	9.0 J	1.9 J	4.2 UJ	25.0 U		

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

u: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

blank: below MCP RCGW-1 for 1997, 1998, and 1999 Monitoring Data (with no previous exceedances)

B: Analyte was also present in equipment blank at a reportable level.

J: estimated value less than PQL or based on data evaluation of laboratory results.

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 6 OF 10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-51										
			1-Dec-93	2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds													
Chloroform	ug/L	5	**120**	**100**	**54**	**13**	**8**	4.2	2.2	2.3 B	3.2	1.6	<1.1
cis-1,3-dichloropropene	ug/L	0.5	-			NA	NA	1 U	1 U	NA	NA	NA	NA
Dibromochloromethane	ug/L	5	-	-	-	0.5 u	0.5 u	**20**	1 u	1 u	1 u	<1	<1
1,2- Dichloroethane	ug/L	5	NA	0.5 u	1.7	<5	<5	<5	<5	<5	<5	<1	<1
Naphthalene	ug/L	20	ND	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1
1,1,2,2-Tetrachloroethar	ug/L	2	**200**	**66**	**85**	**34**	**29**	**11**	**9**	**6.5**	**19**	**7.7**	**4.9**
Tetrachloroethene	ug/L	5	**130**	**72**	**65**	**26**	**20**	**7.3**	**8.4**	**7.9**	**13**	**8.3**	**6.8**
Trichloroethene	ug/L	5	**50**	**15**	**34**	**12**	**10**	4.1	3.8	3	4.4	2.6	2.7
Pesticides													
gamma-BHC (Lindane)	ug/L	0.2	**3.5**	0.147	1	0.17	0.17	**0.27**	**0.59**	**0.29**	**0.42**	**0.25**	**0.37**
Metals (Total)													
Arsenic	ug/L	50	NA	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10
Antimony	ug/L	6				5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	NA	NA	NA	<100	<100	<100	<100	<100	<100	<5	<5
Lead	ug/L	15	NA	NA	NA	<15	<15	<15	<15	**18**	<15	<5	<5
Mercury	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/L	80					< 20	< 10	4.6	4.4 J	4.1 J	4.5 J	5.2
Thallium	ug/L	2.0					*2 U*	*10 U*	*1 U*	**3.5 J**	*10 U*	*10 U*	*10 U*

Parameter	Units	MCP GW-1 Standard	OHM-A7-51									
			May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Jun-05	Sep-05
Volatile Organic Compounds												
Chloroform	ug/L	5	<1	0.90 J	< 1	< 1	0.45 J	< 1	0.58 J	0.39 J	0.25 U	1.0 U
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U
Dibromochloromethane	ug/L	5	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1.0	1.0 U	1.0 U
1,2- Dichloroethane	ug/L	5	<1	<1	< 1	< 1	< 1	< 1	< 1	<1	1.0 U	1.0 U
Naphthalene	ug/L	20	<1	0.95 J	< 1	< 1	< 1	< 1	< 1	<1	1.0 U	1.0 U
1,1,2,2-Tetrachloroethar	ug/L	2	<1	**6.0**	< 1	**6.1**	**4.8**	**2.4 J**	**2.7**	**4.4**	**2**	1.4
Tetrachloroethene	ug/L	5	2.1 J	**6.5**	**6.3**	**7.8**	**6.4**	**5.8 J**	4.6	4.0	3.1	3.8
Trichloroethene	ug/L	5	0.82 J	1.9	2.0	2.7	1.6	1.3 J	0.85 J	1.4	0.99 J	1.3
Pesticides												
gamma-BHC (Lindane)	ug/L	0.2	0.078	**0.35**	0.13	0.19	**0.21**	0.18	0.11	0.17	0.084	0.10
Metals (Total)												
Arsenic	ug/L	50; 10	<10	<10	< 10	< 2	< 2	< 2	< 2	0.39 J	0.10 U	2.5 U
Antimony	ug/L	6	10 U	10 U	10 U	0.037 J	2 U	2.0 U	2.0 U	1.4 J	0.30 U	2.5 U
Chromium	ug/L	100	4.5 B	4.5 B	1.2 B	2.8 J	2.3 J	2.5 J	2.2 J	.66 J	0.29 U	10.0 U
Lead	ug/L	15	<5	<5	< 5	0.074 J	< 1.0	< 1.0	< 1.0	< 0.10	0.55 U	2.5 U
Mercury	ug/L	1	0.056 B	0.056 B	< 0.02	< 0.20	< 0.20	< 0.20	< 0.20	< 0.10	0.10 U	0.5 U
Nickel	ug/L	80	2.3 J	5.3 J	2.7 J	7	4.6	4.2	3.8	4.2 J	2.0 J	10.0 U
Thallium	ug/L	2.0	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

U: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

B. Analyte was also present in equipment blank sample at a reportable level.

J: estimated value (based on data evaluation of laboratory results).

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 7 OF 10)

Parameter	Units	MCP GW-1 Standard	OHM-A7-52										
			1-Dec-93	2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds													
Chloroform	ug/L	5	NA	3	4.4	<5	<5	<5	<5	<5	<5	<1	<1
cis-1,3-dichloropropene	ug/L	0.5				NA	NA	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	NA	3.6	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1
Naphthalene	ug/L	20	NA	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2	NA	**9.7**	**17**	**9**	**14**	**3.6**	**4.2**	1.4	**3.4**	**2.1**	**2.8**
Tetrachloroethene	ug/L	5	NA	**5.6**	**7.9**	5	**9**	4.6	4.1	2.2	3.8	3.2	3.6
Trichloroethene	ug/L	5	NA	**8.9**	3.1	**6**	**14**	2.5	1.8	1.1	1.1	1.7	1.9
Pesticides													
gamma-BHC (Lindane)	ug/L	0.2	0.0669	0.085	0.14	0.1	0.086	0.15	0.085	0.092	0.1	0.095	0.11
Metals (Total)													
Arsenic	ug/L	50	NA	NA	NA	<50	<50	<50	<50	<50	<50	<5	<10
Antimony	ug/L	6				5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	NA	NA	NA	**112**	41	5 u	2.2	5 u	5 u	<5	0.91 J
Lead	ug/L	15	NA	NA	NA	**31.1**	10 u	3 u	1 u	5 u	5 u	<5	<5
Mercury	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	ug/L	80	NA	NA	NA	NA	23	< 10	2.8	1.5 J	1.2 J	1.6 J	2 J
Thallium	ug/L	2.0					2 U	10 U	1 U	**3.5 J**	10 U	10 U	10 U

Parameter	Units	MCP GW-1 Standard	OHM-A7-52 continued										
			May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	Jun-05	Sep-05	
Volatile Organic Compounds													
Chloroform	ug/L	5	0.78 J	<1	0.24 J	< 1	0.15 J	< 1	< 1	< 1	1.0 U	NA	
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	
1,2- Dichloroethane	ug/L	5	<1	1.1	<1	< 1	< 1	< 1	< 1	<1	1.0 U	NA	
Naphthalene	ug/L	20	<1	<1	< 1	0.21 J	< 1	< 1	< 1	<1	1.0 U	NA	
1,1,2,2-Tetrachloroethane	ug/L	2	**52 J**	<1	< 1	1.4	1.2	1.2 J	0.73 J	0.58 J	1.0 U	NA	
Tetrachloroethene	ug/L	5	**6.1 J**	**6.7**	2.4	2.5	2.4	2.2 J	1.9	0.86 J	0.54 J	NA	
Trichloroethene	ug/L	5	1.6 J	**9.6**	0.85 J	0.34 J	1.5	< 1	0.75 J	< 1	1.0 U	NA	
Pesticides													
gamma-BHC (Lindane)	ug/L	0.2	<0.05	<0.05	0.054	0.097	0.045	0.029 J	<0.05	< 0.053	0.051 U	NA	
Metals (Total)													
Arsenic	ug/L	50; 10	<10	<10	< 10	< 2	< 2	< 2	< 2	< 0.10	0.10 U	NA	
Antimony	ug/L	6	10 U	2.7 B	10 U	2 U	2 U	2.0 U	2.0 U	1.4 J	0.30 U	NA	
Chromium	ug/L	100	1.3 J	1.3 B	1.6 B	2.3 J	4.0 J	2.2 J	2.2 J	1.1 J	0.64 U	NA	
Lead	ug/L	15	<5	<5	< 5	< 1	0.070 J	< 1	< 1	< 0.10	0.57 U	NA	
Mercury	ug/L	1	<0.2	<0 2	< 0 2	< 0 2	0 069 J	< 0.2	< 0.2	< 0.10	0.10 U	NA	
Nickel	ug/L	80	5.8 J	< 40	1.8 J	< 2.0	2.1	1.1 J	1.1 B	1.4 J	0.50 U	NA	
Thallium	ug/L	2.0	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	

Notes:
Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.
Shaded area with bold numbers indicate MCP GW-1 exceedance
u or U: analyte not detected at or above reporting limit
ND: not detected
NA: not analyzed
B: analyte is also present in equipment bank sample (organics) or lab blank (metals)
J: Estimated values less than the PQL or based on data evaluation of laboratory results.
September 2005 Results: Well not included in sampling regimen from September 2005

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 8 OF 10)

Parameter	Units	MCP GW-1 Standard	JO-A07-M61									
			2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00
Volatile Organic Compounds												
Chloroform	ug/L	5	**15**	**6.5**	0.8	**6**	1 u J	1 u	1.1 B	0.77 J	<1	<1
cis-1,3-dichloropropene	ug/L	0.5			NA	NA	1 U	1 U	NA	NA	NA	NA
1,2- Dichloroethane	ug/L	5	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	**5.3**
Naphthalene	ug/L	20	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2	**16**	**20**	**3**	**21**	1 J	1.6	**2.3**	**2.2**	**1**	**2.6**
Tetrachloroethene	ug/L	5	**9.1**	**13**	2	**12**	1.1 J	3.1	3.5	3	1.5	3.6
Trichloroethene	ug/L	5	2.2	2.6	<5	<5	<5	<5	<5	<5	<1	.47 J
Pesticides												
gamma-BHC (Lindane)	ug/L	0.2	**0.326**	**0.26**	0.13	**0.26**	0.05 u	0.13	0.08	0.16	0.066	0.16
Metals (Total)												
Arsenic	ug/L	50	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10
Antimony	ug/L	6			5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	NA	NA	<100	<100	<100	<100	<100	<100	<5	0.91 J
Lead	ug/L	15	NA	NA	<15	<15	<15	<15	<15	<15	<5	<5
Mercury	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	<0.20	NA
Nickel	ug/L	80	NA	NA	NA	< 20	27	3.8	2.8 J	5 J	< 40	2.2 J
Thallium	ug/L	2.0					2 U	10 U	1 U	10 U	10 U	10 U

Parameter	Units	MCP GW-1 Standard	JO-A07-M61 continued									
			May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	May-05	Sep-05
Volatile Organic Compounds												
Chloroform	ug/L	5	< 1	NA	0.51 J	NA	0.19 J	< 1	0.20 J	1.0 U	1.0 U	NA
cis-1,3-dichloropropene	ug/L	0.5	1 U	NA	1 U	NA	1 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
1,2- Dichloroethane	ug/L	5	< 1	NA	< 1	NA	< 1	< 1	1.0 U	1.0 U	1.0 U	NA
Naphthalene	ug/L	20	< 1	NA	< 1	NA	< 1	< 1	1.0 U	1.0 U	1.0 U	NA
1,1,2,2-Tetrachloroethane	ug/L	2	1.2	NA	0.97 J	NA	< 1	< 1	0.58 J	0.95 J	0.28 J	NA
Tetrachloroethene	ug/L	5	1.2	NA	1.6	NA	0.70 J	1.6	1.5	1.2	0.90 J	NA
Trichloroethene	ug/L	5	< 1	NA	< 1	NA	< 1	< 1	1.0 U	1.0 U	1.0 U	NA
Pesticides												
gamma-BHC (Lindane)	ug/L	0.2	0.16	NA	0.052	NA	0.022 J	0.037 J	0.050 U	0.051 U	0.051 U	NA
Metals (Total)												
Arsenic	ug/L	50; 10	< 10	NA	< 10	NA	< 2.0	< 2.0	2.0 U	0.10 U	0.35 J	NA
Antimony	ug/L	6	3.1 B	NA	2.6 B	NA	2 U	0.078 B	2.0 U	1.4 J	0.30 U	NA
Chromium	ug/L	100	4.3 B	NA	1.5 B	NA	< 2.0	3.9	2.9 J	0.88 J	33.8	NA
Lead	ug/L	15	< 5	NA	< 5	NA	< 1.0	0.15 J	0.095 B	0.10 U	0.78 U	NA
Mercury	ug/L	1	< 0.2	NA	< 0.2	NA	< 0.20	< 0.20	0.20 U	0.10 U	0.10 U	NA
Nickel	ug/L	80	4.1 B	NA	< 40	NA	1.3 B	4	1.0 B,J	1.1 J	17.1 J	NA
Thallium	ug/L	2.0	10 U	10 U	NS	**5 B**	NS	1.0 U	1.0 U	1.0 U	1.0 U	NA

Notes:
Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.
Shaded area with bold numbers indicate MCP GW-1 exceedance
u or U: analyte not detected at or above reporting limit
J: Estimated values less than the PQL or based on data evaluation of laboratory results.
ND: not detected
NA: not analyzed
blank: below MCP RCGW-1 for 1997, 1998, 1999 and 2000 Monitoring Data (with no previous exceedances)
B: analyte is also present in equipment blank sample
September 2005 Results: Well not included in sampling regimen from September 2005

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 9 OF 10)

Parameter	Units	MCP GW-1 Standard	JO-A07-M62											
			2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	May-01	Oct-01
Volatile Organic Compounds														
Chloroform	ug/L	5	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1
cis-1,3-dichloropropene	ug/L	0.5			NA	NA	1 U	1 U	NA	NA	NA	NA	1 U	1 U
1,2- Dichloroethane	ug/L	5	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1
Naphthalene	ug/L	20	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	ug/L	2	0.51 u	0.51 u	<2	<2	<2	<2	<2	<2	<1	<1	<1	<1
Tetrachloroethene	ug/L	5	1.6 u	1.6 u	<5	<5	<5	<5	<5	<5	<1	40 J	<1	<1
Trichloroethene	ug/L	5	0.5 u	0.5 u	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	0.5 u	0.5 u	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.050	**0.84**	< 0.050	< 0.050
Metals (Total)														
Arsenic	ug/L	50	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10	<10	<10
Antimony	ug/L	6			5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U	10 U	10 U
Chromium	ug/L	100	NA	NA	<100	<100	<100	<100	<100	<100	1.5 J	1.8 J	12	3.1 B
Lead	ug/L	15	NA	NA	**27.4**	10 u	3.1	1 u	5 u	5 u	<5	<5	<5	<5
Mercury	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	<0.20	NA	<0.20	<0.2
Nickel	ug/L	80	NA	NA	NA	< 20	18	1.6	1.8 J	< 40	< 40	4.2 J	14 B	6.3 B
Thallium	ug/L	2.0	NA			2 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	**3.3 B**
Iron	ug/L	no standard	NA	NA	NA	2700	610	< 100	< 100	< 100	< 100	900	510	270
Anions														
Sulfate	ug/L	no standard	NA	NA	NA	23,400	20,800	27,600	21,600	25,800	16,100	22,300	15,800	23,800
pH (std units)		no standard	NA	NA	NA	NA	3.87	5.56	5.44	5.60	5.69	5.63		5.09

Parameter	Units	MCP GW-1 Standard	JO-A07-M62											
			Apr-02	Oct-02	Apr-03	Apr-03 dup (TAL only)	Oct-03	Apr-04	Oct-04	May-05	Sep-05			
Volatile Organic Compounds														
Chloroform	ug/L	5	1 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
1,2- Dichloroethane	ug/L	5	1 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
Naphthalene	ug/L	20	0.28 J,B	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
1,1,2,2-Tetrachloroethane	ug/L	2	1 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
Tetrachloroethene	ug/L	5	1 U	1.3	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
Trichloroethene	ug/L	5	1 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA			
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	0.050 U	0.050 U	0.050 U	NA	0.050 U	0.050 U	0.051 U	0.053 U	NA			
Metals (Total)														
Arsenic	ug/L	50; 10	10 U	1.2 J	2.0 U	2.0 U	0.88 J	2.0 U	0.20 J	0.10 U	NA			
Antimony	ug/L	6	10 U	0.38 J	0.040 B	0.049 B	0.057 B	2.0 U	1.4 J	0.30 U	2.5 U			
Chromium	ug/L	100	1.2 B	**180**	76 J	77 J	1.2 J	3.6 J	1.6 J	0.45 U	NA			
Lead	ug/L	15	5 U	3	0.15 J	0.16 J	0.082 J	0.14 B	0.10 U	0.57 U	NA			
Mercury	ug/L	1	0.2 U	0.2 U	0.076 J	0.078 J	0.2 U	0.20 U	0.10 U	0.10 U	NA			
Nickel	ug/L	80	40 U	**170**	71	68	3.5	1.8 B,J	2.0 J	0.50 U	NA			
Thallium	ug/L	2.0	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA			
Iron	ug/L		32 J	1,500	480	470	660	31 B	53.9 J	37.9 U	NA			
Anions														
Sulfate	ug/L	no standard	19,000	11,400	10,300	NA	19,600	12,000	19,000 J	14,400	NA			
pH (std units)		no standard	5.72	5.52	5.78	5.78	5.69	5.70	5.62	5.66	NA			

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

u: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed; in September 2005 this was because of low groundwater and low expected recharge rate.

J: estimated value (based on data evaluation of laboratory results).

B: analyte is also present in equipment blank sample (inorganics) or lab blank (metals)

Table 6
Contaminants of Concern Summary of Analytical Results by Well
Sudbury Training Annex- Area of Concern A7
(SHEET 10 OF 10)

Parameter	Units	MCP GW-1 Standard	JO-A07-M63											
			2-Jul-96	10-Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	May-01	Oct-01
Volatile Organic Compounds														
Chloroform	ug/L	5	**13**	1.1	3	0.6	2.8 J	2.5	1.5 B	1.4	1.4	<1	<1	<1
cis-1,3-dichloropropene	ug/L	0.5			NA	NA	1 U	1 U	NA	NA	NA	NA	1 U	1 U
1,2- Dichloroethane	ug/L	5	3.4	**5.6**	**6**	**6**	**6.7 J**	**5.9**	**6.7**	4.6	2.7	**5.3**	1	3.6
Naphthalene	ug/L	20	NA	NA	<20	<20	<20	<20	<20	<20	<1	<1	2.1	2.1
1,1,2,2-Tetrachloroethane	ug/L	2	**13**	**21**	**24**	**26**	**20 J**	**31**	**23**	**22**	**12**	**20**	**12**	**14**
Tetrachloroethene	ug/L	5	**14**	**14**	**28**	**21**	**28 J**	**32**	**30**	**24**	**17**	**25**	**40**	**16**
Trichloroethene	ug/L	5	**10**	**15**	**24**	**25**	1 UJ	**36**	**36**	**30**	**21**	**37**	**17**	**29**
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	0.0565	0.0979	0.1	**0.31**	0.17	**0.38**	**0.32**	**0.33**	**0.22**	<0.050	**0.25**	**0.31**
Metals (Total)														
Arsenic	ug/L	50	NA	NA	<50	<50	<50	<50	<50	<50	<10	<10	< 10	<10
Antimony	ug/L	6			5 U	NA	5 U	2 U	10 U	10 U	10 U	10 U	2.7 B	10 U
Cadmium	ug/L	5	NA	NA	10 U	10 U	2 U	1 U	5 U	5 U	5 U	0.55 J	3.2 B	2.0 B
Chromium	ug/L	100	NA	NA	<100	<100	<100	<100	<100	<100	2.6 J	2.3 J	3.2 B	5.6
Lead	ug/L	15	NA	NA	<15	<15	<15	<15	<15	<15	1.9 J	<0.050	< 5	<5
Mercury	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	<0.20	NA	< 0.2	0.074 B
Nickel	ug/L	80	NA	NA	NA	< 20	15	4.4	4.6 J	2.6 J	2.7 J	3.2 J	4 B	4.5 B
Thallium	ug/L	2.0	NA			2 U	10 U	1 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	ug/L		NA	NA	NA	26,300	9,500	9,900	8,500	20,100	9,600	13,000	10,500	7,600

Parameter	Units	MCP GW-1 Standard	JO-A07-M63											
			Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04	May-05	Sep-05				
Volatile Organic Compounds														
Chloroform	ug/L	5	1.8 J	1 U	0.25 J	1 U	0.34 J	1 U	0.40 UJ	1.6 UJ				
cis-1,3-dichloropropene	ug/L	0.5	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U				
1,2- Dichloroethane	ug/L	5	4.4	3.1	0.54 J	1.1	1.5	0.86 J	0.31 J	2.5				
Naphthalene	ug/L	20	2 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U				
1,1,2,2-Tetrachloroethane	ug/L	2	**20**	**13**	**5.1**	**3.8**	**4.8**	1.8	**2.0**	**4.1**				
Tetrachloroethene	ug/L	5	**23**	**14**	1.9	3.0	2.9	0.62 J	1.5	**11.6**				
Trichloroethene	ug/L	5	**40**	**33**	**5.9**	**11**	**17**	**9.3**	3.8	**25.4**				
Pesticides														
gamma-BHC (Lindane)	ug/L	0.2	**0.25**	**0.24**	0.12	0.041 J	0.050 U	0.10	0.059	0.17				
Metals (Total)														
Arsenic	ug/L	50; 10	5.9 B	6.2	1.5 J	1.1 J	0.99 B	4.1	0.17 J	3.9				
Antimony	ug/L	6	10 U	0.13 J	0.042 B	0.079 B	0.13 B	1.5 J	0.30 U	2.5 U				
Cadmium	ug/L	5	5 U	1.2	0.95 B	0.80 B	1.7	1.3 J	**7.3**	2.5 U				
Chromium	ug/L	100	3.4 B	7.6 J	18	9.7	4.3 J	12.5	1.3 J+	10.0 U				
Lead	ug/L	15	5 U	2	1.4	0.46 J	2.7	3.4	0.62 UJ	2.5 U				
Mercury	ug/L	1	0.2 U	0.2 U	0.20 U	0.067 J	0.20 U	0.10 U	0.10 U	0.5 U				
Nickel	ug/L	80	3 B	6.7	15	10	4.9 J	6.4 J	2.3 J	10.0 U				
Thallium	ug/L	2.0	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Iron	ug/L		14,500	29,300	4,500	18,400	15,800	35,400	4,490	20,700				

Notes:

Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Shaded area with bold numbers indicate MCP GW-1 exceedance

U: analyte not detected at or above reporting limit

ND: not detected

NA: not analyzed

J: estimated value (based on data evaluation of laboratory results).

B: analyte is also present in equipment blank sample (inorganics) or lab blank (metals).

UJ (May 2005, VOCs): Analytes tentatively not detected at reported concentration due to blank concentration or reporting limit is estimated due to low recovery.

J+ (May 2005, metals): Value may be biased high based on blank contamination.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte
Page 1 of 6: Lindane (gamma BHC)

Lindane (BHC gamma) ppb

MCP GW-1 Standard = 0.2 ppb

Date	Well Number							Sampled by:
	A7-8	A7-46	A7-51	A7-52	A7-61	A7-62	A7-63	
Jun-92	**1.1**	**2.8**	----	----	----	----	----	OHM
Dec-93	**0.49**	**3.1**	**3.5**	0.07	----	----	----	OHM
Jul-96	**0.54**	**	0.15	0.08	**0.33**	<0.05	0.06	ABB-ES
Oct-96	**2.8**	**	**1.0**	0.14	**0.28**	<0.05	0.10	ABB-ES
Apr-97	**17.0**	<0.05	0.17	0.10	0.13	<0.05	0.10	Weston
Oct-97	<0.05	0.09	0.17	0.09	**0.26**	<0.05	**0.31**	Weston
Apr-98	**16.0**	**0.48**	**0.27**	0.15	<0.05	<0.05	0.17	NAE
Oct-98	**13.0**	0.14	**0.59**	0.09	0.13	<0.05	**0.38**	NAE
Apr-99	**12.0**	0.15	**0.29**	0.09	0.08	<0.05	**0.32**	NAE
Oct-99	**6.7**	0.07	**0.42**	0.1	0.16	<0.05	**0.33**	NAE
Apr-00	**9.6**	<0.05	**0.25**	0.095	0.066	<0.05	**0.066**	NAE
Oct-00	**5.1**	.031 J	**0.37**	0.11	0.16	**0.84**	ND	NAE
May-01	**7; 6.6**	<0.06	0.078	**0.26**	0.16	<0.05	**0.25**	Weston
Oct-01	**4.3; 4.9**	**NA**	**0.35**	<0.05	NA	<0.05	**0.31**	NAE
Apr-02	**1.4; 1.4**	0.027 J	0.13	0.054	0.052	< 0.05	**0.25**	NAE
Oct-02	**2.6; 2.4**	NA	0.19	0.097	NA	< 0.05	**0.24**	NAE
Apr-03	**2.6; 2.3**	0.018 J	**0.21**	0.045	0.022 J	< 0.05	0.12	NAE
Oct-03	**2.0;2.0;1.8**	< 0.050	0.18	0.029 J	0.037 J	< 0.05	0.041 J	NAE
Apr-04	**1.4; 1.4**	< 0.050	0.11	< 0.050	< 0.050	< 0.050	< 0.050	NAE
Oct-04	**0.82 J; 1.4 J; 1.0**	< 0.052	0.17	< 0.053	< 0.051	< 0.051	0.10	NAE
Jun-05	**1.1; 1.1**	< 0.051	0.084	< 0.051	< 0.051	< 0.053	0.06	NAE
Sep-05	**1.84; 1.76; 1.02**	0.05 U	0.10	NA	NA	NA	0.17	NAE

Legend

---- Wells not installed at the time of sampling
ND Not detected
NA Not analyzed
** With regulatory consent, A7-46 was assumed to be similar to A7-8; Sampling goal was to look at possible offsite migration

Shaded blocks indicate MCP exceedances

J - Estimated result. Result is less than RL.
E - Estimated result. Result concentration exceeds the calibration range.
"Double-entry" used for sample-and-duplicate results.
"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte

4,4'-DDD ppb

MCP GW-1 Standard = 0.1 ppb

Date	Well Number							Sampled by:
	A7-08	A7-46	A7-51	A7-52	A7-61	A7-62	A7-63	
Oct-97	**0.35; 0.48**	< 0.11	< 0.11	< 0.11	<0.1	<0.1	< 0.11	Weston
Apr-98	**< 5.0**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-98	**< 5.6**	< 0.12	< 0.11	< 0.11	< 0.12	< 0.11	< 0.12	NAE
Apr-99	**0.3 J; 0.29 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-99	**< 5.0**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Apr-00	**0.28 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-00	**0.52 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
May-01	**0.86 J; 0.63 J**	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	Weston
Oct-01	**0.25 J**	**NA**	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	NAE
Apr-02	**0.13 J; 0.16 J**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-02	**< 2**	NA	<0.1	<0.1	NA	<0.1	<0.1	NAE
Apr-03	**0.21; 0.20**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-03	**<0.4;<0.4; 0.16**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Apr-04	**0.29; 0.26**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAE
Oct-04	**<0.11; <0.32; 0.27**	< 0.052	**0.17**	< 0.053	< 0.051	< 0.051	0.10	NAE
Jun-05	<0.21; <0.20; 0.09	< 0.10	< 0.10	< 0.10	< 0.61	< 0.11	< 0.11	NAE
Sep-05	**0.12; 0.10; < 0.42**	< 0.05	< 0.05	NA	NA	NA	< 0.05	NAE

Legend

---- *Wells not installed at the time of sampling*

ND Not detected

NA Not analyzed

** With regulatory consent, A7-46 was assumed to be similar to A7-8; Sampling goal was to look at possible offsite migration

Shaded blocks indicate MCP exceedances

J - Estimated result. Result is less than RL.

E - Estimated result. Result concentration exceeds the calibration range.

"Double-entry" used for sample-and-duplicate results.

"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte
Page 3 of 6: 1,1,2,2-Tetrachloroethane

1,1,2,2-Tetrachloroethane ppb

MCP GW-1 Standard = 2.0 ppb

Date	Well Number							Sampled by:
	A7-8	A7-46	A7-51	A7-52	A7-61	A7-62	A7-63	
Jun-92	ND	ND	----	----	----	----	----	OHM
Dec-93	ND	NA	**200**	NA	----	----	----	OHM
Jul-96	<0.51	**	**66**	**9.7**	**16**	<0.51	**13**	ABB-ES
Oct-96	<0.51	**	**85**	**17**	**20**	<0.51	**21**	ABB-ES
Apr-97	<0.5	<0.5	**34**	**9**	**3**	<0.5	**24**	Weston
Oct-97	<0.5	<0.5	**29**	**14**	**21**	<0.5	**26**	Weston
Apr-98	<1.0	<1.0	**11**	**3.6**	1	<1.0	**20**	NAE
Oct-98	<10.0	<1.0	**9**	**4.2**	1.6	<1.0	**31**	NAE
Apr-99	<10.0	<1.0	**6.5**	1.4	**2.3**	<1.0	**23**	NAE
Oct-99	<10.0	<1.0	**19**	**3.4**	**2.2**	<1.0	**22**	NAE
Apr-00	<1.0	<1.0	**7.7**	**2.1**	1	<1.0	**12**	NAE
Oct-00	ND	ND	**4.9**	**2.8**	**2.6**	ND	**20**	NAE
May-01	<1	<1	< 1	**52 J**	1.2	<1	**12**	Weston
Oct-01	<6.2; <2	NA	**6.0**	**2.9**	NA	<1	**14**	NAE
Apr-02	<1	<1	< 1	1.6	0.97 J	<1	**20**	NAE
Oct-02	< 1	NA	**6.1**	1.4	NA	< 1	**13**	NAE
Apr-03	< 1	< 1	**4.8**	1.2	< 1	< 1	**5.1**	NAE
Oct-03	< 1	< 1	**2.4 J**	1.2 J	< 1	< 1	**3.8**	NAE
Apr-04	< 1	< 1	**2.7**	0.73 J	0.58 J	< 1	**4.8**	NAE
Oct-04	0.95 J	< 1	**4.4**	0.58 J	0.95 J	< 1	1.8	NAE
Jun-05	1.0 UJ; 1.0 U	1 U	**2**	1 U	0.28	1 U	**2**	NAE
Sep-05	0.5; 0.5 U	0.5 U	1.4	NA	NA	NA	**4.1**	NAE

Legend

---- Wells not installed at the time of sampling
ND Not detected
NA Not analyzed
** With regulatory consent, A7-46 was assumed to be similar to A7-8; Sampling goal was to look at possible offsite migration

J - Estimated result. Result is les Shaded blocks indicate MCP exceedances
J - Estimated result. Samples A7-51, 52 were received at excessive temperature in October 2003.
E - Estimated result. Result concentration exceeds the calibration range.
"Double-entry" used for sample-and-duplicate results.
"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte
Page 4 of 6: Tetrachloroethene

Tetrachloroethene ppb

MCP GW-1 Standard = 5.0 ppb

Date	Well Number							Sampled by:
	A7-8	A7-46	A7-51	A7-52	A7-61	A7-62	A7-63	
Jun-92	**13**	**12**	----	----	----	----	----	OHM
Dec-93	**38**	NA	**130**	NA	----	----	----	OHM
Jul-96	**12**	**	**72**	**5.6**	**9.1**	<1.6	**14**	ABB-ES
Oct-96	**27**	**	**65**	**7.9**	**13**	<1.6	**14**	ABB-ES
Apr-97	**120**	0.6	**26**	**6**	2	<0.5	**28**	Weston
Oct-97	**120**	1.0	**20**	**9**	**12**	<0.5	**21**	Weston
Apr-98	**92**	<1.0	**7.3**	4.6	1.1	<1.0	**28**	NAE
Oct-98	**130**	<1.0	**8.4**	4.1	3.1	<1.0	**32**	NAE
Apr-99	**94**	<1.0	**7.9**	2.2	3.5	<1.0	**30**	NAE
Oct-99	**92**	0.44J	**13**	3.8	3	.53J	**24**	NAE
Apr-00	**43**	<1.0	**8.3**	3.2	1.5	<1.0	**17**	NAE
Oct-00	**71 E**	.44 J	**6.8**	3.6	.47 J	.40 J	**25**	NAE
May-01	**40; 37 J**	<1	2.1 J	**6.1 J**	1.2	<1	**40**	Weston
Oct-01	**59; 77**	**NA**	**6.5**	**6.7**	NA	<1	**16**	NAE
Apr-02	**14;16**	<1	**6.3**	2.4	1.6	<1	**23**	NAE
Oct-02	**33; 31**	NA	**7.8**	2.5	NA	1.3	**14**	NAE
Apr-03	**24; 24**	<1	**6.4**	2.4	0.70 J	<1	1.9	NAE
Oct-03	**23J;23J;24**	<1	**5.8 J**	2.2	1.6	<1	3	NAE
Apr-04	**21;21**	<1	4.6	1.9	1.5	<1	2.9	NAE
Oct-04	**13; 13; 19**	<1	4.0	0.86 J	1.2	< 1.0	0.62 J	NAE
Jun-05	**8.7;9.0;10.9**	< 1.0	3.1	0.54 J	0.90 J	< 1.0	1.5	NAE
Sep-05	**25.4;27.4;20**	1.0 U	3.8	NA	NA	NA	**11.6**	NAE

Legend

---- Wells not installed at the time of sampling
ND Not detected
NA Not analyzed
** With regulatory consent, A7-46 was assumed to be similar to A7-8; Sampling goal was to look at possible offsite migration

Shaded blocks indicate MCP exceedances

J - Estimated result. Result is less than RL.
J - (October 2003): certain sample concentrations were estimated after they arrived at the lab at excessive temperature.
E - Estimated result. Result concentration exceeds the calibration range.
"Double-entry" used for sample-and-duplicate results.
"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte
Page 5 of 6: Trichloroethene

Trichloroethene ppb

MCP GW-1 Standard = 5.0 ppb

Date	Well Number				Sampled by:
	OHM-A7-8	OHM-A7-51	OHM-A7-52	JO-A07-M63	
Oct-97	0.8	**10**	**14**	**25**	Weston
Apr-98	< 1	4.1	2.5	<1 J	NAE
Oct-98	< 10	3.8	1.8	**36**	NAE
Apr-99	< 10	3.0	1.1	**36**	NAE
Oct-99	< 10	4.4	1.1	**30**	NAE
Apr-00	< 2	2.6	1.7	**21**	NAE
Oct-00	2.4	2.7	1.9	**37**	NAE
May-01	0.67 J; 2.1	0.82 J	1.6 J	**17**	Weston
Oct-01	2.2 J; 2.1	1.9	**9.6**	**29**	NAE
Apr-02	0.37 J; 0.40 J	2.0	0.85 J	**40**	NAE
Oct-02	0.96 J; 0.81 J	2.7	0.34 J	**33**	NAE
Apr-03	1.3; 1.5	1.6	1.5	**5.9**	NAE
Oct-03	< 1; < 1; < 1	1.3 J	< 1	**11 J**	NAE
Apr-04	1.4; 1.3	0.85 J	0.75 J	**17**	NAE
Oct-04	1.3; 1.4; 1.2J	1.4	< 1	**9.3**	NAE
Jun-05	0.57 J; 0.58 J; 0.7 J	0.99 J	< 1	3.8	NAE
Sep-05	1.1; 1.1; 0.85 J	1.3	NA	**25.4**	NAE

Legend

---- Wells not installed at the time of sampling

ND Not detected

NA Not analyzed

Shaded block indicates MCP exceedances.

J - Estimated result. Result is less than RL.

J - (in JO-A07-M63, October 2003) Sample qualified due to high temperature of cooler on receipt at the lab.

"Double-entry" used for sample-and-duplicate results.

"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 7

Contaminants of Concern Summary of Analytical Results by Analyte
Page 6 of 6: Thallium

Thallium
MCP GW-1 Standard = 2.0 ppb

Date	Well Number									Sampled by:
	OHM-A7-8	OHM-A7-9	OHM-A7-10	OHM-A7-11	OHM-A7-51	OHM-A7-52	JO-A07-M61	JO-A07-M62	JO-A07-M63	
Oct-97	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	Weston
Apr-98	< 30	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NAE
Oct-98	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	NAE
Apr-99	< 10	< 10	< 10	< 10	< 10	**3.5 J**	< 10	< 10	< 10	NAE
Oct-99	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NAE
Apr-00	**3.5 J; 3.4 J**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NAE
Oct-00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	NAE
May-01	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	Weston
Oct-01	**4.1 B**	**3.3 B**	**4.0 B**	**4.3 B**	**3.3 B**	< 10	NS	**3.3 B**	< 10	NAE
Apr-02	< 10	< 10	< 10	< 10	**3.1 B**	< 10	**5 B**	< 10	<10	NAE
Oct-02	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NS	< 1.0	< 1.0	NAE
Apr-03	0.59 B; 0.57 B	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NAE
Oct-03	<1; <1; <5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NAE
Apr-04	0.35 B; 0.36 B	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NAE
Oct-04	.11J; 0.10 U; 5.0U	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NAE
Jun-05	0.28J;0.10U	< 0.10	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NAE
Sep-05	1.0 U; 1.0 U; 1.0 U	1.0 U	NA	1.0 U	1.0 U	NA	NA	NA	1.0 U	NAE

Legend
---- Wells not installed at the time of sampling
NS No sample
ND Not detected
NA Not analyzed
[ ] Shaded block indicates MCP exceedances.
J - Estimated result. Result is less than RL.
E - Estimated result. Result concentration exceeds the calibration range.
B - Estimated value; result is less than the reporting limit.
"Double-entry" used for sample-and-duplicate results.
"Triple-entry" used for sample;duplicate;QA split-sample results.

Table 8
Sudbury Annex
Surface Water Analytical Result - April 25, 2002
Sudbury Training Annex - Landfill at AOC A7

Sample Location: ***Trench south of the capped landfill***

Sudbury Training Annex - Landfill at AOC A7	
Pesticides (ug/L) -- Method 8081	
Chemical Name	**Concentration (ug/L)**
alpha-BHC	<0.050
beta-BHC	<0.050
delta-BHC	<0.050
gamma-BHC (Lindane)	<0.050
alpha-Chlordane	<0.050
gamma-Chlordane	<0.050
Heptachlor	<0.050
Aldrin	<0.050
Heptachlor epoxide	<0.050
Endosulfan I	<0.050
Dieldrin	<0.10
4,4'-DDE	<0.10
Endrin	<0.10
Endosulfan II	<0.10
4,4'-DDD	<0.10
Endosulfan sulfate	<0.10
4,4'-DDT	<0.10
Endrin aldehyde	<0.10
Methoxychlor	<0.50
Toxaphene	<2.0

Table 9. GV-1 Landfill Gas Monitoring Results

	April 1998 to May 2001 Summaries			Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Oct 2004	June 2005	Sept 2005	May 2006
	Max	Median	Min										
Volatile Organic Compound (ppm[1])	2 (April 1999)	0	0	0	0	0	0	0	0	0	3.3	1.8	0
Oxygen (%)	20.9 (April 1998, October 1999)	20.5	20.3 in October 2000	20.8	18.8	21.2	20.8	20.6	21.5	20.5	20.8	20.2	19.7
Lower Explosive Limit (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbon Dioxide (%)	0	0	0	0	0.7	0	0.2	0	0.1	0	0	0	0.7
Methane %)	0	0	0	0	0	0	0	0	0	0	0	0	0
Atmospheric Pressure (Inches Hg)	30.20 (October 1998)	29.76	29.35 in April 2000	29.9	29.4	30.1	29.63	30.1	29.75	29.5	30.2	29.9	29.7

1 – As measured using a photoionization detector (PID)

Table 10. GV-2 Landfill Gas Monitoring Results

	April 1998 to May 2001 Summaries			Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Oct 2004	June 2005	Sept 2005	May 2006
	Max	Median	Min										
Volatile Organic Compound (ppm[1])	0	0	0	0	0	0	0	0	0	0	7.6	0.3	0
Oxygen (%)	20.7 (April 1998, October 1999)	20.5	19.7 in May 2001	19.3	19.7	21.2	21.0	20.4	21.4	20.6	20.8	20.2	19.0
Lower Explosive Limit (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbon Dioxide (%)	0.8 (May 2001)	0	0	0.9	0	0	0	0	0.1	0	0	0	1.3
Methane (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Atmospheric Pressure (Inches Hg)	30.2 (October) 1998	29.76	29.35 in April 2000	29.9	29.4	30.1	29.63	30.1	29.75	29.5	30.2	29.9	29.7

1 – As measured using a photoionization detector (PID)

Table 11. GV-3 Landfill Gas Monitoring Results

	April 1998 to May 2001 Summaries			Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Oct 2004	June 2005	Sept 2005	May 2006
	Max	Median	Min										
VOC (ppm[1])	0	0	0	0	0	0	0	0	0	0	2.5	2.4	0
O_2 (%)	20.9 in April 1998 and May 2001	20.5	20.3 in October 2000	19.7	19.7	21.1	21.0	20.8	20.9	20.6	21.2	20.6	20.3
LEL (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
CO_2 (%)	0.2 in May 2001	0	0	0.4	0	0	0	0	0.4	0	0	0	0.3
CH_4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
ATM pressure inches Hg	30.2 in October 1998	29.76	29.35 in April 2000	29.9	29.4	30.1	29.63	30.1	29.75	29.5	30.2	29.9	29.7

1 – As measured using a photoionization detector (PID)

Table 12. GV-4 Landfill Gas Monitoring Results

	April 1998 to May 2001 Summaries			Oct 2001	Apr 2002	Oct 2002	Apr 2003	Oct 2003	Apr 2004	Oct 2004	June 2005	Sept 2005	May 2006
	Max	Median	Min										
VOC (ppm[1])	0	0	0	0	0	0	0	0	0	0	1.1	1.1	0
O_2 (%)	20.9 in October 1999	20.5	20 in October 2000	20.7	19.2	21.3	20.9	20.5	21.1	20.6	21.2	20.3	20.6
LEL (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
CO_2 (%)	0	0	0	0	0.2	0	0	0	0.1	0	0	0	0.1
CH_4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
ATM pressure inches Hg	30.2 in October 1998	29.76	29.35 in April 2000	29.9	29.4	30.1	29.63	30.1	29.75	29.5	30.2	29.9	29.7

1 – As measured using a photoionization detector (PID)

Table 13. Bioremediation Scores Summary

Well Identity	Spring 2001 to Spring 2002 Score	Fall 2001 to Fall 2002 Score
OHM-A7-08	13	14
OHM-A7-09	-1	14
OHM-A7-10	2	**4**
OHM-A7-11	1	**4**
OHM-A7-12	1	1
OHM-A7-13	-1	No sample—well decommissioned June 2002.
OHM-A7-45	-1	2
OHM-A7-46	5	**Water too low to sample in Fall 2002.**
OHM-A7-51	7	9
OHM-A7-52	5	3
JO-A07-M61	1	Water too low to sample in Fall 2002.
JO-A07-M62	1	8
JO-A07-M63	10	12

Evidence for biodegradation of chlorinated organics:

Inadequate: 0 to 5
Limited: 6 to 14
Adequate: 15 to 20
Strong: over 20.

TABLE 14

HISTORICAL GROUNDWATER LEVELS (ft NGVD)

Well ID	Well Elev. Top of PVC	1997 Water Elev.		1998 Water Elev.		1999 Water Elev.		2000 Water Elev.		2001 Water Elev.		2002 Water Elev.	
		Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	May-01	Oct-01	Apr-02	Oct-02
OHM-A7-8	219.91	196.41	192.95	195.81	194.84	195.50	194.21	196.56	193.51	195.96	192.95	195.16	192.71
OHM-A7-9	186.23	179.43	176.09	178.95	177.44	177.89	177.13	179.43	176.63	178.22	176.32	177.63	176.69
OHM-A7-10	181.24	179.47	175.93	178.89	176.95	177.62	176.64	178.99	176.34	177.89	176.15	177.14	176.34
OHM-A7-11	181.65	180.64	176.65	180.54	181.45	180.75	181.15	181.45	181.65	181.15	180.65	181.28	180.55
OHM-A7-12	186.97	180.26	176.47	179.26	177.84	178.38	177.26	179.82	176.87	178.65	176.57	178.09	176.83
OHM-A7-13	231.25	230.20	217.64	228.08	222.77	227.06	221.67	229.00	219.53	226.95	217.65	227.41	--
OHM-A7-45	210.09	198.19	194.69	197.41	196.70	197.00	196.14	198.14	195.30	197.14	193.95	196.76	193.67
OHM-A7-46	218.00	202.56	200.40	202.52	202.40	202.41	202.42	202.77	201.46	202.27	198.80	202.50	198.57
OHM-A7-51	189.28	182.34	177.98	181.59	180.31	180.73	180.52	182.50	178.83	180.93	177.88	180.63	178.73
OHM-A7-52	188.17	185.17	179.19	184.47	182.88	184.32	183.37	183.87	179.97	184.33	179.47	183.87	180.58
JO-A07-M61	180.84	180.32	176.44	179.73	178.59	178.94	178.59	179.97	177.34	178.80	176.35	178.94	175.81
JO-A07-M62	181.60	178.08	175.88	177.45	176.46	176.75	176.40	177.86	176.15	176.20	176.00	176.70	176.08
JO-A07-M63	177.99	176.97	175.85	177.06	176.24	176.47	176.26	177.39	176.14	176.48	175.29	176.47	176.05

Well ID	Well Elev. Top of PVC	2003 Water Elev.		2004 Water Elev.			2005 Water Elev.			2006 Water Elev.	
		Apr-03	Oct-03	Apr-04	Jun-04	Oct-04	May-05	Sep-05	Oct-05	Apr-06	
OHM-A7-8	219.91	196.78	194.21	196.56	195.47	195.23	196.37	194.32	195.08	195.51	
OHM-A7-9	186.23	179.86	176.76	179.75	177.11	177.43	179.46	176.38	180.09	178.21	
OHM-A7-10	181.24	179.54	176.43	179.27	176.80	176.75	178.59	175.95	178.73	177.74	
OHM-A7-11	181.65	180.53	180.61	180.55	180.95	180.73	180.53	180.55	180.57	180.48	
OHM-A7-12	186.97	180.05	177.09	180.17	177.64	177.50	179.44	176.43	179.73	178.36	
OHM-A7-13	231.25	--	--	--	--	--	--	--	--	--	--
OHM-A7-45	210.09	198.05	195.89	198.54	196.53	196.65	198.18	195.29	198.41	196.79	
OHM-A7-46	218.00	202.52	201.90	202.60	210.34	202.43	202.56	201.59	202.54	202.40	
OHM-A7-51	189.28	182.42	178.88	182.54	179.58	180.16	181.84	178.18	182.85	180.66	
OHM-A7-52	188.17	182.74	180.32	184.75	182.53	182.17	183.37	178.96	184.89	183.97	
JO-A07-M61	180.84	179.75	176.81	179.28	177.89	178.40	178.90	176.47	179.94	178.93	
JO-A07-M62	181.60	177.93	176.09	177.90	176.11	176.42	177.65	175.87	178.24	176.90	
JO-A07-M63	177.99	177.14	175.99	177.03	175.79	176.12	177.08	175.69	177.36	177.45	

Note: Well OHM-A7-13 was decommissioned in June 2002

Table 15
Groundwater Analytical Monitoring - Regulatory Guidelines 1998 LTMMP and 2006
Sudbury Training Annex - Landfill at AOC A7

Volatile Organic Compounds (column 1 of 2)		
Compound	LTMMP GW-1 Standard *	2006 MCP GW-1 Standard *
	µg/L	µg/L
1,1,1,2-Tetrachloroethane	5	5
1,1,1-Trichloroethane	200	200
1,1,2,2-Tetrachloroethane	5	2
1,1,2-Trichloro-1,2,2-trifluoroethane	-	-
1,1,2-Trichloroethane	5	5
1,1-Dichloroethane	70	70
1,1-Dichloroethene	1(2)	1
1,1-Dichloropropene	-	-
1,2,3-Trichlorobenzene	-	-
1,2,3-Trichloropropane	-	1,000
1,2,4-Trichlorobenzene	70	70
1,2,4-Trimethylbenzene	-	-
1,2-Dibromo-3-chloropropane	-	100
1,2-Dibromoethane (EDB)	-	-
1,2-Dichlorobenzene	600	600
1,2-Dichloroethane	5	5
1,2-Dichloropropane	5	5
1,3,5-Trimethylbenzene	-	-
1,3-Dichlorobenzene	600	600
1,3-Dichloropropane	5	-
1,4-Dichlorobenzene	5	5
1-Chlorohexane	-	-
2,2-Dichloropropane	-	-
2-Butanone	-	-
2-Chlorotoluene	-	-
2-Hexanone	-	-
4-Chlorotoluene	-	-
4-Isopropyltoluene	-	-
4-Methyl-2-Pentanone	-	-
Acetone	-	3,000
Benzene	5	5
Bromobenzene	-	1,000
Bromochloromethane	-	-
Bromodichloromethane	5	5
Bromoform	5	5
Bromomethane	2(2)	2

Volatile Organic Compounds (column 2 of 2)		
Compound	LTMMP GW-1 Standard *	2006 MCP GW-1 Standard *
	µg/L	µg/L
Carbon Disulfide	-	-
Carbon Tetrachloride	5	5
Chlorobenzene	100	100
Chloroethane	-	1,000
Chloroform	5	5
Chloromethane	-	1,000
cis-1,2-Dichloroethene	70	70
cis-1,3-Dichloropropene	0.5**	0.5 **
Cyclohexane	-	-
Dibromochloromethane	5	5
Dibromomethane	-	5,000
Dichlorodifluoromethane (Freon 12)	-	10,000
Ethylbenzene	700	700
Hexachlorobutadiene	0.6	0.6
Isopropylbenzene	-	10,000
Methyl Acetate	-	-
Methyl tert-Butyl Ether	-	70
Methylcyclohexane	-	-
Methylene Chloride	5	5
Naphthalene	20	20
n-Butylbenzene	-	-
n-Propylbenzene	-	-
sec-Butylbenzene	-	-
Styrene	100	100
tert-Butylbenzene	-	-
Tetrachloroethene	5	5
Tetrahydrofuran	-	-
Toluene	1,000	1,000
trans-1,2-Dichloroethene	100	100
trans-1,3-Dichloropropene	0.5	0.5 **
Trichloroethene	5	5
Trichlorofluoromethane (Freon 11)	-	10,000
Vinyl Acetate	-	-
Vinyl Chloride (chloroethene)	2	2
o-Xylene	6,000 **	6,000 **
m-Xylene & p-Xylene	6,000	6,000 **

Pesticides		
Compound	LTMMP GW-1 Standard *	2006 MCP GW-1 Standard *
	ug/L	ug/L
4,4'-DDD	0.1	0.1
gamma-BHC (Lindane)**	0.2	0.1
4,4'-DDT	0.3	0.3
Aldrin	0.5	0.5
alpha-BHC (note 3)	-	-
alpha-Chlordane (note 1)	-	2
beta-BHC (note 3)	-	-
Chlordane (total) (note 1)	2	2
delta-BHC (note 3)	-	-
Dieldrin	0.1	0.1
Endosulfan I (GW-3)	0.1(3)	0.1
Endosulfan II (note 2)	-	-
Endosulfan sulfate (note 3)	-	-
Endrin	2	2
Endrin aldehyde (note 3)	-	-
Endrin ketone (note 3)	-	-
gamma-BHC (Lindane)	0.2	0.2
gamma-Chlordane (note 1)	2	2
Heptachlor	0.4	0.4
Heptachlor epoxide	0.2	0.2
Hexachlorobenzene	-	1
Methoxychlor	2(3)	2
Toxaphene (note 3)	-	-

Metals		
Element	LTMMP GW-1 Standard *	2006 MCP GW-1 Standard *
	ug/L	ug/L
Aluminum	-	-
Antimony	6	6
Arsenic (note 4)	50	50
Barium	2,000	2,000
Beryllium	4	4
Cadmium	5	5
Calcium	-	-
Chromium	100	100
Cobalt	-	5,000
Copper	-	10,000
Iron	-	-
Lead	15	15
Magnesium	-	-
Manganese	-	-
Mercury	1(3)	1
Nickel	80(3)	80
Potassium	-	-
Selenium	50	50
Silver	7(3)	7
Sodium	-	-
Thallium	2	2
Vanadium	50	50
Zinc	900(3)	900

Wet Chemistry		
Parameter	LTMMP GW-1 Standard *	2006 MCP GW-1 Standard *
	µg/L	µg/L
ANIONS		
Nitrate (as N)	-	-
Orthophosphate (as P)	-	-
Chloride	-	-
Sulfate	-	-
AMMONIA		
Ammonia as N	-	-
COD		
Chemical Oxygen Dema	-	-
TDS - Total Dissolved Solids		
TDS	-	-
CYANIDE (335.4)		
Cyanide, Total	10	10
FER IRON (HACH 8146)		
Ferrous Iron	-	-

Volatile Organics Footnotes

* MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]

** Regulatory standard is for total 1,3-dichloropropene and total xylenes

Pesticides and Metals Footnotes

* MCP Standard: Concentrations are compared to the more stringent or lower value of the Massachusetts Contingency Plan GW-1 or GW-3 standards [310 CMR 40.0974(2)]

** synonym for gamma -BHC/Lindane = gamma hexachlorocyclohexane

Note 1: Alpha-chlordane: MCP GW-1 standard is based on technical chlordane or total chlordane (the sum of all multi-component isomers, including the alpha and gamma chlordane isomers, found in technical chlordane).

Note 2: Endosulfan II: MCP standard is for endosulfan GW-3.

Note 3: Alpha-BHC, beta-BHC, delta-BHC, Endrin aldehyde, Endrin ketone, Endosulfan sulfate, Toxaphene: no MCP standard.

Note 4: Arsenic: EPA's MCL for As in drinking water was reduced January 23, 2006 from 50 ug/L to 10 ug/L.

Wet Chemistry Footnotes

COD and Cyanide are to be retained in the revised LTMMP. Ammonia, anions and TDS will be removed from the analyte list in that revision.

Table 15A

ARARS from 1995 ROD Appendix C

The ARARs tables contained in this report are reproductions of those contained in the Final Feasibility Study Report for Fort Devens Sudbury Annex, Middlesex County, Massachusetts submitted by OHM in May 1995. The original table numbers were retained for ease of comparison in the 1995 ROD, and they are unchanged in the five pages following.

The FS carried the ARARs as Table 3-2 (four pages) and Table 3-3 (one page).

TABLE 3-2

FORT DEVENS SUDBURY TRAINING ANNEX - AOC A7
ARARs FOR EXCAVATION AND OFF-SITE TREATMENT AND DISPOSAL OF LABORATORY WASTE AND CONTAINMENT BY RCRA SUBTITLE C LANDFILL CAP

Requirement	*Status*	*Requirement Synopsis*	*Action To Be Taken To Attain ARAR*
		ACTION-SPECIFIC	
Laboratory Waste - Federal			
RCRA - Identification and Listing of Hazardous Waste (40 CFR 261)	Relevant and Appropriate	Establishes definitions for solid and hazardous wastes. Sets forth criteria used to identify hazardous waste and to list particular wastes. Identifies characteristics of a hazardous waste and contains a particular list of hazardous wastes.	Laboratory waste includes soil and debris contaminated by liquid containers. The waste is assumed to be classified as F002 spent solvents.
RCRA - Land Disposal Restrictions (40 CFR 268)	Relevant and Appropriate	Identifies hazardous wastes that are restricted from land disposal and defines exemptions. Subpart D contains treatment standards for RCRA-listed wastes.	Removal of laboratory waste and associated contaminated soils triggers LDRs. Since the wastes have been classified as F002 spent halogenated solvents, the wastes will be transported off site for treatment and disposal in accordance with the requirements of the LDRs.
Off-Site Rule (40 CFR §300.440)	Applicable	Requires that hazardous substances, pollutants, or contaminants transferred off site for treatment, storage, or disposal during a CERCLA response action be transferred to a facility operating in compliance with §3004 and §3005 of RCRA and other federal laws and all applicable state requirements.	Laboratory waste material will be transported to a TSDF that is in compliance.
Laboratory Waste - State			
HWR - Requirements for Generators (310 CMR 30.4000-30.416)	Relevant and Appropriate	Requirements for generators, including accumulation of waste prior to off-site disposal.	Generator requirements will be complied with during excavation and removal of laboratory waste materials.
HWR - Use and Management of Containers (310 CMR 30.680)	Relevant and Appropriate	Requirements for use and management of containers.	Packing of laboratory waste materials will adhere to these requirements.
Soil - Federal			
RCRA Subtitle C, Subpart B - General Facility Standards (40 CFR 264.10 - 264.18)	Relevant and Appropriate	General requirements regarding waste analysis, security, training, inspections, and location for any facility that treats, stores, or disposes of hazardous wastes (a TSDF).	Requirements regarding security, training, and inspections will be met.

TABLE 3-2
(CONTINUED)

Requirement	*Status*	*Requirement Synopsis*	*Action To Be Taken To Attain ARAR*
RCRA Subtitle C, Subpart B - Construction Quality Assurance Program (40 CFR 264.19)	Relevant and Appropriate	For all surface impoundments, waste piles, and landfill units, this regulation requires that a construction quality assurance (CQA) program be developed and implemented. A written CQA plan must identify the steps that will be used to monitor and document the quality of materials and their installation.	A CQA program will be developed and implemented for the construction of the landfill cap at Area A7.
RCRA Subtitle C, Subpart C - Preparedness and Preparation (40 CFR 264.30 - 264.37)	Relevant and Appropriate	Requirements applicable to the design, operation, equipment, and communications associated with a TSDF, and to arrangements with local response departments.	Since these regulations are primarily intended for facilities with indoor operations and a landfill cap is being constructed at Area A7, only requirements regarding communications equipment will apply during construction activities.
RCRA Subtitle C, Subpart D - Contingency Plan and Emergency Procedures (40 CFR 264.50 - 264.56)	Relevant and Appropriate	Outlines general requirements for contingency and emergency planning procedures for TSDF operations.	During all remedial action, a contingency plan with emergency procedures will be developed.
RCRA - Subpart N, Landfill Closure and Post-Closure Care (40 CFR 264.310)	Relevant and Appropriate	Final cover at a landfill requires the cover to be designed and constructed to meet certain performance standards. Cover to provide long-term minimization of infiltration. Settling and subsidence must be accommodated. Post-closure use of property must be restricted as necessary to prevent damage to cover. Runoff and runon must be prevented. Protect and maintain surveyed benchmarks. References §264.117 - 264.120 for maintenance and monitoring requirements.	Cap design will meet performance standards. Runoff and runon prevention measures will be taken. Surveyed benchmarks will be protected.
RCRA Subtitle C, Subpart G - Closure and Post-closure (40 CFR 264.117 - 264.120)	Relevant and Appropriate	Details general requirements for closure and post-closure of hazardous waste facilities, including installation of a ground water monitoring program and beginning a period of 30 years of post closure care. §264.119 requires the placement of deed restrictions.	Because Area A7 is being closed as a landfill, parts of this requirement concerning long-term monitoring and maintenance of the site are relevant and appropriate. Sets a minimum of 30-year post-closure care period. Deed restrictions will be placed restricting the future uses of the site. A post-closure plan will be prepared. The plan will identify monitoring and maintenance activities, and their frequency.
RCRA Subtitle C, Subpart F - Releases from Solid Waste Management Units (40 CFR 264.90 - 264.101)	Relevant and Appropriate	Specifies compliance points and ground water monitoring requirements for TSDFs during active-care and closure-care periods. Corrective action program must be developed if monitoring shows exceedences in limits.	Ground water monitoring will be conducted following the construction of the cap. Corrective action may be taken if monitoring warrants action.
RCRA Proposed Amendments for Landfill Closure (52 FR 8712)	To Be Considered	Provides an option for the application of alternative closure and post-closure requirements based on a consideration of site-specific conditions, including exposure pathways of concern.	Cap and post-closure monitoring will be designed taking into account exposure pathways of concern.

TABLE 3-2
(CONTINUED)

Requirement	*Status*	*Requirement Synopsis*	*Action To Be Taken To Attain ARAR*
RCRA - Land Disposal Restrictions (LDRs) (40 CFR 268)	Applicable	Land disposal of a RCRA hazardous waste is restricted without specified treatment. It must be determined that the waste meets the definition of one of the specified restricted wastes and the remedial action must constitute "placement" for the land disposal restrictions to be considered applicable. For each hazardous waste, the LDRs specify that the waste must be treated either by a treatment technology or to a concentration level prior to disposal in a RCRA Subtitle C-permitted facility.	If soil at Areas A7 and A9 fail TCLP testing, soil must be treated before the final disposal. Soils that fail TCLP testing could not be consolidated under the landfill cap at Area A7.
USEPA Guidance: Design and Construction of RCRA/CERCLA Final Covers (EPA/625/4-91/025)	To Be Considered	USEPA guidance that provides technical guidance on the design and construction of RCRA/CERCLA final covers.	Guidance will be considered in the design and construction of the landfill cap at Area A7.
USEPA Guidance: Quality Assurance and Quality Control for Waste Containment Facilities (EPA/600/R-93/182)	To Be Considered	USEPA guidance that provides technical guidance on quality assurance and quality control measures for containment facilities.	A construction quality assurance program will be developed for the remedial action at Area A7 based on this guidance document.
Clean Water Act: Final NPDES General Permits for Storm Water Discharges From Construction Sites; Notice (57 FR 44412-44435)	Relevant and Appropriate	Addresses NPDES permits for construction sites. For construction sites greater than 5 acres, develop and implement storm water pollution prevention plans. Storm water controls include stabilization practices, such as seeding and geotextiles, and structural practices, such as silt fences, swales, sediment traps, basins, etc. Identify maintenance procedures.	During construction, storm water management practices will be implemented.
Soil - State			
HWR - General Management Standards for All Facilities (310 CMR 30.510)	Relevant and Appropriate	Establishes requirements for operation of facilities including security, inspection, and personnel training.	Requirements regarding security, inspection, and training will be met during and after construction of the landfill cap.
HWR - Contingency Plan, Emergency Procedures, Preparedness, and Prevention (310 CMR 30.520)	Relevant and Appropriate	Requirements for notification, safety equipment, and spill control for hazardous waste facilities. A facility's contingency plan shall include: procedures to be used following emergency situations and to prevent hazards to public health, safety, or welfare and the environment. Copies of the plan shall be submitted to the local police and fire departments, hospitals, and emergency response teams.	During the remedial construction, safety and communication equipment will be kept at the site, and local authorities will be familiarized with site operations. Plans will be developed and implemented during site work. Copies of plans will be kept on site.

TABLE 3-2
(CONTINUED)

Requirement	*Status*	*Requirement Synopsis*	*Action To Be Taken To Attain ARAR*
HWR - Landfill Closure and Post-Closure Care (310 CMR 30.633(1) & (2B))	Relevant and Appropriate	Sets forth performance requirements for the closure of a landfill. For closure, the final cover must be designed and constructed to: provide long-term minimization of migration of liquids through the closed landfill; function with minimum maintenance; promote drainage and minimize erosion or abrasion of the cover; and accommodate settling. Post-closure, long-term maintenance, and monitoring requirements from 310 CMR 30.592 apply. Establishes a 30-year post-closure care period (310 CMR 30.590) and ground water monitoring (310 CMR 30.660).	Landfill cap at Area A7 will be designed to meet performance standards for this requirement. Following construction, long-term monitoring and maintenance requirements for the landfill will also apply.
HWR - Post-Closure (310 CMR 30.591(b) & 30.592(b))	Relevant and Appropriate	Requirement that establishes 30-year period of operations and maintenance for owners and operators of all facilities at which hazardous waste will remain on site after closure.	Requires a minimum of 30 years for post-closure care at Area A7, and at any other site where hazardous waste will remain in place.
HWR - Land Disposal Restrictions (310 CMR 30.750)	Relevant and Appropriate	Identifies and describes those hazardous wastes which are restricted from land disposal. These regulations also define the limited circumstances where prohibited land disposal is permissible.	If soils from Areas A7 and A9 fail TCLP test, then this requirement, which requires treatment prior to disposal, is applicable. Soil that fails TCLP testing could not be consolidated under the landfill cap as part of the necessary subgrade.
Massachusetts Surface Water Quality Standards (310 CMR 4.00) (see also 57 FR 44426-44427)	Relevant and Appropriate	Massachusetts 401 certification for the Clean Water Act requires additional measures for surface water discharges during construction. Set backs and best management practices (BMPs) are identified and are dependent upon the classification of the receiving water.	During construction, any new discharge outfill pipes will be designed to be set back from the Assabet River. Receiving swales, infiltration trenches or basins, filter media dikes or other BMPs will be prepared with the goal to minimize erosion yet maximize infiltration or otherwise improve water quality prior to discharge.
Massachusetts Ambient Air Quality Standards (310 CMR 6.00)	Applicable	Establishes the standards and requirements for ambient air quality standards in the Commonwealth. Specifically, Section 6.04(1) provides ambient air quality criteria such as particulate matter standards. The primary ambient air quality standards for particulate matter are: 50 $\mu g/m^3$ annual ambient air quality standard, attained when the expected annual mean arithmetic concentration is less than or equal to 50 $\mu g/m^3$; and 150 $\mu g/m^3$ - maximum 24-hour concentration, attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is less than or equal to one.	The emissions limits for particulate matter will be managed through engineering controls during construction activities at Area A7.

TABLE 3-3

FORT DEVENS SUDBURY TRAINING ANNEX - AOC A9
ARARs FOR CONTAMINATED SOIL EXCAVATION
AND CONSOLIDATION AT AOC A7

Requirement	*Status*	*Requirement Synopsis*	*Action To Be Taken To Attain ARAR*
		CHEMICAL-SPECIFIC	
Federal			
Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals)(OSWER 9285.7-01B)	To Be Considered	USEPA guidance used to develop preliminary remediation goals for carcinogenic and non-carcinogenic contaminants in various media.	Using the guidance, risk-based cleanup levels were developed for arsenic and thallium. Arsenic and thallium contaminated soils at AOC A9 will be excavated to 30 and 20 parts per million, respectively. Confirmatory samples will be taken to ensure that all contaminated soils above the cleanup level are removed.
		LOCATION SPECIFIC - None.	
		ACTION-SPECIFIC	
Federal			
RCRA - Identification and Listing of Hazardous Waste (40 CFR 261)	Applicable	Establishes definitions for solid and hazardous waste. Sets forth criteria used to identify hazardous waste and to list particular wastes. Identifies the characteristics of a hazardous waste and contains a list of particular hazardous wastes.	Soils at Area A9 will be TCLP tested to determine if it is hazardous.
Preparation of Soil Sampling Protocols: Sampling Techniques and Strategies (EPA/600/R-92/128, July 1992)	To Be Considered	USEPA guidance document for use in the development of soil sampling protocols. A particulate sampling theory is the basis for proper soil sampling. Other soil sampling scenarios are discussed including sampling from stockpiled material.	During remedial design, a soil sampling plan will be developed for implementation during excavation of soil. The goal of the sampling will be to determine whether soil can be consolidated as part of the subgrade of the landfill cap or must be shipped off-site for treatment/disposal.
State			
HWR - Identification and Listing of Hazardous Waste (310 CMR 30.100)	Applicable	Establishes provisions for classifying waste as regulated hazardous waste. Two methods are employed to identify wastes as hazardous, characteristics and listing.	Soil will be TCLP tested for arsenic to determine if it is hazardous by characteristics.
Massachusens Air Pollution Control Regulations (310 CMR 6.00)	Applicable	Establishes the standards and requirements for ambient air quality standards in the Commonwealth. Specifically, Section 6.04(1) provides ambient air quality criteria such as particulate matter standards. The primary ambient air quality standards for particulate matter are: $50\mu g/m^3$ annual ambient air quality standard, attained when the expected annual mean arithmetic concentration is less than or equal to $50\mu g/m^3$; and $150\mu g/m^3$ - maximum 24-hour concentration, attained when the expected number of days per calendar year with a 24-hour average concentration above $150\mu g/m^3$ is less than or equal to one.	If necessary, emissions limits for particulate matter will be managed through engineering controls during excavation activities at all sites.

Table 16. IRIS Database Assessments of ROD Chemicals of Potential Concern

Compound or Element	Most Recent Assessment Date
Dieldrin	Oral RfD Assessment 9/1/1990 Carcinogenicity Assessment 7/1/93
DDT	Oral RfD Assessment 2/1/1996 Carcinogenicity Assessment 5/1/1991
Chlordane	Oral RfD Assessment 2/7/1998 Carcinogenicity Assessment 2/7/1998
PCBs	Oral RfD Assessment 6/1/1994 Carcinogenicity Assessment 6/1/1997
Benzo(a)anthracene	**IRIS information not located**
Benzo(a)pyrene	Carcinogenicity Assessment only 11/1/1994
Phenanthrene	Inhalation Assessment 9/1/1994 Carcinogenicity Assessment 12/1/1990
Lead	Oral RfD Assessment (discussion only): 7/8/2004 Carcinogenicity Assessment 11/1/1993
Arsenic (inorganic)	Oral RfD Assessment 2/1/1993 Carcinogenicity Assessment 4/10/1998
Barium	Oral RfD Assessment 7/11/2005 Inhalation Assessment 3/30/1998 Carcinogenicity Assessment 3/30/1998
Copper	Carcinogenicity Assessment only 8/1/1991
Nickel (soluble salts)	Oral RfD Assessment 12/1/1996 Carcinogenicity Assessment 8/1/1994
Lindane	Oral RfD Assessment 3/1/1988 Carcinogenicity Assessment 10/1/1993
Heptachlor epoxide	Oral RfD Assessment 3/1/1991 Carcinogenicity Assessment 7/1/1993
Tetrachloroethene	Oral RfD Assessment only 3/1/1988
1,1,2,2-Tetrachloroethene	Carcinogenicity Assessment only 2/1/1994
Trichloroethene	Oral RfD Assessment 8/1/1992 Carcinogenicity Assessment 7/1/1989

RfD: Reference Dose

SUDBURY ANNEX
2006 FIVE-YEAR REVIEW REPORT
PHOTOGRAPHS

Photograph 1 – Sudbury Landfill looking northeast from the crest.

Photograph 2 – Sudbury Landfill looking west from toe of slope. (Note unwanted vegetation growing within toe-drain)

Photograph 3 – Broken limbs and small trees fallen onto perimeter fence near northeast corner.

Photograph 4 – Example Photo of Damaged Wells Between the Landfill and the Assabet River.

Photograph 5 – Reconstructed Wetland

Photograph 6 – Road Currently Being Regraded

APPENDIX A

WETLAND INSPECTION REPORT (2004)

The September 14 2004 wetland inspection report is included in this appendix.

The EPA Comment 6 to the draft 2005 annual report mentioned the wetland and requested a meeting to determine the future of monitoring at this location.

Following the text and photographs of the 2004 wetland inspection report, the EPA comment 6 of November 2005 and the USACE response are included, since these outline the appropriate care and management of the wetland through 2006 and likely maintenance requirements in the future.

Observations/Comments Sudbury Annex Wetland Visit September 14, 2004

Personnel from the Fish and Wildlife Service, Elizabeth Herland and Debra Kimbrell-Anderson, the Environmental Protection Agency and the USACOE Wetland Evaluation Team, Robert Davis and Peter Trinchero visited the Wetland B Mitigation Site adjacent to the RCRA Cap in Study Area A7. This replacement wetland site is approximately 50x60 feet at the base of the landfill, contained within a north facing berm reinforced with large boulders. This area approximates the size of Wetland B that was eliminated in the remediation of the landfill. The north facing berm is vegetated with primarily red maple and the topography slopes from the berm down to the Assabet River. Although there was no specific evidence cited, Wetland B was described "as providing important vernal pool habitat which is not provided by the natural undisturbed bordering vegetated wetland (bvw) associated with the unnamed perennial stream located down gradient of the SA A7 replication area". (1)

At this visit there was no standing water within the several deeper areas of the wetland. Broadleafed and narrowleafed cattail were well established in the several most profound areas. The soil surface in these areas was moist indicating water was recently present, water was close to the surface in these areas and/or there was a heavy dew or recent rainfall. Not to disrupt the impervious layer of the wetland, soil cores were not taken. When the soil surface in these areas was disturbed, there was about 4 to 5 inches of rich topsoil with the clay liner under the topsoil. The only invasive/exotic observed in the wetland area is purple loosestrife, with about 12 clumps scattered over the site. A few clumps where the flowers had not progressed to seed were easily pulled. There are several red maple seedlings, all less than 12 inches, established at the edge and on the slopes, naturally seeded (wanderers), probably from the red maple forest adjacent to north facing berm.

The wetland was constructed in fall 1996, inspected in 1997, June and July 2000. There is no question the area has been successfully restored to a functioning wetland, and there is evidence it also functions as a vernal pool. Observations on June 6, 2000, indicated breeding wood frogs and mole salamanders, obligate vernal pool species, were in the pool. Another visit on July 25, 2000 found there no water remained in the wetland.

The dominant vegetation observed during the September 14, 2004 visit:

Genus/Species (common name) *(not previously recorded)	**Wetland Status**
Typha latifolia (Broadleafed cattail)	Obligate
Typha angustifolia (Narrowleafed cattail)	Obligate
Leerzia orzoides (Rice cut-grass)	Obligate
Scirpus cyperinus (Woolgrass)	FacW+
Carex lurida (Lurid sedge)	Obligate
Iris diversicolor (Blueflag)	Obligate
Juncus effuses (Softrush)	FacW+
Sporangium americanum (Eastern bur-reed)*	Obligate
Phalarus arundinaceae (Reed canarygrass)	FacW+
Carex stricta (Tussock sedge)*	Obligate
Lythrum salicaria (Purple loosestrife)	FacW+
Mimulus ringens (Monkey flower)	FacW
Several grasses Epilobium coloratum (Purple-leaved willow herb)*	Obligate
Gratiola neglecta (Overlooked Hedge Hyssop)*	Obligate
Dioscorea villosa (Wild yam)*	Fac+
Acer rubrum (Red maple)* seedlings-3years	Fac
Euthamia graminifolia (Grass-leaved goldenrod)	Fac
Polygonum pensylvanicum (Pinkweed)*	FacW

Fauna Observed

Deer sign/browse
Dragonflies (Upland/Wetland)

Comments/Suggestions

With the use of survey, a couple of staff gauges should be fixed in the deepest areas to measure the amount of water and the duration of the presence of the water in these areas. Rainfall data for the immediate area should be recorded. Weekly data collection is recommended. As suggested in previous reports, this data will determine whether the area is a successful replacement vernal pool. Monitoring could be completed by a volunteer group from a local high school or as a part of a civic engagement/for credit project sponsored by an area college. If this data over a couple of years indicates the area lacks the 2-3 month presence of standing water, small depressions in the deepest area of the wetland could be excavated. The disruption in the clay lining will require the reapplication of clay in these areas. These areas will naturally revegetate.

The area should be inspected at once a year for invasives/exotics with special interest in Phragmites. The loosestrife can be manually removed before it sets seed. There are a few small areas on the slope immediately above the wetland that lacked cover. These areas should be re-covered with loam and reseeded to prevent additional erosion.

1. Memorandum For the File, 26 September 1996, Fort Devens Sudbury Training Annex, Sudbury, MA, Source Control Remediation, Wetlands Replication Recommendations at A7 & P39

EPA COMMENT: The Army created a wetland as part of the remedy for this site, but had not included the inspection of the wetland in the annual reports. It is understood that the 2004 inspection report will be provided under separate cover. On September 14. 2004 the Army Corps of Engineers, USF&WS, EPA, and DEP inspected the wetland. It was designed as a vernal pool, and as it is September, it was fairly dry. This wetland should be inspected several times in the spring/summer of 2005 to determine if it is still functioning as a vernal pool. During the review of the 2005 Annual Report, EPA, DEP, USF&WS, and Army should meet and discuss the results of the inspections and determine if any follow-on actions are warranted. Wetland inspections should be included in the semi-annual AOC A7 inspection reports in the future.

The USACE is currently completing the 2004 Draft Inspection Report based on the September 14, 2004 site inspection of the AOC A7 wetland conducted with the USACE, USFWS, EPA, and DEP. The AOC A7 wetland was created (replicated) in the fall of 1996 as mitigation for "Wetland B" that had ponded seasonally and is now incorporated as part of the landfill. In the Wetlands Delineation Report, Wetland B was classified under the Massachusetts Wetlands Protection Act Regulations (MWPAR) as an "Isolated Land Subject to Flooding " resource area but based on its size (40 by 60 feet or 2,400 sq. ft.) was not subject to regulation under the MWPAR. Consequently Wetland B was replicated at the time pursuant to Corps Federal policy of "No Net Loss of Wetlands" and the requirements of Army Regulation 200-3, "Natural Resources - Land, Forest and Wildlife Management." Wetland B replication was designed as a vernal pool albiet it had never been observed or certified formally to function as a vernal pool. Vernal pools typically go dry during the June-August time frames so it not unexpected to see them dry in September. Based upon the September 14, 2004 inspection, the AOC A7 wetland exceeds relevant performance standards and therefore semi-annual inspections are not warranted. No long-term monitoring requirements for this replicated wetland were included in either of the two RODS for AOC A7 in 1995 and 1997 and consequently long-term wetland monitoring was not included in the April 1988 Long Term Monitoring & Maintenance Plan for the Landfill at Area of Concern A7.

The USACE had planned to conduct subsequent inspections in mid-May/early June 2005 to see if the wetland is functioning as a vernal pool, as discussed last year during the September 14, 2004 inspection. However, these inspections were not conducted during the spring of 2005 and are consequently planned for the spring of 2006.

Accordingly the USACE: 1) plans to complete the 2004 report based on the September 14, 2004 inspection along with including any prior observations, inspections and a historical background section specific to A7 to take us from 1995, the year of initial involvement, to present; 2) conduct the additional observations during the spring/summer 2006 to determine if it is functioning as a vernal pool; and 3) to discuss these results with the EPA, DEP & USFWS to determine if any follow-on actions are warranted. The 2006 report will include recommendations that the monitoring, based on program results relative to achieving the performance standards, is no longer required or should be continued for discussion and approval by the BCT (i.e., EPA, DEP, USFWS & Army).

APPENDIX B

1999 INSTITUTIONAL CONTROL (IC) ADDENDUM

ADDENDUM TO:

Long Term Monitoring & Maintenance Plan for The Landfill at Area of Concern A7 January 1998. Sudbury Training Annex. Prepared by Department of the Army New England District, Corps of Engineers.

1. Semi-annual groundwater monitoring for arsenic at Study Area P58 wells no.
   E3-P58-M01
   E3-P58-M02
   E3-P31-M01
   E3-P58-M24
   Shall continue through fall 2001 as part of this LTM& M for AOC A7 and will include 3 more rounds of sampling and analysis: Spring 2000 Fall 2000 Spring 2001

2. Sampling and Analysis of these four wells shall conform to the Quality Assurance and Quality Control criteria specified in this LTM& M Plan for AOC A7 for groundwater.

3. After the spring 2001 sampling & Analysis is complete all of the groundwater data from AOC A7 and SA P58 will be reviewed by the Army, the MADEP and the U.S. EPA in accord with current Army, EPA and MADEP 5-year review guidance. Any levels of arsenic in these four wells specified in item (1) above (excluding E3-P31-M01) that exceed the MCL of 50 ppb arsenic shall be cause for the Army to extend semi-annual monitoring of all four of the specified wells (none excluded) for an additional 5 years, until the review of data in the fall of 2006.

4. In accord with the Source Control ROD for AOC A7 the Army will execute Institutional Control inspections on an annual basis (or more frequently, if required) in accord with the criteria specified in Attachment I to this addendum. The Army shall prepare an Annual Inspection Report for submittal to the U.S. EPA New England District, Massachusetts Department of Environmental and the U.S. Fish and Wildlife Service.

(Attachment 1)

FORT DEVENS - SUDBURY TRAINING ANNEX
INSTITUTIONAL CONTROL (IC) INSPECTION CRITERIA

I. Annual Inspection. An annual inspection of the Property will be performed to ensure 1C compliance. The first annual inspection shall be performed within twelve (12) months of the execution of the "Memorandum of Agreement among the U.S. Army, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Protection" pertaining to the Fort Devens-Sudbury Training Annex NPL Site Institutional Controls, and each subsequent annual inspection shall be performed no later than twelve (12) months following the preceding such inspection. Inspections will be performed annually in connection with the Source Control ROD at the Site. The inspection may be accomplished more frequently than annually. The annual inspection will include the following components:

A. Document Review - Prior to taking the Interview and the Physical On-site Inspection (described below), the party conducting the inspection will inspect relevant documents generated during the preceding year, in order to confirm that
   (a) there have been no changes to the use of the Site
   (b) no activities have been undertaken at the Site that have disturbed the integrity of the landfill containment system or the function of the monitoring system in place at AOC7
   (c) no activities have been undertaken at the Site that have disrupted or otherwise negatively impacted the subsurface soil below four (4) feet and
   (d) there has been no negative impact on the monitoring well network or water table at AOC7 and SA P58.

   These documents may include: Such other documents as the Army, EPA and MADEP project managers may determine are necessary to evaluate the continued protectiveness of the institutional controls established in the Source Control ROD and the Memorandum of Agreement.

B. Interview - The party conducting the inspection shall meet with each owner of the Property, its property manager or other appropriate designee with knowledge of day-to-day activities on the Property to review compliance with the institutional controls. As part of this review, the following types of information shall be discussed:

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

   Responses will be annotated on an inspection checklist.

C. Physical On-Site Inspection - After reviewing the documents assembled and performing the necessary interviews, the party conducting the inspection will undertake a physical, on-site inspection of the Property to determine compliance with the institutional controls. The physical on-site inspection shall include examination of the following:

1. Land use conditions (presence of buildings and level of recreational use of the Site);
2. Evidence of any changes to the use of the Site;
3. Evidence of any disturbance to the integrity of the landfill containment system at AOC7;
4. Evidence of any disturbance to the function of the monitoring system in place at AOC7;
5. Evidence of any significant excavation or surface or subsurface soil disturbance at AOC7;
6. Evidence of any activities that have disrupted or otherwise negatively impacted the subsurface soil at the Site below the depth of four (4) feet; and
7. Such other conditions as the Army, EPA and MADEP Project Managers may determine are necessary to evaluate the continued protectiveness of the institutional controls. The party conducting the inspection will annotate all observations, on an inspection checklist.

II. Annual Report. A copy of the annotated inspection checklist, a written summary of the findings for each separately owned lot or parcel of land within the Property, and all supporting documentation shall be provided to the Army, EPA and MADEP within thirty (30) days after completion of the inspection. The Annual Report shall explain the basis of any known or suspected violations identified during the Annual Inspection.

II. Five-Year Review. During the second five-year review to be conducted in connection with the Source Control ROD, the Army, EPA and MADEP will re-evaluate the scope and frequency of such inspections. The 1C Inspection Criteria may be revised as necessary to ensure institutional control compliance with the designated Army, EPA and MADEP project managers.

This listing of IC Inspection Criteria was signed for the U.S. Department of the Army by Thomas H. Strunk, BRAC Environmental Coordinator, for the U.S. Environmental Protection Agency by Christine Williams, Remedial Project Manager, and for the Massachusetts Department of Environmental Protection by Robert Campbell, Federal Facilities Manager.

APPENDIX C

INTERVIEWS

Institutional Controls Review for 2001 - 2006 Five-Year Review

The institutional control review consists of document review and interviews. For the 2006 Five-Year Review document review was discussed in the body of the report and the interviews are included below.

Interviews

Informal interviews for the 2001 Five-Year Review were conducted by Weston with Mr. Tom Strunk, former Base Environmental Coordinator (BEC) for the Sudbury Training Annex. During the interviews, Mr. Strunk confirmed that as a result of the source control (SC) and removal actions, no residual contamination remains at any of the eight AOCs Al, A2, A9, P2, P16, P23, P28, P39, or P41, which would pose a threat to human health or the environment. He also indicated that none of the other AOCs mentioned in the 2001 five-year review had ongoing O& M activities or residual contamination posing unacceptable risk to human health or the environment.

Formal Interviews were conducted annually from 2002 with the start of e-mail and telephone interviews with agencies (USFWS, USAF, FEMA) that control portions of the former Annex surrounding AOC A7. These have been conducted in accordance with the 2001 LTMMP requirements. Interviews have been summarized annually in Institutional Control Appendices of the AOC A7 Annual reports. The Town of Maynard was contacted in preparation for, and then soon after, the exercise in 2002 to decommission unused wells throughout the Annex.

The most recent responses are summarized below. E-mail correspondence is included in this appendix, following the summaries.

The requirements for the interviews are repeated below:

"Interview - The party conducting the inspection shall meet with each owner of the Property, its property manager or other appropriate designee with knowledge of day-to-day activities on the Property to review compliance with the institutional controls. As part of this review, the following types of information shall be discussed:

1. Status of past redevelopment or other construction or demolition activities;
2. Review of approved conditional exemptions, amendments and/or releases;
3. Review of any unauthorized uses and activities;
4. Review of corrective action to resolve unauthorized uses and activities;
5. Overall effectiveness of the institutional controls; and
6. Status of anticipated future redevelopment or other construction or demolition activities."

The questions in the interview questionnaires were phrased to cover the respective periods since the responses to the previous set of questions had been generated.

In addition to the concerns raised in these six items, the USFWS undertook in the September 28, 2000 Memorandum of Agreement with the Army to block any residential development along a strip of land 50 feet either side of the centre-line of certain roads and former railroads unless it could be demonstrated to the EPA at the time that the parcels to be developed were protective of both human health and the environment. This concern was addressed in the USFWS response to the first question of the USFWS questionnaire.

The most recent annual interviews for review of institutional controls are summarized in the checklists that follow. B. 1, B. 2, B. 3 and B. 4 are the numbers assigned to the checklists from the interviews with the USFWS, FEMA, USAF and Town of Maynard DPW.

B.1	B.1 - USFWS Interview Checklists	Summary	OK?
B.1.1	Changes to the use of the site?	Q1 : Refuge now open to the public, with seasonal hunting in the winter.	**Uncertain**: the hunting may lead to ground-level ordinance.
B.1.2	Approved conditional exemptions, amendments and/or releases	Q7: No known releases/spills.	Y
B.1.3	Unauthorized uses and activities	Q5,6,7: No.	Y
B.1.4	Review of corrective action to resolve unauthorized uses and activities	Q5: No trespassing noted.	Y
B.1.5	Overall effectiveness of the institutional controls	Q8: No known spills or dumping.	Y
B.1.6	Status of anticipated future redevelopment or other construction or demolition activities	Q8: Kiosks have been constructed for visitors; a visitors' center is planned, likely to be built near Puffer Pond.	Y

B.2	B.1 - FEMA Interview Checklists	Summary	OK?
B.2.1	Changes to the use of the site?	Q 1,2,3,4: FEMA has instituted no changes.	**Y**
B.2.2	Approved conditional exemptions, amendments and/or releases	Q7: No known releases/spills.	Y
B.2.3	Unauthorized uses and activities	Q5: No known trespassing	Y
B.2.4	Review of corrective action to resolve unauthorized uses and activities	(No known need for corrective action).	Y
B.2.5	Overall effectiveness of the institutional controls	Q8: No known activities creating environmental issues.	Y
B.2.6	Status of anticipated future redevelopment or other construction or demolition activities	Plans for the FEMA parcels were not reviewed.	N/A

B.3	B.1 - USAF Interview Checklists	Summary	OK?
B.3.1	Changes to the use of the site?	Q 1,2,3,4,5, 6: No known changes.	**Y**
B.3.2	Approved conditional exemptions, amendments and/or releases	Q7: No known releases. No changes reported through September 2005.	Y
B.3.3	Unauthorized uses and activities	Q5: No known trespassing.	Y
B.3.4	Review of corrective action to resolve unauthorized uses and activities	(No known need for corrective action). No issues reported through September 2005.	Y
B.3.5	Overall effectiveness of the institutional controls	Q8: No known activities creating environmental issues.	Y
B.3.6	Status of anticipated future redevelopment or other construction or demolition activities	Plans for the USAF parcel were not reviewed.	N/A

B.4	B.1 - Maynard DPW Interview Checklists	Summary	OK?
B.4.1	Changes to the use of the site?	Routine maintenance: Intention to create a refuge for turkeys, pheasants, and deer.	**Y**
B.4.2	Approved conditional exemptions, amendments and/or releases	Q7: No known releases/spills.	Y
B.4.3	Unauthorized uses and activities	Q5: All-terrain vehicles are used inside the former annex. No known environmental concerns.	Y
B.4.4	Review of corrective action to resolve unauthorized uses and activities	Regular patrols of the perimeter road by the DPW are complemented by official USFWS patrols.	Y
B.4.5	Overall effectiveness of the institutional controls	Q8: No deterioration noted.	Y
B.4.6	Status of anticipated future redevelopment or other construction or demolition activities	The plan to develop a production well in the vicinity of TW14 has been set aside for now. Its development will require a pipeline at depth below 4 ft and formal applications to DPW/EPA/USACE. No imminent development plans.	Y

INTERVIEWS

Non-Army agencies in control of the Sudbury Annex land parcels are US Fish and Wildlife Service (Interview 1),
Federal Emergency Management Agency (Dept. of Homeland Security) (Interview 2)
The US Air Force (Interview 3: Annual response and Five-Year-Review-Specific responses).
The Maynard Dept of Public Works (Interview 4) was a less formal review of site conditions.
EPA and MassDEP were contacted in the spring of 2006. While no response was received from MassDEP as of May 23, 2006, EPA replied (Interview 5), giving details of what would be expected in the 2006 Five-Year Review.

The agencies were contacted and interviewed as indicated in the following sections.

INTERVIEW 1: US Fish and Wildlife Service (Eight questions)

The USFWS were contacted by e-mail, and they responded in June 2003 and in January 2004. A simple response in January 2004 indicated that the response covering the period June 3, 2003 to January 15 2004 was "No" for all eight questions asked). The USFWS replied on January 5, 2005, to a further request, indicating that there were no changes in the state of the Assabet River National Wildlife Refuge that affected the institutional or other controls in the Site NPL ROD.

In August 2005, USFWS acknowledged the Corps' e-mail informing them of the groundwater sampling schedule for September. They also informed the Corps that the area would be more open to the public, beginning in October 2005, that hunting in the refuge would begin on October 13 2005, that drivers should be advised to use caution since pedestrians might be using the roads, that dogs would not be allowed in the area except for hunting dogs, and that workers in Area 7 (the landfill enclosure) should be locked inside the enclosure while they were working so as to avoid having the public, or hunters, enter the AOC A7 site.

In October 2005, the Corps inspected wells following unusually high water levels. At that time, USACE left a copy of the key to the AOC A7 enclosure with Mike Sowa at the Air Force offices at the Sudbury site, so that this could be collected by USFWS, who needed the key so as to insert a USFWS lock into the chain at the entrance to the AOC A7 enclosure.

On December 7, 2005, USFWS completed a request for updated responses to the annual questionnaire, and the answers are presented below:

1. *Are you aware of any changes that may have occurred to the way the property is used since January 2005?*
   The refuge is now open to the public. Ten miles of trails are now open for wildlife observation, photography and hunting.

2. *Are you aware of any changes that may have occurred to any buildings, boundary walls or fences since January 2005?*
   No

3. *Are you aware of any clearing of trees or bushes that might have occurred since, January 2005?*
   A number of trees were cut along Craven Lane with a hydro-ax and in a small field off of Patrol Road near the East gate(FEMA). Additionally, a number of trees were cut down with chainsaws along the north side of Craven Lane.

4. *The army has a concern with any 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 buildings that might have occurred since January 2005?*

   No.

5. *Are you aware of any trespassing that might have led to any environmental damage since January 2005?*

   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, since January 2005?*

   No.

7. *Are you aware of any spills or dumping processes that may have disturbed or negatively impacted the soils since January 2005?*

   No.

8. *Are there any other circumstances that you are aware of that might be disturbing the soils, especially below four feet, or otherwise negatively affecting the integrity of the institutional controls (fences, landfill caps)?*

   We installed entrance signs and kiosks at the Hudson Road entrance and the North Gate (White Pond Road) entrance, and trail signs that required minor soil disturbance, but nothing of any significance. We removed several invasive Purple Loosestrife plants from the wetland within the AOC 7 site.

   We are proposing to locate a 7,000 square foot Visitor Center and associated infrastructure (well, septic system, utility lines, and parking) along Craven Lane, approximately 0.3 miles from the Hudson Road entrance. This is in the vicinity of buildings labeled T267 and T206 that were removed in 2003. We don't have the exact location yet. A draft environmental assessment is being written and will be released for public review and comment in January 2006. We would appreciate your review and would be happy to meet with you on-site if there are specific concerns we should know about.

The USFWS were contacted again in April 2006 to establish whether they had any updates that should be included in the 2006 Five-Year Review, with particular emphasis on the AOC A7 landfill site, and they responded as shown below.

From: Debra_Kimbrell-Anderson@fws.gov
[mailto:Debra_Kimbrell-Anderson@fws.gov]
Sent: Tuesday, May 23, 2006 10:43 AM
To: Blumeris, Patrick M NAE
Cc: libby_herland@fws.gov; Hugh, Peter NAE; Dan_Stotts@fws.gov
Subject: Re: Sudbury Annex 2006 5-Year Review Updates

Patrick,

Responses to your questions are highlighted in bold below. If you need further information, please let me know.

Debra

Debra Kimbrell-Anderson
Refuge Manager, Assabet River & Oxbow NWR's
Eastern Massachusetts Refuge Complex
(978) 443-4661, x16
(978) 443-2898 FX

-----Original Message-----
From: Blumeris, Patrick M NAE
Sent: Wednesday, April 26, 2006 12:59 PM
To: 'Debra_Kimbrell-Anderson@fws.gov'
Cc: Hugh, Peter NAE; 'libby_herland@fws.gov'
Subject: Sudbury Annex 2006 5-Year Review Updates

Debra:

I have been preparing the 2006 Five-Year Review report for the Fort Devens Sudbury Training Annex and have developed a few questions which will help me complete the report. Your replies will be welcome!

- Has the USFWS decided on a preferred location for the planned visitors' center? Is there a formal document I should cite in my Five-Year Review (and my annual report) to report the "official" choice of the USFWS?

Yes, a site has been selected off of the eastern perimeter road (Craven Lane) and southwest of Puffer Pond for the construction of the Eastern Massachusetts National Wildlife Refuge Complex Visitor Center. The specific location is at the junction of Craven Lane and a bunker road. This is across the road from the building T210 site.

The Environmental Action Statement (EAS) was approved on March 1, 2006 with a finding of no significant impact. The EAS document will be available soon. The site will need to be surveyed for ordnance as it was not included in the earlier Environmental Baseline Survey conducted by the Army that covered from the surface down four feet.

This comment concerning excavation and ordnance led to an update from USFWS as shown below:

> *From: Libby_Herland@fws.gov [mailto:Libby_Herland@fws.gov]*
> *Sent: Tuesday, May 23, 2006 12:31 PM*
> *To: Debra_Kimbrell-Anderson@fws.gov*
> *Cc: Dan_Stotts@fws.gov; Blumeris, Patrick M NAE; Hugh, Peter NAE*
> *Subject: Re: Sudbury Annex 2006 5-Year Review Updates*
>
> *Debra:*
>
> *As a followup to your earlier email to Patrick, we have not yet determined whether an ordnance survey will be conducted at the visitor center site or along Craven Lane. That area was not previously surveyed by the Army because it had never been used in such a way where Ordnance and Explosives might be found. Other parts of the base were surveyed; no OE was ever found in those investigations. The risk is extremely low but no one can state categorically that there is no UXO below 4 feet deep anywhere on the refuge. We are in the process of determining the appropriate action we need to take on this issue and will hopefully have a final decision within a month.*
>
> ---
>
> *Libby Herland, Project Leader*
> *Eastern Massachusetts NWR Complex*
> *73 Weir Hill Road*
> *Sudbury, MA 01776*
> *Voice: 978-443-4661 x11*
> *Fax: 978-443-2898*
> *Home V/Home F: 508-845-1587*
> *http://easternmanwrcomplex.fws.gov*

- Are there any changes (Construction; Excavation; changes in how the site is used) to the USFWS parts of the former Annex (since your last questionnaire response to us)?

The refuge was opened to the public in March 2005. Trails totaling approximately 12 miles have been opened for walking, wildlife observation and wildlife

photography. The trails follow existing roads and pathways within the refuge. In the fall of 2005 a hunt program was implemented at Assabet River NWR and included white-tailed deer (shotgun and bow), turkey shotgun and bow), American Woodcock, ruffed grouse, cottontail rabbit and gray squirrel. The hunt program follows Massachusetts State and federal regulations. The hunt program will be assessed annually, necessary adjustments made and annual hunt information made available prior to each hunting season.

- Are there any issues that you would like me to mention in the review?

We have installed a number of signs but, none should have disturbed or negatively impacted the soils, particularly below a depth of four feet. Invasive plant control continued in 2005, none of the activities should have negatively impacted soils.

A small number of trees were cut and/or removed throughout the refuge without negative impact to soils.

Some interior fencing, razor wire and trash was removed from the refuge without negative impact to soils and no disturbance to the AOC7 site.

Trespass did occur on the refuge during 2005, some resulting in environmental damage. This was limited to minor tree cutting, surface disturbance from dirt bike and ATV trespass, but none that would affect the institutional controls on the refuge.

A culvert was installed at Taylor Brook on Old Puffer Road to reduce flooding.

INTERVIEW 2: Federal Emergency Management Agency (Homeland Security) (Eight questions)

The Federal Emergency Management Agency were contacted by e-mail on October 5, 2005, and they responded as recorded below.

From: *Perkins, Roger [mailto:Roger.Perkins@dhs.gov]*
Sent: *Thursday, October 06, 2005 9:47 AM*
To: *Blumeris, Patrick M NAE*
Cc: *Godfrey, Randy N NAE; Greene, Nathan; Iorio, Maryellen NAE; Donahue, Michael*
Subject: *RE: Sudbury Annex: Properties under FEMA control*

Hello Patrick,

We are pleased to report that there is no change in status for all items. 1 through 8. We are aware of no additional circumstances that may be pertinent.

Regards.

Roger Perkins

Telecommunications & Facility Management

Federal Regional Center
130 Old Marlboro Road, Building 1
Maynard, MA 01754-2108
Office (978) 461-5360
24/7 Cell (978) 793-1999
SatPhone (254) 378-2768

From: *Blumeris, Patrick M NAE [mailto:Patrick.M.Blumeris@nae02.usace.army.mil]*
Sent: *Wednesday, October 05, 2005 3:59 PM*
To: *Perkins, Roger*
Cc: *Godfrey, Randy N NAE; Greene, Nathan; Iorio, Maryellen NAE*
Subject: *Sudbury Annex: Properties under FEMA control*

Roger:

It's once again time for me to update the institutional controls section of the next Sudbury Training Annex annual report, and so:

Please let me know if there is any change to the state of the property that FEMA operates at the former Sudbury Training Annex facility.

Our concerns are with changes in land use, trespassing, and excavations especially below 4 feet depth. You most recently replied to these questions on September 21 2004.

Our 8 questions are:

1. Are you aware of any changes that may have occurred to the way the property is used since September 2004?

2. Are you aware of any changes that may have occurred to any buildings, boundary walls or fences since September 2004?

3. Are you aware of any clearing of trees or bushes that might have occurred since September 2004?

4. The army has a concern with any 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 buildings that might have occurred since September 2004?

5. Are you aware of any trespassing that might have led to any environmental damage since September 2004?

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, since September 2004?

7. Are you aware of any spills or dumping processes that may have disturbed or negatively impacted the soils since September 2004?

8. Are there any other circumstances that you are aware of that might be disturbing the soils, especially below four feet, or otherwise negatively affecting the integrity of the institutional controls (fences, landfill caps)?

Patrick Blumeris, Hydraulic Engineer
US Army Corps of Engineers
696 Virginia Road
Concord MA 01742
Tel 978-318-8094

FEMA was contacted again in May 2006 to establish whether they had any updates that should be included in the 2006 Five-Year Review, with particular emphasis on the AOC A7 landfill site, but their response was not received as of May 17, 2006.

Details of this contact follow:

From: *Blumeris, Patrick M NAE*
Sent: *Tuesday, May 09, 2006 3:02 PM*
To: *'Roger.Perkins@dhs.gov'*
Cc: *Godfrey, Randy N NAE; 'Nathan.Greene@dhs.gov'; 'Michael.Donahue@dhs.gov'; Hugh, Peter NAE*
Subject: *Sudbury Annex: 2006 Five-Year Review Inputs (FEMA)*

For Roger Perkins at FEMA:

I am writing to ask for any inputs you would want to make into our five-year review of the Sudbury Annex Five-Year Review. I am drafting our report based largely on the annual reports we have received from field inspections, groundwater testing, and the interview questions I have been sending to you and others on an annual basis. It is possible that I am not capturing the latest information, or that you are aware of relevant information that the "routine" questions would not capture.

A list of standard questions is included here. They are focused on the landfill site that we monitor (AOC A7), not on the FEMA areas covered by our annual questionnaire.

1. What is your overall impression of the clean-up efforts at the Sudbury Annex AOC A7 Site? (general sentiment)
2. Are you aware of any community concerns regarding the site administration related to clean-up activities? If so, please give details.
3. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
4. Are you aware of any issues that may require changes to the completed remedial actions or the decision documents?
5. Have any problems or difficulties been encountered regarding land-use/ institutional controls?
6. Do you feel the completed remedies are functioning as expected? Why or why not?
7. Are you aware of any issues, which may call into question the site's short-term or long-term protectiveness?
8. Are you aware if there are any trends that indicate contaminant levels are increasing or decreasing?
9. Is there a continuous O&M presence? Please describe staff and frequency of site inspections and activities.
10. Have there been any significant changes in O&M requirements, maintenance schedules, or sampling routines? If so, do they affect the protectiveness or effectiveness of the remedies?
11. Have there been unexpected O&M difficulties or costs at the site? If so, please give details.
12. Do you have any other comments, concerns or recommendations regarding the site?

FEMA last reported on October 6 2005 with negative responses to all of the "usual" questions concerning changes to the land use, excavations, and trespassing at the FEMA-controlled areas.

The scope of our five-year review is summarized below, taken from a draft of a public notice. I had planned to summarize your annual responses to the questions I had asked, but I am sending this note out in case there is some issue that would not be discussed if I limited our review to your responses to the annual questions. If you have any information that needs to be added to the five-year review, please contact me!

Thank you.

Patrick Blumeris
978-318-8094
patrick.m.blumeris@usace.army.mil

Draft public notice follows:
The U.S. Army Corps of Engineers is preparing the second Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Five-Year Review of the remedial actions

implemented for the Sudbury Training Area, Sudbury Massachusetts. The initial Five-Year Review Report was completed by Roy F. Weston in 2001, under contract with the U.S. Army Corps of Engineers.

The triggering action for the statutory review is the initiation date of the construction of the landfill cap in Area of Concern (AOC) A7 on July 31, 1996. By statute, remedial actions performed under Section 121 of the Comprehensive Environmental Compensation and Liability Act (CERCLA) and the Reauthorization Act of 1986 (SARA), require site reviews no more than five years after initiation of a remedial action and every five years thereafter if upon completion of the remedial action, hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The purpose of a five-year review is to evaluate the performance of the site remedy in order to determine if the remedy is or will be protective of human health and the environment. Protectiveness is generally defined in the National Contingency Plan (NCP) by the risk range and the hazard index.

Evaluation of the site remedy and the determination of protectiveness will be based on the site ROD and Explanation of Significant Differences (ESD) if applicable, Applicable or Relevant and Appropriate Requirements (ARARs), long term monitoring, operation and maintenance data and inspections of the sites. Each site will be visited to assess whether the remedy remains operational and functional, in compliance, and whether existing institutional controls are appropriate and/or whether additional institutional controls are recommended. The baseline risk assessment will be reviewed for appropriateness based on available annual monitoring data, ARARs review, results of the site visit, and other pertinent data, with a conclusion made concerning the protectiveness of the remedy. The review will also identify any deficiencies, if any are found, and make recommendations to address them.

The second Draft Five Year Review Report will be available for Public review on June 17, 2006. Comments are to be provided to the Devens BRAC Environmental Coordinator by July 16, 2006. More information relating to this Report, the previous Five-Year Review Report, and/or other BRAC environmental remediation activities at Devens, is available from the Devens BRAC Environmental Coordinator, Mr. Bob Simeone at (978) 796-2205.

INTERVIEW 3: US Air Force (Eight questions)

The US Air Force was contacted primarily by telephone, although there were some e-mail contacts that were used to find the correct person to ask.

For the USAF section of the former Fort Devens Sudbury Training Annex:

Patrick Blumeris had contacted Robert Todd in June 2003 and January 2004, and the report of those conversations is included in the 2003 annual report.

Bob Todd and Patrick Blumeris had a telephone conversation on 10/27/2004 and the resulting series of negative responses to the questions was noted in the 2004 annual report.

In 2005, the Air Force was contacted by e-mail and the set of eight questions generated a summary response that there had been no changes. The e-mail exchange is copied out below:

> ***From:*** *Todd Bob A Ctr AFRL/VSOSE [mailto:Bob.Todd.ctr@hanscom.af.mil]*
> ***Sent:*** *Wednesday, October 19, 2005 7:00 AM*
> ***To:*** *Blumeris, Patrick M NAE*
> ***Subject:*** *RE: USAF property at Sudbury Training Annex: USAF Property*
>
> *Patrick,*
>
> *There have been no changes since we last corresponded.*
>
> *Cheers,*
>
> *Bob*
>
> *-----Original Message-----*
> ***From:*** *Blumeris, Patrick M NAE [mailto:Patrick.M.Blumeris@nae02.usace.army.mil]*
> ***Sent:*** *Wednesday, October 05, 2005 4:36 PM*
> ***To:*** *Todd Bob A Ctr AFRL/VSOSE*
> ***Cc:*** *Quinty Paul E Civ AFRL/VSOSE; Sowa Michael Civ AFRL/SNHE; Salvas Raymond Ctr 66 MSG/CEKV; Godfrey, Randy N NAE; Iorio, Maryellen NAE*
> ***Subject:*** *USAF property at Sudbury Training Annex: USAF Property*
>
> *Bob:*
>
> *I am updating the Army Corps records on institutional controls at the former Sudbury Training Annex, and so am asking you if there have been any changes to the section of the former annex that is now under Air Force control. You last answered these questions on October 27, 2004.*
>
> *The last set of replies was a set of "No" responses except for one more detailed response concerning roof repairs that had been done in 2002, with no impacts to the environment.*
>
> *Once again, our eight questions are:*
> *1. Are you aware of any changes that may have occurred to the way the property is used since October 2004?*
>
> *2. Are you aware of changes that may have occurred to any buildings, boundary walls or fences since October 2004?*

3. Are you aware of any clearing of trees or bushes that might have occurred at the site since October 2004?

4. The army has a concern with any activities that might disturb or negatively impact the soils, especially below a depth of 4 feet: are you aware of any new construction or repairs to existing buildings that might have occurred since October 2004?

5. Are you aware of any trespassing that might have led to any environmental damage since October 2004?

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, since October 2004?

7. Are you aware of any spills or dumping processes or accidents that may have disturbed or negatively impacted the soils since October 2004?

8. Are there any other circumstances that you are aware of that might be disturbing the soils, especially below 4 feet, or otherwise negatively affecting the integrity of the institutional controls (fences, landfill caps)?

Please let me know!

Patrick Blumeris, Hydraulic Engineer
US Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

In May 2006, Patrick Blumeris contacted the USAF to learn of any more recent observations, either at the USAF facility or at AOC A7.

The e-mail exchange is reported below:

From: *Todd Bob A Ctr AFRL/VSOSE [mailto:Bob.Todd.ctr@hanscom.af.mil]*
Sent: *Wednesday, May 10, 2006 7:38 AM*
To: *Blumeris, Patrick M NAE*
Cc: *Sowa Michael Civ AFRL/SNHE*
Subject: *RE: Sudbury Annex: 2006 Five-Year Review Inputs (USAF)*

Good morning, Patrick.

We have nothing to add that I am aware of. There have been no changes on the USAF side of the Sudbury site since our last correspondence.

Cheers,

Bob

From: *Blumeris, Patrick M NAE*
Sent: *Tuesday, May 09, 2006 3:03 PM*

To: *'Michael.Sowa@hanscom.af.mil'; 'Bob.Todd@hanscom.af.mil'*
Cc: *'Paul.Quinty@hanscom.af.mil'; 'Raymond.Salvas@hanscom.af.mil'; Godfrey, Randy N NAE; Hugh, Peter NAE*
Subject: *Sudbury Annex: 2006 Five-Year Review Inputs (USAF)*

For Michael Sowa and Bob Todd at US Air Force:

I am writing to ask for any inputs you would want to make into our five-year review of the Sudbury Annex Five-Year Review. I am drafting our report based largely on the annual reports we have received from field inspections, groundwater testing, and the interview questions I have been sending to you and others on an annual basis. It is possible that I am not capturing the latest information, or that you are aware of relevant information that the "routine" questions would not capture.

A list of standard questions is included here. They are focused on the landfill site that we monitor (AOC A7), not on the USAF areas covered by our annual questionnaire.

1. What is your overall impression of the clean-up efforts at the Sudbury Annex AOC A7 Site? (general sentiment)
2. Are you aware of any community concerns regarding the site administration related to clean-up activities? If so, please give details.

3. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
4. Are you aware of any issues that may require changes to the completed remedial actions or the decision documents?
5. Have any problems or difficulties been encountered regarding land-use/ institutional controls?
6. Do you feel the completed remedies are functioning as expected? Why or why not?
7. Are you aware of any issues, which may call into question the site's short-term or long-term protectiveness?
8. Are you aware if there are any trends that indicate contaminant levels are increasing or decreasing?
9. Is there a continuous O&M presence? Please describe staff and frequency of site inspections and activities.
10. Have there been any significant changes in O&M requirements, maintenance schedules, or sampling routines? If so, do they affect the protectiveness or effectiveness of the remedies?

11. Have there been unexpected O&M difficulties or costs at the site? If so, please give details.
12. Do you have any other comments, concerns or recommendations regarding the site?

The Air Force last reported on October 19, 2005 with negative responses to all of the "usual" questions concerning changes to the land use, excavations, and trespassing at the FEMA-controlled areas.

The scope of our five-year review is summarized below, taken from a draft of a public notice. I had planned to summarize your annual responses to the questions I had asked, but I am sending this note out in case there is some issue that would not be discussed if I limited our review to your responses to the annual questions. If you have any information that needs to be added to the five-year review, please contact me!

Thank you.

Patrick Blumeris
978-318-8094
patrick.m.blumeris@usace.army.mil

Draft public notice follows:
The U.S. Army Corps of Engineers is preparing the second Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Five-Year Review of the remedial actions implemented for the Sudbury Training Area, Sudbury Massachusetts. The initial Five-Year Review Report was completed by Roy F. Weston in 2001, under contract with the U.S. Army Corps of Engineers.

The triggering action for the statutory review is the initiation date of the construction of the landfill cap in Area of Concern (AOC) A7 on July 31, 1996. By statute, remedial actions performed under Section 121 of the Comprehensive Environmental Compensation and Liability Act (CERCLA) and the Reauthorization Act of 1986 (SARA), require site reviews no more than five years after initiation of a remedial action and every five years thereafter if upon completion of the remedial action, hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The purpose of a five-year review is to evaluate the performance of the site remedy in order to determine if the remedy is or will be protective of human health and the environment. Protectiveness is generally defined in the National Contingency Plan (NCP) by the risk range and the hazard index.

Evaluation of the site remedy and the determination of protectiveness will be based on the site ROD and Explanation of Significant Differences (ESD) if applicable, Applicable or Relevant and Appropriate Requirements (ARARs), long term monitoring, operation and maintenance data and inspections of the sites. Each site will be visited to assess whether the remedy remains operational and functional, in compliance, and whether existing institutional controls are appropriate and/or whether additional institutional controls are recommended. The baseline risk assessment will be reviewed for appropriateness based on available annual monitoring data, ARARs review, results of the site visit, and other pertinent data, with a conclusion made concerning the protectiveness of the remedy. The review will also identify any deficiencies, if any are found, and make recommendations to address them.

The second Draft Five Year Review Report will be available for Public review on June 17, 2006. Comments are to be provided to the Devens BRAC Environmental Coordinator by July 16, 2006. More information relating to this Report, the previous Five-Year Review Report, and/or other BRAC environmental remediation activities at Devens, is available from the Devens BRAC Environmental Coordinator, Mr. Bob Simeone at (978) 796-2205.

INTERVIEW 4: Maynard DPW

The Maynard Town Superintendent Mr Walter Sokolowski (978-897-1017) called Patrick Blumeris June 11, 2003 in reply to a previous telephone call. (The call was not repeated for 2004 or 2005.)

In the conversation that followed, Mr Sokolowski indicated that the Town of Maynard still planned to develop a production well in the vicinity of TW-14, but that the plans were not imminent. Bringing the well on-line would require a pipeline (probably 4 ½ to 5 feet deep) along a route that would need to be surveyed and approved (USEPA, USACE, USFWS, Massachusetts DEP).

Maynard DPW personnel often inspected the forested area where the pipeline might be installed and saw no obvious signs of vandalism, either there or in the enclosed main Annex area, in which they drive the perimeter road about every second week. The USFWS also patrols this area, and the DPW and USFWS are on friendly terms.

Routine maintenance by USFWS included clearing exercises in the Assabet River Wildlife Refuge. The equipment used, a Hydro-Ax, was available for this purpose at intervals of about every two years, at which time areas near the roads and where habitat needed to be cut back for intended species were cleared as appropriate.

The deer and turkey populations in the annex are reported as healthy, but the pheasant population is less visible (WS postulated that it was not yet "established").

The active FEMA office at the eastern side of the former Annex had on several recent occasions increased its security posture. This would most likely deter trespassers and would-be vandals. There was known unauthorized all-terrain-vehicle traffic in the former Annex, but there was no known (visible) damage as a result, and WS was unaware of any dumping events.

INTERVIEW 5: US Environmental Protection Agency

EPA had been reviewing annual reports from the start of the monitoring program, but they were contacted separately so that any particular concerns of the EPA could be integrated into the 2006 Five-Year Review report. EPA indicated that the report should focus on the AOC A7 landfill site, where questions concerning the efficacy of the remedy should be added into the text that had been used for the 2001 Five-Year Review. EPA also responded on 13 June 2006 to a query concerning the attention to be paid to the Institutional Controls, indicating that two recent EPA reports (September 2004 OSWER 9355.0-106 and October 2005 OSWER 9355.0-105) might be useful.

Details of the e-mail exchanges are included in the pages that follow.

April 27 2006 Resolution on Treating Sites other than AOC A7:

From: williams.christine@epamail.epa.gov
[mailto:williams.christine@epamail.epa.gov]
Sent: Thursday, April 27, 2006 3:44 PM
To: Blumeris, Patrick M NAE
Subject: RE: Sudbury Annex 5-Year Review Updates

Ok, I see what the question was, the 5 OUs finalized the AOCs with RODs rather than NFADDs. I believe the text of the first 5-yr review is in good shape, just need to add the 3 question/answers about remedy protectiveness from the new guidance for A-7.

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

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

From: Patrick.M.Blumeris@nae02.usace.army.mil
To: Christine Williams/R1/USEPA/US@EPA

04/27/2006 03:34 PM
Subject: RE: Sudbury Annex 5-Year Review Updates

Thanks, Christine.

There had been 5 OUs for which several AOCs were listed. The other AOCs (not in these 5 OUs) were reported in 2001 as being "Sites with no further action decision documents." My concern had been that I should be looking for equivalent NFADDs for the AOCs at the 5 OUs, but I now see that the last 5-year review maintains that the sites are not subject to five year review (so I am leaving this language essentially unchanged in the updated 5-year report).

Patrick 978-318-8094

-----Original Message-----
From: williams.christine@epamail.epa.gov
[mailto:williams.christine@epamail.epa.gov]
Sent: Thursday, April 27, 2006 2:10 PM

To: Blumeris, Patrick M NAE
Subject: Re: Sudbury Annex 5-Year Review Updates

The delisting was in the fed register, Nov. 30, 2001, p. 59716.

not sure what you mean by updated OUs/NFADDs

I'll be out of the office until the 8th

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

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

"Blumeris, Patrick M NAE"
Patrick.M.Blumeris@nae02.usace.army.mil

To Christine Williams/R1/USEPA/US@EPA
cc "Hugh, Peter NAE" Peter.Hugh@nae02.usace.army.mil
04/26/2006 11:41 AM
Subject: Sudbury Annex 5-Year Review Updates

Christine:

I have been preparing the 2006 Five-Year Review report for the Fort Devens Sudbury Annex and have generated the following questions which will help me complete the report. Your replies to these questions will welcome!

- *Do you have a copy of a document showing that the site is no longer on the Superfund list? I have in the past referenced one of our internal publications, but would rather have an official agreement if I can find one.*
- *Some of the AOCs were in the five OUs: have any of these been updated since the 2001 five-year review report?*
- *In the aftermath of the AOC A7 landfill cap completion, are there any further NFADDs that I should include in my write-up?*
- *Are there any other issues that you would like to incorporate into the review?*

Please let me know.

Thanks!

Patrick Blumeris 978-318-8094

June 13 2006 Resolution on Recent EPA Guidance for Institutional Controls:
Ms Williams suggested links to OSWER 9355.0-106 (September 2004) and to OSWER 9355.0-105 (October 2005), and she attached a June 2005 draft of a guide concerning institutional controls and ROD preparation.

From: williams.christine@epamail.epa.gov
[mailto:williams.christine@epamail.epa.gov]
Sent: Tuesday, June 13, 2006 4:51 PM
To: Blumeris, Patrick M NAE
Cc: Cain, Lawrence G NAE; Hugh, Peter NAE; Godfrey, Randy N NAE
Subject: Re: Sudbury Annex 2006 5-Year Review guidance

2005 IC guidance - [attachment "5YrReviewICStrategy.doc" deleted by Christine Williams/R1/USEPA/US] has not been made final yet as I can see...

[attachment "RODRDchecklistfinSept7.wpd" deleted by Christine Williams/R1/USEPA/US] [attachment "ROD Interim Guidance.pdf" deleted by Christine Williams/R1/USEPA/US]

Here's the ck lst we're still using for R ODS...the document I deleted had a similar ck lst in it.

(See attached file: finalchecklist.doc)

Try these:

http://www.epa.gov/superfund/action/ic/icstrategy.pdf

or
URL:http://www.epa.gov/fedfac/pdf/pcc_strategy_final.pdf (PDF)

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

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

From: Blumeris, Patrick M NAE
Sent: Tuesday, June 13, 2006 4:02 PM
To: 'williams.christine@epamail.epa.gov'
Cc: Cain, Lawrence G NAE; Godfrey, Randy N NAE; Hugh, Peter NAE
Subject: Sudbury Annex 2006 5-Year Review guidance

Christine:

I have been asked to ensure that the 2006 Five-Year Report for Sudbury complies with a 2005 guidance document for 5-year reviews, with attention to the institutional controls requirements.

We have been unable to confirm what the new 2005 guidance document might be, although we have located a bibliography that EPA compiled in 2005. Is there another reference that we might have missed?

Please let me know!

Thanks.

Patrick Blumeris 978-318-8094

APPENDIX D

Federal Land Transfer Documents

Details of the transfer documents to three Federal agencies are included in the pages that follow. Documents reproduced here include:

USFWS:
Memorandum of Agreement between the United States Army and the United States Fish and Wildlife Service for the Transfer of Military Property, 28 September 2000

USAF:
Transfer Agreement between the Department of the Army and the Department of the Air Force for a Portion of the Former Fort Devens, Massachusetts 3 June 2002

Notary Public affidavit 3 June 2002 regarding the Army signatory

FEMA:
Modification to Memorandum of Agreement between the Department of the Army and the Federal Emergency Management Agency for the Transfer of Real Property at the Sudbury Training Annex, Massachusetts, signed 3 July 2003 by Joseph W. Whitaker for the Department of the Army and 29 July 2003 by Michael D. Brown for the Federal Emergency Management Agency.
Letter of Transfer for a Portion of the Former Fort Devens, Massachusetts to the Federal Emergency Management Agency, March 31, 2003; Memorandum of Agreement between the Department of the Army and the Federal Emergency Management Agency for the Transfer of Real Property at the Sudbury Training Annex, Massachusetts, March 21, 2003

Notary Public affidavit 21 March 2003 regarding the Army signatory

Notary Public affidavit 31 March 2003 regarding the FEMA signatory

MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES ARMY
AND THE UNITED STATES FISH AND WILDLIFE SERVICE
FOR THE TRANSFER OF
MILITARY PROPERTY

The United States Fish and Wildlife Service (FWS) and the United States Army (the Army) hereby enter into a Memorandum of Agreement (MOA) to clarify responsibilities and requirements of both parties pursuant to the transfer of real property at the Devens Reserve Forces Training Area (Devens RFTA), Sudbury Training Annex, Massachusetts, from the Army to the FWS. The authority to enter into this MOA is Defense Base Realignment and Closure (BRAC) Act of 1990, Public Law 101-510, 10 U.S.C. 2687 note and 16 U.S.C. 667b.

A. INTRODUCTION

Fort Devens, Massachusetts closed on 31 March 1996. The Devens RFTA was established on April 1 1996. The property to be transferred to the FWS is part of the Devens RFTA. The Army will transfer as excess property a parcel of approximately 2,205.2 acres to the FWS, which intends to use it as a National Wildlife Refuge. The boundaries of the property, hereinafter referred to as the Transfer Parcel or the Parcel (remaining BRAC parcels less 27(7) PS and 39(4) PS/PR) are identified in the official survey and legal description dated 25 September 1997 and 24 April 1997. Copies of these documents are on file with the U.S. Army Corps of Engineers, New England District, Concord, Massachusetts.

The FWS has requested transfer of the Parcel as excess Federal property, pursuant to the Federal Property and Administrative Services Act of 1949 (FPASA), 40 U.S.C. Sections 471-544 and 16 U.S.C. Section 667b for inclusion in the National Wildlife Refuge System based upon the FWS's determination that the Parcel has particular value in the execution of the national migratory bird management program. Both parties agree that the transfer of this property includes specific responsibilities and requirements as outlined in this MOA.

B. GENERAL TERMS AND CONDITIONS

1. The FWS acceptance of the Transfer Parcel, the buildings located on the Parcel and fixed equipment is at no cost to the FWS.

2. No provisions of this agreement shall be interpreted or applied so as to obligate the FWS or the Army in excess or advance of appropriations or otherwise so as to result in a violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.

EXHIBIT B

NVIRONMENTAL COMPLIANCE RESPONSIBILITIES

1. Both the Army and the FWS acknowledge that the Sudbury Training Annex is a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. Sudbury Training Annex has been on the NPL since February 1990. Since that time, the CERCLA- regulated environmental investigations have been underway, and in August 1996, remedial actions to effect environmental cleanup and restoration began. The Transfer Parcel contains 74 Study Areas (SA) of potential environmental contamination. Of the 74 SAs, 62 have No Further Action Decision Documents (NFADDs) signed, 6 have No Further CERCLA Action Record Of Decision (ROD) signed, 4 have a Source Control ROD and/or Management Of Migration ROD signed, 1 is pending a Removal Action and 1 is pending sampling/analysis results. The Army agrees to provide the FWS copies of all work plans and reports relating to pending actions at SA's P27 and P58 at the same time said plans and reports are provided to Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MDEP)

The Army shall provide the FWS with a copy of the Sudbury Training Annex Federal Facility Agreement (FFA) entered into by the United States EPA Region 1 and the Army on 13 May 1991, and made effective on 15 November 1991. The Army agrees to provide the FWS with prompt Notice of the initiation of any negotiations to amend the FFA. The Army agrees to provide the FWS with any future amendments to the FFA within 30 days of execution of such amendments. The FWS agrees to take no action inconsistent with the terms of the FFA. The environmental remediation of the Sudbury Training Annex National Priority List (NPL) Site is being undertaken by the Army in accordance with the FFA negotiated with the EPA and in cooperation with MDEP. The Army and FWS agree that, should a conflict arise between the terms of the FFA as it presently exists or may be amended, and the provisions of this MOA, the terms of the FFA will take precedence over the provisions of this MOA. The Army will inform the FWS of any such conflicts affecting the FWS use of the Transfer Parcel. The Army reserves the right to access the premises as it deems necessary to fulfill its responsibilities under the FFA, the Army's Installation Restoration Program and this MOA.

2. Except as specifically provided for herein, the FWS does not assume any of the United States Government's present or future potential liability or responsibility for hazardous materials, hazardous substances, hazardous wastes, petroleum or any other contamination existing on or emanating from the Transfer Parcel, attributable to the Army's activities, on the date the Parcel is transferred to the FWS (hereinafter referred to as the Date of Transfer). In addition, except as specifically provided herein, the FWS does not assume, and shall not have after the Date of Transfer, any obligation to undertake the United States Government's defense or payment of any claim or action, whether in existence now or brought in the future, caused by or arising out of the use, storage, management, release, or disposal of any hazardous material, hazardous substance, hazardous waste, petroleum product or derivative or any other contaminant (including any use, storage, management, release, or disposal of such that occurs during any subsequent environmental remediation) on any portion of the Transfer Parcel prior to the Date of Transfer,

including hazardous material, hazardous substance, hazardous waste, petroleum or any other contamination not presently known but subsequently discovered and determined to be attributable to activities or conditions on the Parcel prior to the Date of Transfer.

3. With respect to hazardous material, hazardous substance, hazardous waste, petroleum or any other contamination existing on or emanating from the Transfer Parcel on the Date of Transfer, except as otherwise specifically provided herein, the Army warrants that it shall comply with and retain all of the United States Government's responsibility and present and potential liability, as required by law and regulation, for funding and implementing actions including, but not limited to, investigations, sampling, testing, cleanup, restoration, maintenance, monitoring, closure, five-year reviews, site inspections, removal actions, remedial actions, corrective actions and any other actions necessary to ensure the protection of human health and the environment (all actions to be so funded and implemented hereinafter collectively referred to as Response Actions).

Should a release or threatened release of any hazardous material, hazardous substance, hazardous waste, petroleum derivative or other contaminant, attributable to the Army's activities, occur on the Transfer Parcel after the Date of Transfer, the Army warrants that it shall be responsible for conducting all Response Actions necessary to protect human health and the environment in accordance with applicable laws and regulations. Except as otherwise specifically provided herein, the FWS has not assumed and shall assume no liability or costs arising out of, or related to, such contamination.

The Army shall not be liable for any claims arising out of or in any way predicated on release of any hazardous substance on the Transfer Parcel occurring after the Date of Transfer where such substance was placed on the Transfer Parcel by the FWS, its successors or assigns, its agents, contractors, invitees, or its lessees or sublessees or third parties after the Date of Transfer. This paragraph shall not affect the Army's responsibilities to conduct Response Actions that are required by applicable laws and regulations.

4. The Army hereby reserves an easement and right of access to and over any and all portions of the Transfer Parcel for itself and its officers, agents, employees and contractors, for purposes of conducting Response Actions after the Date of Transfer in order to fulfill the Army's environmental responsibilities under this Agreement, the FFA (including Section IX - ACCESS of the FFA), and applicable law. It is the intention of the Army and the FWS that such easement and right of access shall run with the land. In exercising this easement and right of access, except in case of imminent endangerment to human health or the environment, the Army shall give the FWS or the then record owner of the affected portion(s) of the Transfer Parcel reasonable prior written notice of the Response Action(s) to be conducted on the Transfer Parcel, and shall use reasonable means, to avoid and/or minimize interference with the FWS's or such record owner's use of the Transfer Parcel. Subject to the provisions of this Paragraph, and except as otherwise provided for by law, the FWS, such record owner, and any other person shall have no claim or cause of action against the Army, or any officer, agent, employee or contractor of the Army, for interference with the use of the Transfer Parcel based upon Response Actions taken under this Subsection.

a. Nothing in this Agreement shall limit or otherwise affect the Army's, EPA's or MDEP's respective rights of access to and over any and all portions of the Transfer Parcel under applicable law for purposes including but not limited to:

(i) conducting oversight activities, including but not limited to investigations, sampling, testing, monitoring, verification of data or information submitted to EPA or MDEP, and/or site inspections, in order to monitor the effectiveness of Response Actions and/or the protectiveness of any remedy which is required by (a) any ROD or amendments thereto, which ROD was approved by the Army and EPA and issued by the Army pursuant to CERCLA or the FFA and the modifications thereto before or after the Date of Transfer, or (b) any decision document approved by MDEP and issued by the Army under applicable state law before or after the Date of Transfer;

(ii) Performing five-year reviews as required by CERCLA, and

(iii) Taking additional Response Actions in accordance with applicable law and the FFA.

b. The FWS covenants on behalf of itself and its successors and assigns that the Army and EPA shall have, to and over the Transfer Parcel, those rights of access set forth in Section IX- ACCESS of the FFA in order to effectuate the purposes of the FFA in connection with any Study Area or Area of Contamination (as that term is defined under the FFA), including where the Transfer Parcel itself becomes a Study Area or Area of Contamination after the Date of Transfer.

c. The Army and EPA and their agents, employees, and contractors shall have access to and over the Transfer Parcel as may be necessary to conduct any Response Action pursuant to CERCLA or the FFA found to be necessary, before or after the Date of Transfer, on the Transfer Parcel or on other property comprising the Sudbury Training Annex NPL site. This reservation includes the right of access to and use of, to the extent permitted by law, any available utilities at reasonable cost to the Army or EPA.

d. In exercising the rights hereunder, the Army and EPA shall give the FWS or its successors or assigns reasonable prior written notice of Response Actions taken on the Transfer Parcel under the FFA and shall, to the extent reasonable, consistent with the FFA, and at no additional cost to the United States, endeavor to minimize any disruption to the FWS, or its successors' or assigns', use of the Transfer Parcel.

e. The FWS agrees that notwithstanding any other provision of this Agreement, except as otherwise provided by law, the Army assumes no liability, should implementation of the FFA interfere with the use of the Transfer Parcel. Except as otherwise provided by law, the FWS and its successors and assigns shall have no claim on account of any such interference against the Army or EPA or any officer, agent, employee, or contractor thereof.

f. Prior to the determination by the Army and EPA that all remedial action is complete under CERCLA and the FFA for the Sudbury Training Annex NPL site, (i) FWS, its successors and assigns shall not undertake activities on the Transfer Parcel that would interfere with or impede the completion of the CERCLA cleanup at the Sudbury Training Annex NPL site, and shall give prior written notice to the Army and EPA of any construction, alterations, or similar work on the Transfer Parcel that may interfere with or impede said cleanup, and (ii) the FWS shall comply with any institutional controls established or put in place by the Army relating to the Transfer Parcel which are required by any ROD or amendments thereto, or other applicable land use controls related to the Transfer Parcel, which ROD was approved by the Army and EPA and issued by the Army pursuant to CERCLA or the FFA before or after the Date of Transfer. Additionally, the FWS shall ensure that any leasehold it grants in the Transfer Parcel or any fee interest conveyance of any portion thereof provides for legally binding compliance with the institutional controls required by any such ROD.

g. For any portion of the Transfer Parcel subject to a Response Action under CERCLA or the FFA, prior to the conveyance of an interest therein, the FWS and its successors and assigns (i) shall include in all conveyance documents provisions for allowing the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to CERCLA or the FFA on said portion of the Transfer Parcel, and (ii) shall notify the Army and EPA by certified mail at least sixty (60) days prior to any such conveyance of an interest in said property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to CERCLA or the FFA.

h. Prior to the determination by the Army and EPA that all remedial action under CERCLA and the FFA is complete for the Sudbury Training Annex NPL site, the FWS and all subsequent grantees or transferees of an interest in any portion of the Transfer Parcel will provide copies of the instrument evidencing such transaction to EPA and the Army by certified mail, within fourteen (14) days after the effective date of such transaction.

i. The FWS and all such subsequent grantees or transferees shall include the provisions of this Subsection C.4 in all subsequent lease, transfer, or conveyance documents related to the Transfer Parcel or any portion thereof that are entered into prior to a determination by the Army and EPA that all remedial action is complete at the Sudbury Training Annex NPL site.

The FWS acknowledges that arsenic-based herbicides were applied in the vicinity of the fence-line along Patrol Road and on the former railroad beds on the northern and southern portions of the Sudbury Annex, and that the Army has concluded, after completing a facility-wide investigation, that the resulting concentrations of arsenic in the soil do not pose an unacceptable risk to human health or the environment based on the future land use of the Transfer Parcel as a National Wildlife Refuge. The FWS covenants on behalf of itself and its successors and assigns that no portion of a fifty (50) foot strip of land on either side of the center of the above-described fence line or former railroad beds shall be used for residential habitation unless the then-owner of the Transfer Parcel can demonstrate to EPA that such use is consistent with the protection of human health and the environment. The positions of such fence line and former railroad beds will be established by survey. The FWS further covenants that it and its successors and assigns shall include in any deed or other conveyance document transferring any interest in any or all of the Transfer Parcel a restrictive covenant that identifies the use restriction set forth in this Subsection C.5 to all successors in interest to any interest in any or all of the Transfer Parcel. It is the intention of the FWS and the Army that this use restriction shall run with the land comprising the Transfer Parcel.

6. The FWS acknowledges that prior to the transfer of the Transfer Parcel to FWS, the Army informed the FWS that it had completed an Ordnance and Explosives Survey/Removal Action covering the entire Annex to determine if explosives or ordnance (OE) existed on the site. The Army represents that no OE was discovered but OE residue was found in Building T405, and was remediated in the fall of 1999. The Army's Conclusions of the Final UXO Characterization Report of 18 February 1998 states that: "Unless 100 percent of the site is searched, it cannot be positively determined with complete accuracy that no OE is present on the site. However, based upon the results of the surface and sub-surface activities and the results of the Site Stats/Grid Stats Random Selection Program, Sudbury Annex, Massachusetts, does not show evidence of being contaminated with OE or OE related material and can be excessed without further UXO activities except the 18 earth covered magazines. The interiors of these magazines require an inspection prior to being released with the Annex." The FWS acknowledges receipt of a copy of the Conclusions of the Army's Final UXO Characterization Report of 16 February 1998.

a. The FWS acknowledges that the Army has informed it that as of the Date of Transfer, the subsurface soil below the depth of four (4) feet on the Transfer Parcel may contain OE or OE-related material as a result of past Army activities on the Transfer Parcel. The FWS covenants on behalf of itself and its successors and assigns that, except as provided herein, no activity or use shall be undertaken on the Transfer Parcel that might disrupt or otherwise negatively impact the subsurface soil below the depth of four (4) feet. Such prohibited activities and uses shall include any disturbance of the subsurface soil below the depth of four (4) feet in any manner, including but not limited to construction activities such as filling, drilling, excavation or change of topography. The FWS covenants on behalf of itself and its successors and assigns that if it or its successor or assign wants to undertake an activity or use on the Transfer Parcel that will disrupt or otherwise negatively impact the subsurface soil below the depth of four (4) feet, including any construction activities involving the disturbance or disruption of the subsurface soil below the depth of four (4) feet, FWS or its

successor or assign shall pay for all costs associated with the clearance or removal of any OE or OE-related material discovered on the Transfer Parcel below the depth of four (4) feet. FWS further covenants on behalf of itself and its successors and assigns that it and its successors and assigns shall include in any deed or other conveyance document transferring any interest in any or all of the Transfer Parcel a restrictive covenant that identifies the use restriction and conditions set forth in this Subsection C.6. It is the intention of the FWS and the Army that this use restriction shall run with the land comprising the Transfer Parcel.

b. The Army covenants to FWS and its successors and assigns that the Army shall provide OE safety assistance at no cost to FWS and its successor or assign, including the clearance or removal of any OE or OE-related material discovered on the Transfer Parcel in the course of non-construction activities, including but not limited to landscaping, routine repair and maintenance, security surveys, and other activities not involving the disturbance or disruption of the subsurface soil on the Transfer Parcel below the depth of four (4) feet. The Army also covenants to FWS and its successors and assigns that it shall be responsible for the investigation and clearance or removal of all chemical munitions and all OE refuse sites found on the Transfer Parcel. An OE refuse site is defined as a site where military munitions have been collected and disposed of by burial and there are ten (10) or more munitions in a cubic yard. FWS covenants on behalf of itself and its successors and assigns that it and its successors and assigns shall include notice of these covenants by the Army in any deed or other conveyance document transferring any interest in any or all of the Transfer Parcel.

7. The Army has completed an Environmental Baseline Study (EBS) dated 27 January 1997 which characterized the environmental condition of the property. The Army has also completed an Environmental Condition of Property (ECOP) of the Transfer Parcel dated 8 August 2000. The ECOP summarizes what is known about the environmental condition of the Transfer Parcel and reflects the Army's position that the Transfer Parcel is suitable for transfer under the CERFA as a Category 1.3.4.5.& 7 parcel. The Army has complete asbestos and residual Unexploded Ordnance (UXO) cleanup work on the Transfer Parcel identified in the EBS. The Army will provide the FWS with a copy of the EBS and final ECOP.

8. The FWS covenants on behalf of itself and its successors and assigns that, except as provided herein, post-closure use of that portion of the Transfer Parcel that is within the boundaries of Area of Contamination (AOC) A7 (the Old Gravel Pit Landfill) shall not disturb either the integrity of the final covers, liners or any other components of the containment system(s) or the function of the monitoring system(s) in place at that AOC on the Date of Transfer or constructed at that AOC after the Date of Transfer. Post-closure activities prohibited under this Section C.8 shall include but not be limited to:

a. Surface application of water that could affect the effectiveness of the containment system(s) in preventing infiltration and directing runoff away from landfilled materials, or impact the migration of any contaminated groundwater underlying that portion of the Transfer Parcel that is within the boundaries of AOC A7;

b. Extraction, consumption, exposure or utilization of groundwater underlying that portion of the Transfer Parcel that is within the boundaries of AOC A7, except for the limited purpose of treating and monitoring groundwater contamination levels in accordance with plans approved by EPA and/or MADEP and issued by the Army, unless the Army determines that such extraction, consumption, exposure or utilization will not have any adverse impacts on any Response Action or Remedy at the Sudbury Training Annex NPL site;

c. Any disturbance of the surface or subsurface of that portion of the Transfer Parcel that is within the boundaries of AOC A7 in any manner, including but not limited to construction, filling, drilling, excavation or change of topography within AOC A7, that might interfere with, negatively impact, or restrict access for any ongoing Response Action within AOC A7 at the Sudbury Training Annex NPL site;

d. Any disturbance of the surface or subsurface of that portion of the Transfer Parcel that is within the boundaries of AOC A7 in any manner, including but not limited to construction, filling, drilling, excavation or change of topography within AOC A7, that might interfere with, negatively impact, or jeopardize the protectiveness of any Remedy within AOC A7 at the Sudbury Training Annex NPL site; and

e. Any activity within AOC A7 that will result in disturbance of the mobilization and/or transport of any hazardous substance, hazardous waste, petroleum product or derivative or any other contaminant existing on or emanating from that portion of the Transfer Parcel that is within the boundaries of AOC A7 on the Date of Transfer.

f. If the FWS or any of its successors or assigns proposes an activity that may disturb either the integrity of the final covers, liners or any other components of the containment system(s) or the function of the monitoring system(s) at AOC A7, FWS or such successor or assign shall not undertake such activity unless it first obtains written approval from the Army and EPA. The Army and EPA shall have the discretion to approve a disturbance of the final cover, liners or other component of the containment system(s), including any removal of waste, if FWS or such successor or assign demonstrates that such disturbance will not increase the potential threat to human health or the environment. Any investigation, remediation, or disposal of hazardous or other waste arising out of a disturbance of the final covers, liners or other component of the containment system(s) at AOC A7 by FWS or such successor or assign shall be the sole responsibility of FWS or such successor or assign. Any request for approval as described above shall be made in writing and delivered to the Army and the Administrator of EPA Region 1.

g. FWS also covenants that it and its successors and assigns shall include in any deed or other conveyance document transferring any interest in any of that portion of the Transfer Parcel that is within the boundaries of AOC A7 a restrictive covenant that runs with the land and identifies all the use restrictions and conditions set forth in this Subsection C.8 to all successors to any interest in any or all of the Transfer Parcel.

9. The Army has completed a Record of Environmental Consideration (REC) dated 16 January 1997 for this property transfer and the FWS acknowledges receipt of a copy of that REC.

10. To the extent not inconsistent with the Army's continuing obligations with respect to environmental remediation, as provided for in Section C of this MOA, the Transfer Parcel, including all buildings, structures and other improvements, are transferred without any representation, warranty, or guaranty by the Army as to quality, character, condition, size, kind, or that the same is in condition or fit to be used for the purpose the FWS intends.

11. The Transfer Parcel may include buildings and structures with asbestos containing materials (ACM), lead-based paint and small electrical fixtures with Polychlorinated Biphenyl (PCB). To the extent available, information regarding ACM lead-based paint and PCBs on the property is contained in the EBS. Details of the information gathering process regarding these issues are contained in the EBS. After the Date of Transfer, the FWS will be responsible for any and all remediation of any remaining ACM, lead-based paint and PCB containing electrical fixtures located within structures on the Transfer Parcel.

12. Lands to be transferred to the FWS have been partially surveyed for historic properties. A number of the archeological sites found by these surveys may be eligible for the National Register of Historic Places. As a federal agency, with the responsibility to comply with all federal laws and regulations that govern the treatment of cultural resources, it will be the responsibility of the FWS to complete any necessary historic property inventories for lands it is to receive from the Army and to take into account the effects of its undertakings on historic properties discovered there.

D. ARMY SPECIFIC RESPONSIBILITIES

Designate an installation program manager who will be the primary point of contact between the FWS and the Army.

E. FWS SPECIFIC RESPONSIBILITIES

1. Designate an individual who will be the primary point of contact between the Army and the FWS.

2. Allow Army access to the Transfer Parcel for completion of any remedial environmental work described in Section C.

F. NOTIFICATION REQUIREMENTS Any notices to be given pursuant to this MOA shall be addressed to:

U.S. Army: Commander, Devens Reserve Forces Training Area
31 Quebec Street
Devens, MA 01432-4424

U.S. Fish & Wildlife Service:
Refuge Manager
Assabet River National Wildlife Refuge
Weir Hill Road
Sudbury, MA 01776

G. MODIFICATIONS OR AMENDMENTS

1. This MOA may be modified, amended or terminated by the mutual agreement of both parties, in writing, and signed by a duly authorized representative of the FWS and the Army.

The duly authorized representative of the Army is Mr. Paul W. Johnson, Deputy Assistant Secretary of the Army (Installations and Housing).

The duly authorized representative of the FWS is Regional Director ~~FWS Region 5~~, or his/her designee.

2. This MOA will be reviewed by both parties prior to the beginning of each fiscal year. The MOA will remain in effect unless both parties determine modification or termination is necessary.

3. Both parties to the MOA are required to provide notice to EPA and MDEP of any modifications or amendments to the MOA.

IN WITNESS WHEREOF, each of the parties has executed this MOA effective on the date last signed, the 28th day of September 2000.

DEPARTMENT OF THE ARMY

Paul W. Johnson
Deputy Assistant Secretary of the Army
(Installations and Housing)

County/City of Arlington
Commonwealth/State of Virginia
The foregoing instrument was subscribed and sworn before me this 28th day of Sept 2000 by
Paul W. Johnson

DEPARTMENT OF THE INTERIOR

Dr. Mamie A. Parker
Acting Regional Director
U.S. Fish and Wildlife Service, Region 5

Madeline H. Fleming
Notary Public
My commission expires

TRANSFER AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY AND THE DEPARTMENT OF THE AIR FORCE FOR A PORTION OF THE FORMER FORT DEVENS, MASSACHUSETTS

The Secretary of the Army ("Army"), acting through Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing), does hereby transfer to the Department of the Air Force ("Air Force"), jurisdiction, custody, and control of approximately 4.148 acres, more or less, including all facilities thereupon, of the former Fort Devens, Massachusetts, Sudbury Training Annex, more specifically described in Exhibit A to this Transfer Agreement (hereinafter called the "Property"), and the interests, rights, easements, and appurtenances, as described and set forth herein, subject to the following terms and conditions:

Article 1 - Authority: This transfer of the Property is made in accordance with Public Law 101-510, section 2905(b)(2)(C), as amended. This transfer is without cost to either the Army or the Air Force. This transfer is also detailed on Department of Defense Form 1354, Exhibit B to this Transfer Agreement, of even date with this Transfer Agreement.

Article 2 – Environment:

2.1 Both the Army and the Air Force acknowledge that the Property was a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and such property was de-listed on January 29, 2002. The Army has provided the Air Force with a copy of the Sudbury Training Annex Federal Facilities Agreement (FFA) entered into by the United States Environmental Protection Agency Region 1 and the Army on 13 May 1991, and made effective on 15 November 1991, and the Air Force acknowledges receipt of a copy of that FFA. The Army agrees to provide the Air Force with any future amendments to the original FFA. The Air Force agrees to take no action on the Property inconsistent with the terms of the FFA. The environmental remediation of the contaminated portions of the Property has been undertaken by the Army in accordance with the FFA and in cooperation with the Massachusetts Department of Environmental Protection. Except in

regard to property disposal, the Army and the Air Force agree that should a conflict arise between the terms of the FFA as it presently exists or may be amended and the provisions of this Transfer Agreement, the terms of the FFA will take precedence over the provisions of this Transfer Agreement. The Army will inform the Air Force of any such conflicts affecting the Air Force's use of the Property. The Army reserves the right to access the Property, as it deems necessary, to fulfill its responsibilities under the FFA and this Transfer Agreement.

2.2 The Air Force does not assume any of the U.S. Government's liability or responsibility for contamination caused by the Army's use, management, or release of hazardous substances, hazardous waste, or petroleum products on any portion of Fort Devens, the Sudbury Annex, or the Property. The Army does not assume any of the U.S. Government's liability or responsibility for contamination caused by the Air Force's use, management, or release of hazardous substances, hazardous waste, or petroleum products on any portion of the Property. The Army and the Air Force retain, respectively, any and all liability and responsibility for any release of hazardous substances, hazardous waste, or petroleum products on any portion of the Property resulting from its use or management of the Property prior to the effective date of this Transfer Agreement.

2.3 The Army has completed an Environmental Baseline Study (EBS), dated 27 January 1997, which characterized the environmental condition of the Property. The Army has also completed an Environmental Condition of Property (ECOP), dated 1 Feb 2001. The ECOP summarizes what is known about the environmental condition of the Property and reflects the Army's position that the Property is suitable for transfer under the Community Environmental Response Facilitation Act as a Category 4 parcel. The Air Force acknowledges receipt of the EBS and the ECOP.

2.4 The Army has completed a Record of Environmental Consideration (REC), dated 16 January 1997, for this transfer and the Air Force acknowledges receipt of the REC.

2.5 The Property has been partially inventoried for historic properties. Known archeological sites are present on the Property. The Air Force will be responsible for completion of any outstanding historic property inventories for the Property and to take into account the effects of its undertakings on historic properties.

2.6 To the extent not inconsistent with the Army's continuing obligations with respect to environmental remediation, the Property, including all buildings, structures, and other improvements, are transferred without any representation, warranty, or guarantee by the Army as to quality, character, condition, size, kind, or that the same is in condition or fit to be used for the purpose(s) intended by the Air Force.

2.7 The Property may include buildings and structures with asbestos containing materials (ACM), lead-based paint, and PCBs. To the extent available, information regarding ACM, lead-based paint, and PCBs on the property is contained in the EBS. Details of the information gathering process regarding these issues are contained in the EBS. After the effective date of this Transfer Agreement, the Air Force will be responsible for any and all remediation of any remaining ACM, lead based paint, and PCBs on the Property.

Article 3 - Possession and Accountability: Full administrative jurisdiction and control

for the Property will shift from the Army to the Air Force as of the date of this Transfer Agreement (its effective date)

Article 4 - Other Terms and Conditions of Transfer:

4.1 No provisions of this agreement shall be interpreted or applied so as to obligate the Army or the Air Force in excess or advance of appropriations or otherwise so as to result in a violation of the Anti-Deficiency Act, 31 U.S.C. § 1341.

4.2 The Air Force will be permitted to use all existing roadways for ingress and egress to the property in accordance with the ingress/egress easement reserved for the Air Force in the transfer of the property by the Army to U.S. Fish and Wildlife Service (USFWS). The same ingress and egress easements are provided in the legal description of the Property at Exhibit A to this Transfer Agreement.

4.3 The Air Force shall continue to reimburse the Army for utilities until the effective date of this Transfer Agreement. After the transfer, the Air Force shall make its own arrangements for the payment of utilities to the utility providers.

4.4 The Army will not be responsible to provide any services for operation, maintenance, and care of the roadways within and outside the Property or leading to the Property. This includes snow removal, cleaning, maintenance, and repair of the roadways. Since the Army will no longer own the Property, the Air Force will make arrangements with the USFWS for access to the Property as necessary. The Air Force will be responsible for the security, safety, and protection of the Property.

4.5 This Transfer Agreement may be modified or amended by the mutual agreement of both parties in writing and signed by a duly authorized representative of the Army and the Air Force. The duly authorized representative of the Army for this purpose is the Deputy Assistant Secretary of the Army (Installations and Housing) or his/her designee. The duly authorized representative of the Air Force for this purpose is the Deputy Assistant Secretary of the Air Force (Installations) or his/her designee.

Article 5 – Notice:

Any notices to be given pursuant to this Transfer Agreement shall be addressed to—

For the Army:
Commander, Devens Reserve Forces Training Area
31 Quebec Street
Devens, MA 01432-4424

For the Air Force:
Air Force Real Estate Agency
ATTN: AFREA/DR, Mr. Jon Peterson
112 Luke Ave, Room 104
Bolling Air Force Base, D.C. 20332-8020

or such other address as the parties may, from time to time, direct.

NOW THEREFORE, in consideration of the foregoing, the Army and the Air Force enter into this Transfer Agreement this 31 day of June, 2002.

FOR THE DEPARTMENT OF THE ARMY

By: _____ Date: 3 JUN 2002
Joseph W. Whitaker
Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

FOR THE DEPARTMENT OF THE AIR FORCE

By: _____ Date: 5 JUN 2002
Fred W. Kuhn
Deputy Assistant Secretary of the Air Force
(Installations)

Exhibits:

A – Legal Description
B – DD Form 1354

City of Arlington
Commonwealth/State of Virginia
The foregoing instrument was acknowledged and sworn before me this 5th day of June 2002 by Fred W. Kuhn
[illegible]
Notary Public
My commission expires: May 31, 2002

COMMONWEALTH OF VIRGINIA)

COUNTY OF ARLINGTON)

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose Commission as such expires on the 30TH day of November, 2002, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, whose name is signed to the foregoing document and acknowledged this document is his free act and deed, dated this 3rd day of June, 2002.

Karen R. Cooper
NOTARY PUBLIC

MODIFICATION TO MEMORANDUM OF AGREEMENT
BETWEEN THE DEPARTMENT OF THE ARMY
AND
THE FEDERAL EMERGENCY MANAGEMENT AGENCY
FOR THE TRANSFER OF REAL PROPERTY
AT THE SUDBURY TRAINING ANNEX, MASSACHUSETTS

WHEREAS, the Department of the Army (hereinafter "Army"), and the Federal Emergency Management Agency (hereinafter "FEMA"), entered into a Memorandum of Agreement (hereinafter "MOA") dated March 31, 2003 for the transfer of real property at the Sudbury Training Annex, Massachusetts from Army to FEMA; and

WHEREAS, Army and FEMA desire to amend the MOA with respect to certain provisions relating to the property's environmental conditions and compliance responsibilities of the parties.

NOW, THEREFORE, Army and FEMA agree that the MOA is hereby amended as follows:

2. The following text is substituted for the texts of the introductory statement of paragraph 7 and subparagraph 7.a of Section D, ENVIRONMENTAL CONDITION AND COMPLIANCE RESPONSIBILITES:

7. FEMA acknowledges that arsenic-based herbicides were applied in the vicinity of the fence-line along Patrol Road and on the former railroad beds on the northern and southern portions of the Sudbury Annex, and that the Army has concluded, after completing a facility-wide investigation, that the resulting concentrations of arsenic in the soil do not pose an unacceptable risk to human health or the environment based on the future land use of the FEMA Parcel for operations (offices, a communication center, storage space and communication antennas) and training (in establishing mobile communications centers in the field).

a. In order to protect human health and the environment and further the common environmental objectives and land use plans of the United States and Massachusetts, a use restriction is needed to assure the future use of the property is consistent with the potential soil arsenic environmental condition of the Parcel. This restriction benefits the United States and the public welfare generally and is consistent with state and federal environmental statutes.

I. FEMA covenants on behalf of itself and its successors and assigns that no portion of the FEMA Parcel shall be used for either residential habitation or for any

extended use by children under six (6) years of age (including child care or recreation facilities), the FEMA Parcel having been remediated only for general business office operations and training purposes. (Extended use is defined as more than the exposure time of 38 days per year used in the risk assessment for children ages 1-6). FEMA, for itself, its successors or assigns covenants that it will not undertake nor allow any activity on or use of the property that would violate the restriction contained herein. This restriction and covenant is intended to be binding on FEMA, its successors and assigns; shall run with the land; and are forever enforceable. Nothing contained herein shall preclude FEMA, its successors and assigns, from undertaking, in accordance with applicable laws and regulations and without any cost to the Army, such additional remediation of arsenic in soil necessary to allow for residential or extended use of the Parcel. Upon completion of such remediation required to allow for residential or expanded use of the Parcel and if the then-owner of the FEMA Parcel can demonstrate to EPA that such use is consistent with the protection of human health and the environment, the United States agrees, without cost, to release or, if appropriate, modify this restriction by an amendment hereto or recordation of an amendment to the deed if transferred from Federal ownership.

ii. The restriction and conditions stated above benefit the public in general and the territory surrounding the FEMA Parcel, including lands retained by the United States, and, therefore, are enforceable by the United States government and EPA. FEMA covenants for itself, its successors, and assigns that it shall include and otherwise make legally binding, the above use restrictions in all subsequent lease, transfer or conveyance documents relating to the Parcel subject hereto. Any successor, assignee, grantee, transferee, lender, employer, agent, lessee or sublessee of FEMA, or any other third party, shall be liable for any costs that result from its violation of this restriction. It is the intention of Army and FEMA that this use restriction shall run with the land comprising the Parcel.

The MOA is amended only as set forth above. All other provisions of the agreement remain in full force and effect.

IN WITNESS WHEREOF, each of the parties has executed this agreement effective on the date of last signature below.

DEPARTMENT OF THE ARMY

JOSEPH W. WHITAKER
Deputy Assistant Secretary of the Army
(Installations and Housing) OASA (I&E)

Date: 30 July 2003

FEDERAL EMERGENCY MANAGEMENT AGENCY

MICHAEL D. BROWN
Under Secretary
Emergency Preparedness & Response
Department of Homeland Security,
on behalf of the Federal Emergency Management Agency

Date: JUL 29 2003

CMMONWEALTH OF VIRGINIA)

COUNTY OF ARLINGTON)

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose Commission as such expires on the 30th day of November, 2006, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, whose name is signed to the foregoing document and acknowledged this document is his free act and deed, dated this 3rd day of July, 2003.

Vera A. Cooper

NOTARY PUBLIC

COUNTY OF FAIRFAX
COMMONWEALTH OF VIRGINIA

Sworn and subscribed to before me by Michael D. Brown, who is to me well known, this 29th day of July, 2003.

Notary Public

My Commission Expires 5/31/05

My Commission Expires:

LETTER OF TRANSFER
FOR
A PORTION OF THE FORMER FORT DEVENS, MASSACHUSETTS
TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY

FROM: The Department of the Army

TO: The Federal Emergency Management Agency

For the Department of the Army ("Army"), I, Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing), do hereby transfer to the Federal Emergency Management Agency ("FEMA"), jurisdiction, custody, and control of approximately 71.525 acres, more or less, of the former Fort Devens, Massachusetts, Sudbury Training Annex, more specifically described in Exhibit A to this Letter of Transfer (hereinafter called the "Property"), and the interests, rights, leases, easements, and appurtenances, as described and set forth herein and the applicable sections of the Memorandum of Agreement ("MOA") between the parties, dated 3-31-, 2003, attached hereto at Exhibit B to this Letter of Transfer, to be used, operated, maintained, and funded by the FEMA, except as required to be funded by the Army by law or agreement.

Article 1 - Authority: This transfer of the Property is made in accordance with the authority delegated to the Secretary of the Army under the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, 10 U.S.C. 2687, as amended.

Article 2 – Consideration: In accordance with 10 USC § 2687, 16 USC § 667b, and 40 USC §§ 471-531, this transfer of the Property is made without monetary reimbursement from the FEMA.

Article 3 - Possession and Accountability: Full administrative jurisdiction and control for the Property will shift from the Army to the FEMA as of the date of the acceptance of this Letter of Transfer by the FEMA.

Article 4 - Other Terms and Conditions of Transfer: The MOA between the parties, which is hereby incorporated by reference, sets out the general terms and conditions of this transfer, which shall be binding on the parties.

NOW THEREFORE, in consideration of the foregoing, I hereby approve and deliver this Letter of Transfer and cause jurisdiction, custody, and control of the Property described herein to be transferred to the FEMA, effective upon the date of acceptance, as recorded below.

Dated this 21st day of March, ~~2002~~ 2003.

DEPARTMENT OF THE ARMY

By: _____
Joseph W. Whitaker
Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

Accepted:

The Federal Emergency Management Agency hereby accepts this transfer in accordance with the terms provided for herein:

FEDERAL EMERGENCY MANAGEMENT AGENCY

Date: 3-31-03 By: _____
Michael D. Brown

Its: Acting Under Secretary, Emergency Preparedness & Response Department of Homeland Security, on behalf of the Federal Emergency Management Agency

Exhibits:

A – Property Description
B – Memorandum of Agreement
C – DD Form 1354

COMMONWEALTH OF VIRGINIA)

COUNTY OF ARLINGTON)

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose Commission as such expires on the 30th day of November, 2006, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, whose name is signed to the foregoing document and acknowledged this document is his free act and deed, dated this 21st day of March, 2003.

Karen A. Cooper
NOTARY PUBLIC

THE DISTRICT OF COLUMBIA

Subscribed and sworn to before me by Michael D. Brown, who is to me well known, this 31st day of March, 2003.

Andrea Williams

ANDREA WILLIAMS
Notary Public, District of Columbia
My Commission Expires May 14, 2006

LEGAL DESCRIPTION AND EASEMENT
FOR FEDERAL EMERGENCY MANAGEMENT 71.525 ACRES
SUDBURY TRAINING ANNEX

MIDDLESEX COUNTY, COMMONWEALTH OF MASSACHUSETTS

The hereinafter described tracts of land are located in the Commonwealth of Massachusetts, Middlesex County, Towns of Maynard, Sudbury, and Stow, situate generally westerly of Cutting Pond, generally northerly of Willis Pond and Hudson Road and generally southeasterly of lands formerly of the Boston and Maine Corporation, being a portion of Fort Devens, Sudbury Training Annex, and being more particularly bounded and described as follows:

All bearings in the following description are referenced to grid north, Massachusetts State Plane Coordinate System (NAD 1983 Mainland Zone).

FEMA PARCEL I

BEGINNING at Corner 10373 on the northwesterly boundary of Old Marlborough Road from which Corner 69 of the Sudbury Training Annex Transfer Tract (1) bears N 41° 36′ 04″ E, 46.18 feet;

thence from Corner 10373 through the lands now or formerly of Fort Devens, Sudbury Training Annex, partially along the northeasterly boundary of a 50 foot wide access easement the following eight (8) courses:

1) N 49° 59′ 03″ W, 85.72 feet to Corner 6918;

2) thence N 49° 49′ 36″ W, 102.66 feet to Corner 10320;

3) thence N 68° 10′ 29″ W, 118.68 feet to Corner 10319;

4) thence N 73° 00′ 09″ W, 58.97 feet to Corner 10374, a standard USF&WS aluminum monument, set and marked "COR 10374 1998";

5) thence N 08° 46′ 06″ W, 698.95 feet continuing through said lands to Corner 10389;

6) thence N 08° 46′ 06″ W, 618.34 feet to Corner 10390, a standard USF&WS aluminum monument, set and marked "COR 10390 1998";

7) thence N 66° 02′ 58″ E, 393.72 feet to Corner 10391, a standard USF&WS aluminum monument, set and marked "COR 10391 1998"; and

8) thence N 57° 49′ 26″ W, 134.63 feet to Corner 52, a drill hole in a stone wall found as a witness at its point of intersection with the common division line between the lands of the United States of America on the southwest and the lands now or formerly of Mark I.

and Amy L. Toporoff as described in Book 23591 of Deeds at Page 216, lands now or formerly of Robert and Kerri J. Gorgon as described in Book 23903 of Deeds at Page 483, lands now or formerly of David W. Moss, III and Sharon Moss as described in Book 23603 of Deeds at Page 512, lands now or formerly of Rezaul K. and Fatema A. Khandker as described in Book 22765 of Deeds at Page 484, lands now or formerly of Paula A. and Richard C. Waterhouse as described in Book 24276 at Page 503 and lands now or formerly of James H. and Katherine A. McNulty as described in Book 20368 of Deeds at Page 266 on the northeast with the common division line between the lands of the United States of America on the south and the lands now or formerly of James A. and Mary W. Bulger as described in Book 25602 of Deeds at Page 459 and lands now or formerly of William T. and Linda M. Nachtrab as described in Book 19602 of Deeds at Page 381 on the north;

thence N 82° 36' 44' E, along the above last mentioned common division line, 200.12 feet to Corner 53, a standard USF&WS aluminum monument, set and marked "COR 53, 1996" at its point of intersection with the common division line between the lands of the United States of America on the west and the lands now or formerly of David M. and Sandra R. Manshel as described in Book 20030 of Deeds at Page 567, lands now or formerly of David L. and Christina M. Brooks as described in Book 23502 of Deeds at Page 91, the westerly terminus of Vose Hill Road and lands now or formerly of George E. and Mary Weber Saylor as described in Book 16484 of Deeds at Page 376 on the east;

thence along the above last mentioned common division line the following two (2) courses:

1) thence S 00° 15' 30" E, 254.63 feet to Corner 54, a standard USF&WS aluminum monument, set and marked "COR 54, 1996" and

2) thence S 21° 41' 53" W, 50.58 feet to Corner 55 from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "55", bears N 52° 46' 11" E, 9.69 feet at its point of intersection with the common division line between the lands of the United States of America on the south and the lands now or formerly of said George E. and Mary Weber Saylor as described in Book 16484 of Deeds at Page 376, lands now or formerly of James P. and Mary S. Brannelly as described in Book 19138 of Deeds at Page 349, lands now or formerly of James E. and Anita M. Clemens as described in Book 19171 of Deeds at Page 329 and lands now or formerly of Scott A. and Susan F. Bradley as described on Book 19111 of Deeds at Page 290 on the north;

thence along the last mentioned common division line the following four (4) courses:

1) thence from Corner 55 N 83° 50' 30" E, 216.63 feet to Corner 56, from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "56", bears N 07° 00' 41" W, 5.00 feet;

2) thence from Corner 56, N 82° 08' 09" E, 38.21 feet to Corner 57 from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "57", bears N 05° 58' 21" W, 5.00 feet;

3) thence from Corner 57, N 85° 55' 10" E, 54.20 feet to Corner 58 from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "58", bears N 05° 24' 01" W, 5.00 feet; and

4) thence from Corner 58, N 83° 16' 49" E, 161.08 feet to Corner 59 from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "59", bears N 44° 52' 56" E, 8.05 feet at its point of intersection with the common division line between the lands of United States of America on the west and lands now or formerly of Robert D. Quirk as described in Book 19670 of Deeds at Page 452, lands now or formerly of David A. and Margaret N. Purdy as described in Book 24564 of Deeds at Page 224, lands now or formerly of Dawson Heights Realty Trust, Thomas J. Sheridan, Trustee as described in Book 24569 of Deeds at Page 177, lands now or formerly of John Paul Loretta as described in Book 12585 of Deeds at Page 70, lands now or formerly of Thomas L. Coin, Jr. and Francoise Coin as described in Book 25025 of Deeds at Page 391, lands now or formerly of John P. O'Dowd and Christy H. Hill as described in Book 25025 of Deeds at Page 391 and lands now or formerly of John R. Allan as described in Book 14628 of Deeds at Page 98 on the east;

thence from Corner 59 and running along the above last mentioned common division line the following eight (8) courses:

1) S 06° 29' 04" W, 80.12 feet to Corner 60, from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "60", bears S 82° 58' 17" E, 5.00 feet;

2) thence from Corner 60, S 07° 34' 22" W, 173.61 feet to Corner 61, from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "61", bears S 82° 18' 26" E, 5.00 feet;

3) thence from Corner 61, S 07° 48' 47" W, 82.69 feet to Corner 62, a drill hole in an existing stone wall found as a witness;

4) thence S 07° 40' 47" W, 95.22 feet to Corner 63, a drill hole in an existing stone wall found as a witness;

5) thence S 08° 11' 25" W, 56.92 feet to Corner 64 from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "64", bears S 82° 25' 15" E, 5.00 feet;

6) thence from Corner 64, S 06° 58' 04" W, 125.86 feet to Corner 65, a drill hole in an existing stone wall found as a witness;

7) thence S 08° 14' 58" W, 53.43 feet to Corner 66, a drill hole in an existing stone wall found as a witness; and

8) thence S 07° 10' 05" W, 266.34 feet to Corner 67, from which a standard Army Corp. of Engineers aluminum monument found as a witness and marked "67" at its point of intersection with the northwesterly boundary of Old Marlborough Road;

thence along the said northwesterly road boundary the following two (2) courses:

1) S 40° 46' 34" W, 589.17 feet to Corner 68, a standard Army Corp. of Engineers aluminum monument found as a witness and marked "68"; and

2) thence S 41° 36' 04" W, 158.93 feet to the point or place of beginning and containing 29.697 acres of land more or less.

FEMA PARCEL II

COMMENCING at Corner 69, a standard USF&WS aluminum monument, set and marked "COR 69 1996" on the outside boundary of the Fort Devens, Sudbury Training Annex, at its point of intersection of the northwesterly road boundary of Old Marlborough Road with the southwesterly road boundary of Puffer Road and thence from point of commencement through the lands of the United States of America, Fort Devens, Sudbury Training Annex, N 81° 53' 30" W, 30.65 feet to Corner 10323 and being the true point of beginning of the hereinafter described FEMA Parcel II, from which a standard USF&WS aluminum monument, set as a witness and marked "COR 10340 1998" bears N 84° 21' 53" E, 10.12;

thence from Corner 10323 through the lands now or formerly of Fort Devens, Sudbury Training Annex, along the northwesterly boundary of a fifty (50) foot wide access and utility easement, the following seven (7) courses:

1) S 27° 15' 03" W, 51.18 feet to Corner 10324;

2) thence S 54° 06' 04" W, 120.13 feet to Corner 10307;

3) thence S 55° 24' 01" W, 186.06 feet to Corner 10306;

4) thence S 58° 10' 33" W, 186.50 feet to Corner 10305;

5) thence S 59° 32' 41" W, 273.06 feet to Corner 10304;

6) thence S 58° 52' 35" W, 228.40 feet to Corner 10303; and

7) thence S 55° 08' 51" W, 105.69 feet to Corner 10341, a standard USF&WS aluminum monument, set and marked "COR, 10341, 1998";

thence continuing through the lands now or formerly of Fort Devens, Sudbury Training Annex the following nine (9) courses:

1) N 29° 21' 42" E, 203. 66 feet to Corner 10339;

2) thence N 28° 07' 27" E, 126.79 feet to Corner 10348, a standard USF&WS aluminum monument, set and marked "COR 10348 1998";

3) thence N 17° 00' 52" E, 190.36 feet to Corner 10349, a standard USF&WS aluminum monument, set and marked "COR 10349 1998";

4) thence N 52° 09' 09" E, 38.60 feet to Corner 10350;

5) thence N 61° 32' 00" E, 203.82 feet to Corner 10351, a standard USF&WS aluminum monument, set and marked "COR 10351 1998";

6) thence N 58° 17' 22" E, 252.00 feet to Corner 10352;

7) thence N 44° 05' 33" E, 37.71 feet to Corner 10353;

8) thence N 25° 12' 40" E, 38.15 feet to Corner 10354; and

9) thence N 08° 16' 30" E, 16.28 feet to Corner 10338, a standard USF&WS aluminum monument, set and marked "COR 10338 1998" on the southerly boundary of a fifty (50) foot wide access easement;

thence continuing through the lands now or formerly of Fort Devens, Sudbury Training Annex, along the southerly and southwesterly boundary of a fifty (50) foot wide access easement the following five (5) courses:

1) S 73° 00' 09" E, 58.45 feet to Corner 10318;

2) thence S 68° 10' 29" E, 108.49 feet to Corner 10321;

3) thence S 49° 49' 41" E, 94.54 feet to Corner 10322;

4) thence S 44° 14' 00" E, 38.56 feet to Corner 10355; and

5) thence S 27° 13' 32" E, 21.97 feet to Corner 10323 the point or place of beginning and containing 5.650 acres of land more or less.

FEMA PARCEL III

COMMENCING at Corner 69, a standard USF&WS aluminum monument, set and marked "COR, 69 1996" on the outside boundary of the Fort Devens, Sudbury Training Annex, at its point of intersection with the northwesterly of boundary of Old Marlborough Road with the southwesterly boundary of Puffer road and thence from said point of commencement through the lands of the United States of America, Fort Devens, Sudbury Training Annex, S 22° 27' 02" W, 98.76 feet to Corner 10336, a

standard USF&WS aluminum monument, set and marked "COR 10336 1998" and being the true point of beginning of the hereinafter described FEMA Parcel III;

thence from Corner 10336 through the lands now or formerly of Fort Devens, Sudbury Training Annex, parallel to and distant 25 feet westerly measured at right angles from the center line of wood road the following five (5) courses:

1) S 07° 31' 32" E, 15.28 feet to Corner 10329;

2) thence S 00° 43' 53" W, 99.78 feet to Corner 10328;

3) thence S 07° 05' 45" W, 123.32 feet to Corner 10327;

4) thence S 11° 39' 35" W, 143.86 feet to Corner 10326; and

5) thence S 08° 39' 14" W, 20.28 feet to Corner 10347, at its point of intersection with an existing stonewall, a standard USF&WS aluminum monument set and marked "COR 10347 1998";

thence through the lands now or formerly of Fort Devens, Sudbury Training Annex, partially along an existing stonewall the following seven (7) courses:

1) S 65° 23' 27" W, 263.36 feet to Corner 6988;

2) thence S 64° 09' 03" W, 325.98 feet to Corner 6979;

3) thence S 64° 37' 31" W, 289.54 feet to Corner 10345, a standard USF&WS aluminum monument set and marked "COR 10345 1998";

4) thence S 72° 02' 01" W, 83.92 feet to Corner 10344, a standard USF&WS aluminum monument set and marked "COR 10344 1998";

5) thence N 59° 08' 45" W, 112.79 feet to Corner 10343, a standard USF&WS aluminum monument set and marked "COR 10343 1998";

6) thence N 46° 49' 50" W, 49.73 feet to Corner 10342, a standard USF&WS aluminum monument set an marked "COR 10342 1998"; and

7) thence N 46° 49' 50" W, 2.00 feet to Corner 10363, marked by a cross cut in a rock on the southeasterly boundary of a 50 foot wide access and utility easement;

thence continuing through the lands now or formerly of Fort Devens, Sudbury Training Annex, along the southeasterly boundary of said 50 foot wide access and utility easement the following eight (8) courses:

1) N 42° 51' 58" E, 53.12 feet to Corner 10314;

2) thence N 49° 02′ 48″ E, 95.13 feet to Corner 10313;

3) thence N 55° 08′ 51″ E, 144.76 feet to Corner 10312;

4) thence N 58° 52′ 35″ E, 226.48 feet to Corner 10311;

5) thence N 59° 32′ 41″ E, 273.37 feet to Corner 10310;

6) thence N 58° 10′ 33″ E, 188.31 feet to Corner 10309;

7) thence N 55° 24′ 01″ E, 187.84 feet to Corner 10308; and

8) thence N 54° 06′ 04″ E, 104.32 feet to the point or place of beginning and containing 6.436 acres of land, more or less.

FEMA PARCEL IV

COMMENCING at Corner 10373 on the northwesterly boundary of Old Marlborough road from which Corner 69 of the Sudbury Training Annex Transfer Tract (I) bears N 41° 36′ 04″ E, 46.18 feet;

thence from said point of commencement from Corner 10373 along the southwesterly and southerly boundary of herein described FEMA Parcel I the following four (4) courses:

1) N 49° 59′ 03″ W, 85.72 feet to Corner 6918;

2) thence N 49° 49′ 36″ W, 102.66 feet to Corner 10320;

3) thence N 68° 10′ 29″ W, 118.68 feet to Corner 10319; and

4) thence N 73° 00′ 09″ W, 58.97 feet to Corner 10374, a standard USF&WS aluminum monument, set and marked "COR 10374 1998", being the true point of beginning of beginning of the hereinafter described FEMA Parcel IV;

thence from Corner 10374 continuing through the lands of the Sudbury Training Annex Transfer Tract and along the northerly boundary of a 50 foot wide access easement the following seven (7) courses:

1) N 73° 00′ 09″ W, 43.97 feet to Corner 10317;

2) thence N 76° 59′ 00″ W, 105.28 feet to Corner 10366;

3) thence N 77° 31′ 55″ W, 161.21 feet to Corner 10367;

4) thence N 78° 02′ 33″ W, 213.86 feet to Corner 10368;

5) thence N 76° 49' 23" W, 103.23 feet to Corner 10369;

6) thence N 73° 03' 30" W, 271.67 feet to Corner 10380; and

7) thence N 66° 36' 11" W, 67.67 feet to Corner 10385, a standard USF&WS aluminum monument set and marked "COR 10385 1998";

thence continuing through the lands now or formerly of Fort Devens, Sudbury Training Annex the following two (2) courses:

1) N 23° 23' 49" E, 319.49 feet to Corner 10383, a standard USF&WS aluminum monument set and marked "COR 10383 1998"; and

2) thence S 80° 12' 41" E, 754.58 feet to Corner 10388, a standard USF&WS aluminum monument set and marked "COR 10388 1998" on the westerly boundary of FEMA Parcel I;

thence S 08° 46' 06" E, continuing through the lands now or formerly of Fort Devens, Sudbury Training Annex, along the westerly boundary of FEMA Parcel I a distance of 415.02 feet to Corner 10374 the point or place of beginning and containing 7.136 acres of land, more or less.

FEMA PARCEL V

BEGINNING at Corner 40 at its point of intersection with the division line between the lands of the United States of America on the Southeast and the lands now or formerly of Maynard Sand and Gravel as described in Book 10292 of Deeds of Page 154 on the northwest with the division line between the lands of the United States of America on the south and the lands now or formerly of Frances C. Denesivk and Elizabeth Schnair as described in Book 14873 of Deeds of Page 409 on the north, said Corner 40, being a standard Army Corp. of Engineers aluminum monument found as a witness and marked "40";

thence N 86° 51' 30" E, along the above last mentioned division line 590.00 feet to Corner 10375, marked by a standard USF&WS aluminum monument set and marked "COR 10375 1998";

thence from Corner 10375 through the lands now or formerly of Fort Devens, Sudbury Training Annex, the following five (5) courses:

1) S 00° 47' 35" E, 807.79 feet to Corner 10376, a standard USF&WS aluminum monument, set and marked "COR 10376 1998";

2) thence S 40° 33' 29" W, 164.05 feet to Corner 10378, a standard USF&WS aluminum monument, set and marked "COR 10378 1998";

thence S 45° 52' 09" W, 485.69 feet to Corner 10377, a standard USF&WS aluminum monument, set and marked "COR 10377 1998";

) thence S 89° 51' 57" W, 392.26 feet to Corner 10362, a standard USF&WS aluminum nonument set and marked "COR 10362 1998" and;

i) thence S 89° 51' 57" W, 9.89 feet to Corner 10292, said point being fifteen (15) feet easterly measured at right angles from the center line of a right-of-way from the "North Gate" through lands now or formerly of Fort Devons, Sudbury Training Annex, to the U. S. Air Force Parcel, said right-of-way known as White Pond Road;

thence continuing through the lands now and formerly of Fort Devons, Sudbury Training Annex, along the easterly boundary of said "Air Force" easement for ingress and egress, parallel to and distant 15 feet easterly measured at right angles from said easement center line, the following five (5) courses;

1) N 06° 52' 06" E, 218.97 feet to Corner 10293;

2) thence, N 10° 23' 47" W, 135.83 feet to Corner 10294;

3) thence N 22° 06' 13" W, 189.14 feet to Corner 10295;

4) thence N 12° 23' 16" W, 130.78 feet to Corner 10296; and

5) thence N 08° 18' 27" W, 237.65 feet to Corner 10297 at its point of intersection with the above first mentioned division line between the lands of the United States of America on the southeast and the lands now or formerly of Maynard Sand and Gravel on the northwest;

thence along the above first mentioned division line, the following two (2) courses:

1) N 45° 04' 31" E, 162.94 feet to Corner 39, a standard Army .Corp. of Engineers aluminum monument found as a witness and marked "39"; and

2) thence in a generally northeasterly direction along a curve to the right having a radius of 2,418.25 feet, a chord bearing of N 49° 21' 06 " E, and a chord distance of 360.66 feet and an arc length of 361.00 feet to Corner 40, and the true place of beginning containing 22.606 acres more or less.

TRACT 2M-1

Being a right-of-way from Old Marlborough Road to Puffer Pond, fifty (50) feet in width and being an easement for ingress, egress and utilities, the center line of which is more particularly bounded and described as follows:

BEGINNING at Corner 10397 from which Corner 69 of the Sudbury Training Annex Transfer Tract (1) bears N 46° 46' 29" W, 5.49 feet;

thence from Corner 10397 along the center line of said fifty (50) foot wide access and utility easement the following twenty-six (26) courses:

1) S 35° 46' 32" W, 68.16 feet to Corner 6899;

2) thence S 54° 06' 04" W, 124.44 feet to Corner 6896;

3) thence S 55° 24' 01" W, 186.95 feet to Corner 6891;

4) thence S 58° 10' 33" W, 187.40 to Corner 6887;

5) thence S 59° 32' 41" W, 273.21 feet to Corner 6873;

6) thence S 58° 52' 35" W, 227.44 feet to Corner 6868;

7) thence S 55° 08' 51" W, 146.91 feet to Corner 6864;

8) thence S 49° 02' 48" W, 97.81 feet to Corner 6862;

9) thence S 42° 51' 58" W, 54.47 feet to Corner 10398;

10) thence S 46° 43' 48" W, 96.61 feet to Corner 7026;

11) thence S 45° 50' 29" W, 124.34 feet to Corner 7028;

12) thence S 54° 03' 32" W, 168.16 feet to Corner 7029;

13) thence S 55° 06' 17" W, 167.75 feet to Corner 7024;

14) thence S 27° 40' 11" W, 120.78 feet to Corner 7021;

15) thence S 65° 44' 20" W, 16.06 feet to Corner 7019;

16) thence N 49° 33' 06" W, 147.64 feet to Corner 7015;

17) thence N 47° 57' 00" W, 66.22 feet to Corner 7014;

18) thence N 53° 56' 00" W, 140.12 feet to Corner 7012;

19) thence N 48° 38' 43" W 57.04 feet to Corner 6808;

20) thence S 88° 14' 52" W 33.10 feet to Corner 7009;

21) thence S 77° 26' 54" W, 24.10 feet to Corner 7008;

22) thence S 66° 52′ 42″ W, 25.34 feet to Corner 7007;

23) thence S 60° 10′ 28″ W, 26.86 feet to Corner 7005;

24) thence N 60° 00′ 26″ W, 32.40 feet to Corner 7004;

25) thence N 63° 40′ 50″ W, 47.04 to Corner 10298; and

26) thence N 43° 06′ 14″ W, 25.25 feet to Corner 10299 at the terminus of said easement.

Being a fifty (50) foot wide strip of land, approximately 2686 feet in length to be used for access to FEMA Parcel II and FEMA Parcel III and as an utility easement for the reconstruction and maintenance of a water pipeline together with all necessary appurtenances, as said water line exists from the FEMA Parcel I, Headquarters site to the Puffer Pond wells site.

TRACT (2R)

Being a right-of-way from Old Marlborough Road to the Unit Training Parcel, Tract 2M, through the lands now or formerly of Fort Devens, Sudbury Training Annex, the first portion being fifty (50) feet in width, being an easement for ingress and egress, the center line of which being more particularly bounded and described as follows:

BEGINNING at Corner 10392 on the northwesterly boundary of Marlborough Road from which Corner 69 of the Sudbury Training Annex Transfer (1) bears N 41° 36′ 04 " E, 21.17 feet;

thence from Corner 10392 through the lands now or formerly of Fort Devens, Sudbury Training Annex the following forty-nine (49) courses:

1) N 49° 59′ 03″ W, 85.06 feet to Corner 10393;

2) thence N 49° 49′ 41″ W, 98.66 feet to Corner 10394

3) thence N 68° 10′ 29″ W, 113.58 feet to Corner 6959;

4) thence N 73° 00′ 09″ W, 101.01 feet to Corner 6961;

5) thence N 76° 59′ 00′ W, 104.29 feet to Corner 6963;

6) thence N 77° 31′ 55″ W, 160.98 feet to Corner 6966;

7) thence N 78° 02′ 33″ W, 214.01 feet to Corner 6970;

8) thence N 76° 49′ 23″ W, 103.49 feet to Corner 6973;

9) thence N 73° 04' 10" W, 274.71 feet to Corner 7962;

10) thence N 66° 36' 11" W, 116.59 feet to Corner 7964;

11) thence N 58° 02' 57" W, 212.45 feet to Corner 7971;

12) thence N 46° 53' 15" W, 264.56 feet to Corner 7976;

13) thence N 46° 23' 47" W, 606.58 feet to a point of curvature at Corner 10007;

14) thence in a generally northwesterly direction along a curve to a left, having a radius of 550.00 feet, a chord bearing of N 65° 55' 38" W, and a chord distance 358.35 feet, an arc length of 365.01 feet to a point of tangency at Corner 10010;

15) thence N 84° 56' 23" W, 670.61 feet to Corner 10011;

16) thence N 49° 56' 19" W, 414.34 feet to a point of curvature at Corner 10012;

17) thence in a generally northerly direction along a curve to the left, having a radius of 175.00 feet, a chord bearing of N 18° 53' 38" W, and a chord distance of 184.96 feet, an arc length of 194.87 feet to a point of tangency at Corner 10016;

18) thence N.13° 00' 23" E, 298.36 feet to Corner 10016;

19) thence N 19° 25' 22" E, 221.94 feet to a point of curvature at Corner 10017;

20) thence in a generally northerly direction along a curve to the left, having a radius of 568.00 feet, a chord bearing of N 02° 19' 59" W, and a chord distance of 421.06 feet, an arc length of 431.35 feet to a point of tangency at Corner 10019;

21) thence N 24° 05' 21" W, 300.01 feet to Corner 10020;

22) thence N 07° 38' 51" W, 318.35 feet to Corner 10021;

23) thence N 18° 26' 45" W, 367.39 feet to Corner 10022;

24) thence N 60° 52' 53" W, 129.67 feet to Corner 10023;

25) thence N 67° 11' 16" W, 149.27 feet to Corner 10024;

26) thence N 83° 36' 48"W, 360.29 feet to Corner 10025;

27) thence N 71° 05' 35" W, 397.19 feet to Corner 10026;

28) thence N 70° 53' 36" W, 205.64 feet to Corner 10027;

29) thence N 61° 38′ 25″ W, 234.91 feet to Corner 10028;

30) thence N 74° 16′ 03″ W, 117.70 feet to Corner 10029;

31) thence S 85° 17′ 36″ W, 34.75 feet to Corner 10031;

32) thence S 58° 39′ 32″ W, 584.74 feet to Corner 10032;

33) thence S 43° 18′ 42″ W, 97.15 feet to Corner 10033;

34) thence S 57° 03′ 53″ W, 116.98 feet to Corner 10034;

35) thence S 65° 56′ 26″ W, 444.80 feet to Corner 10036;

36) thence N 82° 37′ 51″ W, 216.98 feet to Corner 10037

37) thence N 88° 24′ 11″ W, 256.71 feet to Corner 6732, said point being on the center line of the Air Force White Pond Road easement;

38) thence continuing through the lands of Sudbury Training Annex along the center line of the thirty (30) foot wide portion of said easement S 20° 49′ 48″ W, 387.49 feet to Corner 10039;

39) thence S. 21° 35′ 22″ W, 469.24 feet to Corner 10040;

40) thence S 23° 59′ 01″ W, 156.95 feet to Corner 10041;

41) thence S 33° 02′ 28″ W, 149.23 feet to Corner 10042;

42) thence S 46° 06′ 22″ W, 430.34 feet to Corner 10043;

43) thence S 41° 53′ 31″ W, 382.99 feet to Corner 10044;

44) thence S 39° 28′ 35″ W, 322.65 feet to a point of curvature at Corner 10045;

45) thence in a generally southerly direction along a curve to the left, having a radius of 155.49 feet, a chord bearing S 15° 42′ 48″ W, and a chord distance of 97.89 feet, an arc length of 99.59 feet to Corner 10048;

46) thence continuing through the lands of the Sudbury Training Annex along the center line of the twenty (20) foot wide portion of said easement S 50° 39′ 37″ W, 884.24 feet to Corner 10049;

47) thence S 38° 00′ 52″ W, 119.61 feet to Corner 10050;

48) thence S 20° 51′ 31″ W, 161.88 feet to Corner 10051; and

49) thence S 36° 05' 30" E, 211.34 to Corner 10396 on the northwesterly boundary of the 3.476± acre Unit Training Parcel, Tract 2M, being the terminus of the above described varied width easement for ingress and egress from Old Marlborough Road to White Pond Road to the Unit Training Parcel, Tract 2M.

TRACT (2R-1) FEMA PORTION (1R)

Being a thirty (30) foot wide right-of-way from Northgate through the lands now or formerly of Fort Devons, Sudbury Training Annex, to the varied width right-of-way for ingress and egress leading from Old Marlborough Road to the FEMA Unit Training Parcel, Tract 2M, and being an easement for ingress and egress the center line of which being more particularly bounded and described as follows:

BEGINNING at Corner 6728 from which Corner 38 of the Sudbury Training Annex Transfer Tract (1) bears N 45° 04' 31" E, 51.68 feet;

thence from Corner 6728 and through the lands now or formerly of Fort Devens, Sudbury Training Annex, the following five (5) courses:

1) thence S 08° 18' 27" E, 227.04 feet to Corner 6371;

2) thence S 12° 23' 16" E, 132.58 feet to Corner 6366;

3) thence S 22° 06' 13" E ,188.88 feet to Corner 6729;

4) thence S 10° 23' 47" E, 132.01 feet to Corner 6730; and

5) thence S 06° 52' 06" W, 218.54 feet to Corner 6731 being a point of terminus of the above described thirty (30) foot wide easement for ingress and egress on the center line of the varied width right-of-way ingress and egress easement, 2R, from Marlborough Road to the previously described FEMA Unit Training Parcel, Tract 2M.

The above described tracts of land are delineated on a plan entitled "United States Department of Interior Fish and Wildlife Service, Great Meadows National Wildlife Refuge Puffer Pond Division, Sudbury Training Annex Transfer Tract (1,1R,2R,2R-1,1E,1E-1,1E-2,2M,2M-1) 2007.1 acres, Middlesex County, Towns of Maynard, Stow and Sudbury, Commonwealth of Massachusetts," surveyed November 1986, map prepared October 18, 1996, last revised December, 1998, prepared by C.T. Male Associates, P.C., Latham, New York, said plan as of record in the files of the Department of Interior. A print of that plan is attached hereto.

MEMORANDUM OF AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE FEDERAL EMERGENCY MANAGEMENT AGENCY
FOR THE TRANSFER OF
REAL PROPERTY
AT THE SUDBURY TRAINING ANNEX, MASSACHUSETTS

The Federal Emergency Management Agency (hereinafter "FEMA") and the Department of the Army (hereinafter the "Army") hereby enter into a Memorandum of Agreement (MOA) to clarify responsibilities and requirements of both parties pursuant to the transfer of real property at the Sudbury Training Annex, Massachusetts (hereinafter the "Annex"), from the Army to FEMA. The authority to enter into this MOA is the Defense Base Closure and Realignment (BRAC) Act of 1990, Public Law 101-510, 10 U.S.C. Section 2687, note; and the Federal Property and Administrative Services Act of 1949 (FPASA), 40 U.S.C. Sections 471-544.

A. INTRODUCTION

The Annex was identified for closure under BRAC in 1995. FEMA has had a permit to occupy a part of the Annex hereinafter known as "Parcel I" since 27 May 1980 (hereinafter the "Use Permit Date"), and the Army will transfer to FEMA a total of 71.525 acres of land (hereinafter the "FEMA Parcel") that includes 5 non-contiguous small parcels, including Parcel I. FEMA intends to continue to use the land for its operations and training missions. The FEMA Parcel includes two large buildings (one above ground and one under ground), several communication antennas, and other structures and improvements that were owned and operated by FEMA on Parcel I. The boundaries of the FEMA Parcel are identified in the official survey map and legal description dated December 1998, copies of which are on file with the U.S. Army Corps of Engineers, New England District, Concord, Massachusetts, and attached as Exhibit A to the letter of transfer.

NOW, THEREFORE, the parties agree as follows:

B. TRANSFER OF REAL PROPERTY

1. The Army agrees to transfer by DD form 1354, and FEMA agrees to accept the transfer of , certain real property (hereinafter referred to as the "Property") consisting of a total of 71.25 acres of land (the FEMA Parcel) located at the Sudbury Training Annex, Massachusetts, and including 5 non-contiguous small parcels, among them Parcel I. FEMA intends to continue to use the land for its operations and training missions. The FEMA Parcel includes two large buildings (one

above ground and one under ground), several communication antennas, other structures and improvements that were owned and operated by FEMA on Parcel I since the Use Permit Date.

2. In accordance with an Office of Management and Budget waiver dated 26 September 2001, the acquisition of the FEMA Parcel, the buildings located on the Parcel, and the fixed equipment will be conveyed to FEMA for no-cost.

C. ACKNOWLEDGMENTS AND GENERAL CONDITIONS

1. The Army has had no operational presence on the property or facilities owned, built, or operated by FEMA on Parcel I since the Use Permit Date.

2. The Army has completed an Environmental Baseline Survey (EBS, January 1997), the BRAC Cleanup Plan Report (October 1996), and an Environmental Condition of Property (ECOP, August 2002). The ECOP and the EBS summarize what is known about the environmental condition of the property and reflect the Army's finding that the property is suitable for transfer to another federal agency, FEMA, for its continued use as a management facility and as a training area. FEMA acknowledges receipt of the EBS and ECOP. The Army has completed any necessary remediation for the FEMA Parcel as identified in the EBS and further described in the ECOP. FEMA has been given the opportunity to inspect the property.

3. In accordance with the National Environmental Policy Act, the Army completed a Record of Environmental Consideration (REC) dated 16 Jan 97 for this property disposal and determined that the disposal would not have any significant impact on the quality of the natural or human environment. FEMA acknowledges receipt of a copy of that REC.

D. ENVIRONMENTAL CONDITION AND COMPLIANCE RESPONSIBILITIES

1. The Army and FEMA acknowledge that the Annex was previously listed as a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended. The Army has provided FEMA with a copy of the Sudbury Training Annex Federal Facility Agreement (FFA) entered into by the United States Environmental Protection Agency, Region 1, (EPA) and the Army on 13 May 1991, and made effective on 15 November 1991; and FEMA acknowledges receipt of this document. The Army agrees to provide FEMA with any future amendments to the FFA. FEMA agrees to take no action inconsistent with the terms of the FFA. The environmental remediation of the Sudbury Training Annex NPL Site was undertaken by the Army in accordance with the FFA negotiated with the EPA and in cooperation with the Massachusetts Department of Environmental Protection (MADEP). The Army and FEMA agree that should a conflict arise between the terms of the FFA as it presently exists or as amended and the provisions of this MOA, the terms of the FFA will take precedence over the provisions of this MOA. The Army will inform FEMA of any such conflicts affecting the FEMA use of its parcel. Both parties to this MOA are required to provide notice to EPA and MADEP of any modifications, amendments or termination of the

MOA. FEMA and it successors and assigns shall take no action inconsistent with the terms of the FFA.

2. If there is an actual or threatened release of a hazardous substance on that portion of Parcel I which has been occupied by FEMA since the Use Permit Date, or in the event that a hazardous substance is discovered on that parcel after the Use Permit Date, FEMA or its successors or assigns shall be responsible for such release or newly discovered substance, unless FEMA can adequately demonstrate that such release or newly discovered substance was present on the property prior to the Use Permit Date or such release or newly discovered substance is determined to be attributable to past activities of the Army, its contractors or agents. This paragraph shall not affect the Army's responsibilities to conduct Response Actions that are required by applicable laws and regulations.

3. The FEMA Parcel may include buildings, structures or other improvements with asbestos containing materials (hereinafter "ACM"), lead-based paint, and/or polychlorinated biphenyls (hereinafter "PCBs"). To the extent it is available, information regarding ACM, lead-based paint, and PCBs on the Property is contained in the EBS and the ECOP. After the date of transfer, the FEMA shall be responsible for any and all remediation or abatement of any remaining ACM, lead-based paint, and PCBs on the Property.

4. Right of Access

a. The Army reserves a right of access to and over any and all portions of the FEMA Parcel for itself and its officers, agents, employees and contractors, for purposes of conducting Response Actions after the date of transfer in order to fulfill the Army's environmental responsibilities under this Agreement, the FFA (including Section IX - ACCESS of the FFA), and applicable law. This right shall run with the land, and FEMA shall provide for and preserve the right of access to the property by the Army as set forth in this Subsection in any subsequent transfer or conveyance of the Property. Except in case of imminent endangerment to human health or the environment, the Army shall give FEMA or the then record owner of the affected portion(s) of the FEMA Parcel reasonable prior notice of the Response Action(s) to be conducted on the FEMA Parcel, and shall use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with FEMA's or such record owner's use of the FEMA Parcel. Subject to the provisions of this Agreement, and except as otherwise provided for by law, FEMA, such record owner, and any other person shall have no claim or cause of action against the Army, or any officer, agent, employee or contractor of the Army, for interference with the use of the FEMA Parcel arising from Army implementation of the FFA or Army Response Actions taken under this Subsection.

b. Nothing in this Agreement shall limit or otherwise affect the Army's, EPA's or MADEP's rights of access to and over any and all portions of the FEMA Parcel under applicable law for purposes including but not limited to:

(1). conducting oversight activities, including but not limited to investigations, sampling, testing, monitoring, verification of data or information submitted to EPA or MADEP, and/or site inspections, in order to monitor the effectiveness of Response Actions and/or the protectiveness of any remedy which is required by (i) any record of decision ("ROD") or amendments thereto-or (ii) any decision document approved by MADEP and issued by the Army under applicable state law before or after the Date of Transfer.

(2). performing five-year reviews as required by CERCLA, and;

(3). taking additional Response Actions in accordance with applicable law and the FFA.

5. FEMA shall comply with any institutional controls established or put in place by the Army relating to the FEMA Parcel which are required by any ROD or amendments thereto. Additionally, FEMA shall ensure that any leasehold or transfer it grants in the FEMA Parcel or any fee or easement interest conveyance of any portion thereof provides for legally binding compliance with the institutional controls required by any such ROD.

6. For any portion of the FEMA Parcel subject to a Response Action under CERCLA or the FFA, FEMA and its successors and assigns (i) shall, prior to the conveyance of an interest therein, include in all conveyance documents provisions for allowing the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to CERCLA or the FFA on said portion of the FEMA Parcel, and (ii) shall notify the Army and EPA by certified mail at least sixty (60) days prior to any such conveyance of an interest in said property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to CERCLA or the FFA.

7. FEMA acknowledges that arsenic-based herbicides were applied in the vicinity of the fence-line along Patrol Road and on the former railroad beds on the northern and southern portions of the Sudbury Annex, and that the Army has concluded, after completing a facility-wide investigation, that the resulting concentrations of arsenic in the soil do not pose an unacceptable risk to human health or the environment based on the future land use of the FEMA Parcel for operations (offices, a communication center, storage space and communication antennas) and training (in establishing mobile communications centers in the field).

a. FEMA is informed and does acknowledge that pesticides may be present on the Property. To the best of the Army's knowledge, the past use and application of any pesticide product by the Army was in accordance with its intended purpose, and any pesticide residue resulting from such application does not an unacceptable risk to human health and the environment. To the extent allowed under CERCLA Section 107(i), the Army assumes no liability for damages or for future remediation of such pesticide residue.

b. FEMA agrees that its continued possession, potential use and continued management of the Property, including any demolition of structures, will be in compliance with all applicable laws relating to hazardous substances/pesticides and hazardous wastes.

c. To the best of the Army's knowledge and according to FEMA, there are no hazardous materials that remain or pose an unacceptable risk to human health or the environment on this property. No transformers containing PCB are on the property, nor has any lead-based paint or friable asbestos been identified during inspections. Since the Army does not own, operate or maintain any buildings or structures on the FEMA Parcel, the environmental condition and responsibility for any remediation found to be necessary for these buildings and any other structures will remain the responsibility of FEMA. FEMA agrees that its future use of the property after the date of transfer will be in compliance with all applicable laws relating to hazardous substances, petroleum, underground and above-ground storage tanks, PCBs, asbestos, lead based paint, radiological materials, radon, etc. Both the Army and FEMA agree that institutional controls listed in the MOA will be maintained even though the site has been delisted from the NPL.

8. Information received from FEMA indicates that there is no lead-based paint in the buildings on the property. However, because of FEMA access restrictions to the buildings constructed and operated by FEMA, this cannot be confirmed by the Army. Available information concerning known lead-based paint and/or lead-based paint hazards contained in the Environmental Baseline Survey, have been provided to FEMA. FEMA hereby acknowledges receipt of all of the information described in this paragraph. Further, FEMA acknowledges that it has received the opportunity to conduct its own risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this document

a. The Army and FEMA acknowledge that all buildings on the FEMA Parcel, which were constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint on the interior and/or exterior. Continued exposure to lead from paint, paint chips, and dust may pose a health hazard to young children if not managed properly. Prior to occupation of such buildings for residential purposes, FEMA will be responsible for the evaluation, notification, management, and abatement, if necessary, of any lead-based paint hazards in accordance with Applicable Law; to include the guidelines and regulations established pursuant to Title X of the Housing and Community Development Act of 1992. Residential buildings or property means dwelling units, common areas, building exterior surfaces; and, buildings visited regularly by the same child, 6 years of age or under, on at least two different days within any week, including day-care centers, preschools and kindergarten classrooms and similarly used buildings; and, any surrounding land, including outbuildings, fences and play equipment affixed to the land, available for use by residents and children; but not including land used for agricultural, commercial, industrial, or other non-residential purposes; and, not including paint on the pavement of parking lots, garages, or roadways.

b. FEMA further covenants that it and its successors and assigns shall include in any

deed or other conveyance document transferring any interest in any or all of the FEMA Parcel a restrictive covenant that identifies the use restriction set forth in this Subsection D.8 to all successors in interest to any interest in any part or all of the FEMA Parcel. It is the intention of FEMA and the Army that this use restriction shall run with the land comprising the FEMA Parcel.

9. FEMA acknowledges that prior to the transfer of the FEMA Parcel to FEMA, the Army completed an Ordnance and Explosives Survey/Removal Action covering the entire Annex to determine if explosives or ordnance (OE) existed on the site. No OE was discovered. The Conclusion of the Final UXO Characterization Report of 18 February 1998, however, states that: "Unless 100 percent of the site is searched, it cannot be positively determined with complete accuracy that no OE is present on the site. However, based upon the results of the surface and sub-surface activities and the results of the Site Stats/Grid Stats Random Selection Program, Sudbury Annex, Massachusetts, it does not show evidence of being contaminated with OE or OE related material and can be excessed without further UXO activities except the 18 earth covered magazines. The interiors of these magazines require an inspection prior to being released with the Annex." The magazine area is not located near the FEMA parcel. FEMA acknowledges receipt of a copy of the Conclusions of the Army's Final UXO Characterization Report of 16 February 1998.

10. FEMA acknowledges that the subsurface soil below the depth of four (4) feet on the FEMA Parcel may contain OE or OE-related material as a result of past Army activities on the FEMA Parcel.

a. FEMA covenants on behalf of itself and its successors and assigns that, except as provided herein, no activity or use shall be undertaken on the FEMA Parcel that might disrupt or otherwise negatively impact the subsurface soil below the depth of four (4) feet. Such prohibited activities and uses shall include any disturbance of the subsurface soil below the depth of four (4) feet in any manner, including but not limited to construction activities such as filling, drilling, excavation or change of topography. FEMA covenants on behalf of itself and its successors and assigns that if, however, it or its successor or assign wants to undertake an activity or use on the FEMA Parcel that will disrupt or otherwise negatively impact the subsurface soil below the depth of four (4) feet, including any construction activities involving the disturbance or disruption of the subsurface soil below the depth of four (4) feet, FEMA or its successor or assign, following written notice to and approval by the Army of any such activity or use, shall pay for all costs associated with the clearance or removal of any OE or OE-related material discovered on the FEMA Parcel below the depth of four (4) feet. FEMA further covenants on behalf of itself and its successors and assigns, that it shall include in any deed or other conveyance document transferring any interest in any or all of the FEMA Parcel a restrictive covenant that identifies the use restriction and conditions set forth in this Subsection. It is the intention of FEMA and the Army that this use restriction shall run with the land comprising the FEMA Parcel.

b. The Army covenants to FEMA and its successors and assigns that the Army shall provide OE safety assistance at no cost to FEMA or its successor or assign, including the clearance or removal of any OE or OE-related material discovered on the FEMA Parcel in the course of non-construction activities, including but not limited to landscaping, routine repair and maintenance, security surveys, and other activities not involving the disturbance or disruption of the subsurface soil on the FEMA Parcel below the depth of four (4) feet. FEMA and its successors and assigns shall notify the Army immediately if any OE material is discovered. The Army also covenants to FEMA and its successors and assigns that it shall be responsible for the investigation and clearance or removal of all chemical munitions and all OE refuse sites found on the FEMA Parcel. An OE refuse site is defined as a site where military munitions have been collected and disposed of by burial on which there are ten (10) or more munitions in a cubic yard. FEMA covenants on behalf of itself and its successors and assigns that it and its successors and assigns shall include notice of these Army covenants in any deed or other conveyance document transferring any interest in any or all of the FEMA Parcel.

11. Lands to be transferred to FEMA have been partially surveyed for historic properties. Known archeological sites are present on the property. These sites may be eligible for the National Register of Historic Places. As a federal agency, with the responsibility to comply with all federal laws and regulations that govern the treatment of cultural resources, FEMA will be responsible for the completion of any necessary historic property inventories for lands it is to receive from the Army and for taking into account the effects of its undertakings on historic properties discovered there.

E. LIABILITY

1. Each party to this Agreement shall be responsible for any liability arising from its own conduct. Neither party agrees to insure, defend, or indemnify the other.

2. Except as otherwise provided in this MOA, the Army, rather than FEMA, shall remain liable and responsible for any costs, claims, or damages arising against the U.S. Government for the use, management, release or disposal of hazardous substances, hazardous waste, or petroleum products, or any other contamination thereof existing on or emanating from Parcel I prior to the Use Permit Date and for the remainder of the FEMA Parcel up until the date of transfer to FEMA. FEMA assumes liability and responsibility for contamination caused by use, management or release of hazardous materials, hazardous substances, hazardous wastes or petroleum products by FEMA for Parcel I as of the Use Permit Date and for the FEMA Parcel as of the date of its transfer to FEMA.

3. In the circumstances described in Subsection D.2. above, the Army shall remain responsible for funding and implementing actions to include investigations, sampling, testing, cleanup, restoration, maintenance, monitoring, closure, five-year reviews, site inspections, removal actions, remedial actions, corrective actions and any other actions necessary to ensure

the protection of human health and the environment. FEMA shall assume no liability or costs arising out of or related to contamination existing prior to the FEMA Use Permit Date for Parcel I or prior to the date of transfer for the remainder of the FEMA Parcel.

4. FEMA agrees to hold the Army harmless from, and indemnify the Army against, any liability for any claims arising out of or in any way predicated on release of any hazardous substance on Parcel I occurring after the Use Permit Date, and on the remainder of the FEMA parcels after the date of transfer, where such substance was placed on the property by FEMA, its successors or assigns, its agents, contractors, invitees, or its lessees or subleases. Unless it is attributable to Army occupancy of the property, the Army will have no liability for future remediation of any hazardous substances, petroleum, underground and above ground storage tanks, PCBs, asbestos, lead-based paint, radiological materials, radon, etc., and will have no liability for damages for personal injury, illness, disability, or death to FEMA employees, officers, or agents, or any successors or assigns, lessees, licensees, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with such substances on the property, whether or not FEMA, its successors or assigns have properly warned or failed to properly warn the individual(s) injured.

F. TRANSFER OF THIS PARCEL WITHOUT WARRANTY OR REPRESENTATION

1. FEMA shall accept transfer of the FEMA Parcel, including all FEMA owned, built, and operated buildings, structures and other improvements from the Army without any representation, warranty, or guaranty by the Army as to the quality, character, condition, size, kind, or that the same is in condition or fit to be used for the purpose FEMA intends, except for the Army's position that the property is suitable for transfer and the Army's continuing obligations as provided within this MOA.

2. FEMA shall covenant for itself, its successors, and assigns that it shall include in any subsequent grant, lease, transfer or conveyance documents all required covenants and restrictions described in this MOA (such as residential use restriction, digging/ground disturbance limitations) as well as any required because of FEMA ownership and operation of the facilities (such as lead-based paint, PCBs and asbestos) and CERCLA 120(h). FEMA agrees that these institutional controls are necessary on the property because of its occupancy, benefit the public in general and the territory surrounding the property, run with the land, and are enforceable by the U. S. Government.

F. NOTIFICATION REQUIREMENTS

Any notices to be provided pursuant to this MOA shall be addressed to:
-U.S. Army: Commander, Devens Reserve Forces Training Area, 31 Quebec Street, Devens, MA 01432-4424, telephone (978) 796-3053.

- Federal Emergency Management Agency: Mr. Vernon L. Wingert, Chief, Support Services Liaison Branch FEMA, 500 C St., SW, Room 325, Washington, DC 20472, telephone: (202) 646-2872.

G. MISCELLANEOUS AGREEMENTS

1. If any provision of this MOA becomes invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the extent permitted by law and regulation.

2. In the event of a dispute between the parties, The Army and FEMA agree that they will use their best efforts to resolve the dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative dispute resolution mutually acceptable to the parties.

H. OBLIGATION OF APPROPRIATIONS

No provision of this agreement shall be interpreted or applied so as to obligate the Army or FEMA in excess or advance of appropriations or otherwise so as to result in a violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.

IN WITNESS WHEREOF, each of the parties has executed this MOA effective on the date last signed, the 21st day of March 2003.

DEPARTMENT OF THE ARMY

JOSEPH W. WHITAKER
Deputy Assistant Secretary of the Army
(Installations and Housing) OASA(I&E)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MICHAEL D. BROWN
Acting Under Secretary
Emergency Preparedness & Response
Department of Homeland Security,
on behalf of the Federal Emergency Management Agency

COMMONWEALTH OF VIRGINIA)

COUNTY OF ARLINGTON)

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia, County of Arlington, whose Commission as such expires on the 30th day of November, 2006, do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, whose name is signed to the foregoing document and acknowledged this document is his free act and deed, dated this 21st day of March, 2003.

Karen A. Cooper
NOTARY PUBLIC

THE DISTRICT OF COLUMBIA

Subscribed and sworn to before me by Michael D. Brown, who is to me well known, this 31st day of March, 2003.

Andrea L Williams

ANDREA WILLIAMS
Notary Public, District of Columbia
My Commission Expires May 14, 2006

APPENDIX E

PHYSICAL ON-SITE INSPECTION

Physical on-site inspection

In annual reports, the USACE has reported on:

1. Land use conditions (presence of buildings and level of recreational use of the site);
2. Evidence of any changes to the use of the site;
3. Evidence of any disturbance to the integrity of the landfill containment system at AOC 7;
4. Evidence of any disturbance to the function of the monitoring system in place at AOC 7;
5. Evidence of any significant excavation or surface or subsurface soil disturbance at AOC 7;
6. Evidence of any activities that have disrupted or otherwise negatively impacted the subsurface soil at the Site below the depth of four (4) feet; and
7. Such other conditions as the Army, EPA and MADEP Project Managers may determine are necessary to evaluate the continued protectiveness of the institutional controls. The party conducting the inspection will annotate all observations, including observation of any known or suspected violations, on an inspection checklist.

Semi-annual checklists have been used to document the condition of the geotechnical inspections, and these have been presented along with tables of gas vent monitoring results.

Deficiencies such as damage to the fence or necessary landscaping issues have been documented and have been addressed as part of the ongoing site maintenance.

Currently, the Army is aware of recent (Spring 2006) road grading work along the track road north of the AOC A7 site and an empty drum carcass that was discovered inside the site fence, north of Well OHM-A7-12.

GEOTECHNICAL MONITORING AND MAINTENANCE REPORT

SECTION 1: LANDFILL CAP MONITORING AND MAINTENANCE

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 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.

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 May 4, 2006. No maintenance activities were performed during these inspections. Observations were made regarding the vegetative cover, vegetation types, erosion, settlement, and general condition of the various features. The Inspection and Maintenance checklist follows directly after the text of this geotechnical monitoring and maintenance report; landfill gas summary data have been incorporated into Tables 9 through 12 of the 2006 Five-Year Review Report. A narrative of the findings of the inspection follows.

The landfill cap is in 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 in September 2005. 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.

2. Other Maintenance

a. Access Road Inspection.

The access road from the AOC A7 entry gate to the cap is in excellent condition. There are no ruts, potholes, or eroded areas. No repairs are required.

b. Security Fence Inspection.

The security perimeter fence is in good condition. There was one large branch and some small branches on top of the fence, but there were no other sagging or leaning sections noted, and the main gate is operating normally. The branches should be removed. Along the entire perimeter of the fence, large trees are growing within 5 feet of the fence, and smaller trees are becoming established. To protect the fence from damage, a five-foot clear zone should be established for

the entire fence on both sides. In general, trees should periodically be cleared from fence area as they naturally grow or fall onto the fence.

SECTION 2: DRAINAGE SYSTEM MAINTENANCE

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 drainage channels, and a riprap lined outlet area (located at the northeast corner of the landfill).

The Sudbury Training Annex Landfill Drainage System at Area A7 was inspected on May 4, 2006 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 an herbicide should be applied to the riprap areas to eliminate unwanted vegetation which is becoming established. All other areas of the drainage channels are free of unwanted vegetation. The grass on drainage channel bottoms is in excellent condition. 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 at this time. Toe drains should continue to be monitored for vegetative growth, and the growth should be periodically removed to maintain the proper operation of the toe drain. No repair actions for the drainage system are recommended.

SECTION 3: GAS VENT SYSTEM MAINTENANCE

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 May 4, 2006 by personnel from the U.S. Army Corps of Engineers, New England District (NAE). The landfill gas monitoring data are incorporated into Tables 9 through 12 of the 2006 Five-Year Review report.

The findings of the inspection follow.

The gas vent system is in good condition. All vent pipes and bird screens are intact and functioning as intended. Gas monitoring activity at the four gas vents resulted in zero readings

during the spring inspection for methane and LEL; carbon dioxide ranged from 0.3 at V-3 to 1.3 at V-2; and no VOCs were detected at any of the vents. Oxygen levels varied slightly but mostly reflected ambient conditions. A GA-90 landfill gas monitor was used to monitor the gas vents for methane, carbon dioxide, oxygen, and LEL. A PID was used to check VOC levels.

SECTION 4: CORRECTIVE ACTION

The drainage system and gas vent monitoring system were in very good condition with no repairs needed at this time. A five-foot clear zone should be established for the entire fence on both sides by cutting all vegetation to the ground level. The branches on the perimeter fence should be cleared during annual maintenance. An herbicide should be used on riprap areas where unwanted vegetation has appeared. It is also recommended that the mowing of the cap continue to include mowing of the adjacent fields. Mowing will not take place until late August when ground-nesting songbirds are mature enough to avoid being harmed.

Inspection & Maintenance Check List
Sudbury Training Annex A7 Landfill

Inspector: Jonathan Kullberg, P.E. **Date: 4 May 2006**

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 or ponded water observed.
	Inspect for Wetland Species Encroachment	X	No encroachment of wetland species observed
	Inspect Vegetated Areas	X	Vegetation healthy and dense with appropriate species growing. Mowed in 09/05.
Drainage System	Inspect Stone Toe Drain	X	Good condition, appears to be functioning properly, *continue to monitor for clogging.*
	Inspect for Eroded Areas	X	No erosion noted, no action required.
	Inspect Grass in Drainage Channels	X	Channel bottom grass excellent. Side slopes are adequately vegetated.
	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 but no woody species; *herbicide should be applied to control vegetation.*
Gas Vent System	Inspect Vent Pipe and Bird Screen	X	All vent pipes and bird screens in good condition

Gas Vent System	**Methane Monitoring** **Vent 1** **Vent 2** **Vent 3** **Vent 4**	**X**	**Results** **Gas sampling at the 4 gas vents resulted in zero readings for methane and LEL, and minimal levels of VOCs and CO_2; oxygen levels ranged from 19.0 to 20.6 percent. See also Landfill Gas Monitoring Table, following, and 2006 Five-Year Review Tables 9 through 12 .**
Groundwater Monitoring Wells	**Inspect Casings and Locks**	**X**	**Inspection done by groundwater monitoring crew**
Security Fence	**Inspect for Damage to or Breaches in**	**X**	**Security fence and gates in good condition. See plan for locations of branches on fence. *All live vegetation should be cleared from both sides of the fence to protect the fence from damage.***
Access Road	**Inspect for Erosion, Potholes and Rutting**	**X**	**Access road in excellent condition, no erosion, potholes, or rutting observed**

The following maintenance and monitoring activities are recommended:

- **Semi-annual inspections for all components of cap and perimeter.**
- **Remove all vegetation within five feet of fence on both sides.**
- **Annual lawn mowing and clearing of branches from fence line.**
- **Apply herbicide on riprap areas as needed.**
- **Filling of animal burrows as required.**

Landfill Gas Monitoring

INSPECTOR: Kullberg/Michalak TITLE: Civil Engineer DATE: 5/04/06

ORGANIZATION: CENAE-EP WEATHER: Partly Sunny, 70° F

BAROMETER: 29.7 in Hg TIME: 1000 BAROMETER: 29.4 in Hg TIME: 1100

Vent No.	VOC ppm PID	O_2 % Landtech GA-90	LEL % LT GA-90	CO_2 % LT GA-90	CH4 % LT GA-90	Remarks
V-1	0	19.7	0	0.7	0	No odor
V-2	0	19.0	0	1.3	0	No odor
V-3	0	20.3	0	0.3	0	No odor
V-4	0	20.6	0	0.1	0	No odor

CALIBRATION INFORMATION:
Instrument: Thermo Environmental 580B PID 10.6 SN#: 272
Calibrated by: US Environmental Rental Co. 4 May 2006
Calibrated With: 100 ppm isobutylene (R.F. = 1.0)

Instrument: Landtec GA 90 Serial#: G-1388
Calibrated by: US Environmental Rental Co.4 May 2006
Calibrated With: 15% CH_4, 15% CO_2, 20.9% O_2

APPENDIX F

EXTENDED STUDIES:
ARSENIC AND AOCS All, A12, PI, P4, P27, P28 AND P31/58

1.0 INTRODUCTION

The 2006 five year review covers the time period July 2001 to June 2006. The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The one statutory review for AOC A 7 is included in the text of the main report. The other 72 sites are outlined in Table 1 of the report. For the reader's benefit, this appendix has been compiled to provide extended summaries of the Annex-wide arsenic study and of AOCs All , A12, PI, P4, P27, P28, and a combined summary for AOCs P31/P58. The reader is referred to the References section of the main report for full names of documents cited in this appendix.

2.0 EXTENDED STUDY: ARSENIC IN SOIL AT PATROL (PERIMETER) ROAD, FORMER RAILROAD BEDS, AND PERIMETER FENCE

During CERCLA site characterization at the seventy-three sites, lead and arsenic were frequently found in surface soils at concentrations exceeding background concentrations. These excessive concentrations did not appear to be related to any known dumping or spills, but it was noted that 15 affected AOCs were located along the perimeter road or former railroads. They were A10, P1, P4, P9, P16, P17, P23, P27, P28, P38, P45, P54, P59, P60, and P61. Sites P27, P31, and P58 were initially included, but they were subsequently determined to fit a different pattern of contamination.

2.1 Investigations

The arsenic investigation was investigated in phases from 1995 to 2001 and documented in reports generated in 1996 to 2001 (ABB 1996; HLA 1999; Harding ESE 2001). Following archive research, a conceptual model was developed. Soil sampling was performed with a calculated risk threshold screening concentration (RTSC) of 540 mg/kg. In 37 initial composite samples, the average concentration was 124 mg/kg and the maximum concentration was 300 mg/kg. Arsenic concentrations exceeded a trigger concentration of 125 mg/kg in 8 of 32 samples from Patrol Road and in 24 of 37 samples from the railroads. The trigger concentration was intended to indicate that the composite sample likely included an increment in which the concentration exceeded the RTSC.

Following results of focused surface soil sampling, sub-surface soil sampling results were reviewed and further soil boring samples were taken from as deep as eight feet.

An archives-search by HLA had indicated that herbicides containing arsenic had been used in the 1940s and possibly the 1950s in and around Patrol Road and railroads in the Annex. A typical application was to maintain a clear line-of-sight along these features as a security precaution.

The pesticides were applied as intended with the highest concentrations closest to the clearings, and there was no indication of contamination related to disposal activities.

2.2 Findings

Arsenic-contaminated soil at AOC P27 did not conform to the pattern of herbicide deposits resulting from proper application. Thirty soil samples were taken and all contained arsenic exceeding the background concentration of 17 mg/kg: most arsenic concentrations at AOC P27 were above 100 mg/kg, many were above 500 mg/kg, and one was 1,200 mg/kg. Based on these findings, contaminated soils were removed from AOC P27 where arsenic concentrations exceeded 250 mg/kg.

The herbicide was determined to be sodium arsenite (Atlas A) weed killer, leading to the conclusion that stream sediment was the only medium with a credible potential for migration of arsenic. A human health risk evaluation (HHRE) noted that onsite groundwater was being used, that there were occasional joggers and dirt-bikers, and that the USFWS might choose to upgrade facilities to create a wildlife refuge office. Nearby residents of the Hudson Family Housing would receive water from the Stow public water supply. For recreational visitors, Hudson Family Housing residents (aged 1 through 30), USFWS workers, and utility workers at the proposed wildlife refuge, cancer risks (excess lifetime cancer risk [ELCR]) were estimated to range from $3X10^{-7}$ to $3X10^{-5}$, with the estimated non-cancer hazard index (HI) ranging from 0.1 to 1.0. Since the risk estimates were determined to be appropriately protective and within the generally accepted EPA range of risks, and the non-cancer risk estimates did not exceed the EPA non-cancer risk threshold, it was concluded that the arsenical herbicide did not present an unacceptable risk to human health.

An ecological risk evaluation (ERE) was conducted for a number of species including earthworms, the amphipod Hyalella azteca, blueberry plants, the American woodcock, the American robin, the northern cardinal, the short-tailed shrew, the white-footed mouse, the red-tailed hawk, the red fox, the white-tailed deer, the muskrat, the raccoon, the great blue heron, the mallard, and fish, with reference also to rare, threatened, or endangered species and wetland plants.

Soil toxicity was assessed by reviewing a 28-day bioaccumulation study in which laboratory controls were compared to six soil samples from various locations at the Annex at which concentrations ranged from 7.75 mg/kg to 1,100 mg/kg. Growth and mortality did not differ from the control after 28 days of exposure to soil. Arsenic uptake appeared to be proportional to the concentration of arsenic in the soil.

Sediment toxicity was assessed by reviewing ten-day growth and survival of a freshwater invertebrate (the amphipod *Hyalella azteca*) exposed to sediment from the site. There were no clear differences in growth or survival between amphipods in a laboratory control and those exposed to sediment with an arsenic concentration ranging from 2.98 mg/kg to 570 mg/kg.

The little bluestem was found to have concentrations of arsenic in its foliage that were proportional to the concentrations found in the associated soil. Blueberry plants were found to exhibit the same pattern of arsenic concentrations proportional to soil concentrations, but there was no arsenic in the berries themselves.

Hazard quotients (HQs) were below 1 for all terrestrial wildlife receptors except the short-tailed shrew (1.0 to 1.1) and the American woodcock (1 to9.1). The estimates had been based on lifetime exposures to soils with elevated arsenic content only, whereas animals would be free to range more widely through the Annex. Further, the bioavailability of the arsenic in soil at the Annex was estimated to be about 40%, as opposed to the EPA-default 80% used in the calculations. Taking this information into account, a finding was reached of no significant risk to terrestrial wildlife populations at the Annex.

HQs associated for semi-aquatic wildlife were found to be less than the limit of one for all cases except the muskrat, which had a sublethal HQ equal to one. This was based on an aquatic plant concentration of 8.7 mg/kg that was based on bioaccumulation factors taken from the literature that were found to be likely to overestimate actual concentrations. A finding was reached that significant risk to semi-aquatic wildlife populations was unlikely.

2.3 Conclusions

Conclusions presented in 2001 (as revisions to the earlier report in 1999) were that:

- The Army routinely applied liquid sodium arsenite along the perimeter fence and along all railroad tracks at Sudbury Annex during the 1940s, to eliminate vegetative cover.

- Arsenic concentration in surface soil exceeded background concentrations along Patrol Road. The highest concentrations were found at the perimeter fence, and concentrations decreased in both directions away from the fence.

- Arsenic concentrations did not exceed background concentrations in surface soil along roads at Sudbury Annex other than at Patrol Road and the former railroads.

- Arsenic concentrations at road intersections were not significantly higher than concentrations along the roadways.

- Arsenic concentrations in stratified random surface-soil samples were within the expected ranges predicted by the conceptual transect models.

- Arsenic concentrations in a significant number of surface-soil samples from AOC P27 were outside the range predicted by the Patrol Road conceptual transect model, but the concentrations did not meet the definition of a hotspot in the MCP. Although several of the concentrations at P27 were higher than expected for a given distance from the centerline of Patrol Road based on the model developed, only three concentrations slightly exceeded the maximum value for transect data on which the conceptual model had been based. Variability in concentration was determined to be expected due to variability in the rate of application, number of applications, weather during application, and other factors.

- At locations with elevated arsenic concentrations in surface soil, the arsenic concentrations in shallow subsurface soil were consistently and significantly lower than in the surface soil.

- Arsenic concentrations were generally low in groundwater and surface water.

- There were both high and low arsenic concentrations in sediment at and adjacent to the perimeter fence, former railroads, and at AOC P28. Elsewhere, arsenic concentrations in sediment were low (The study had reviewed arsenic concentrations in sediment at 15 locations where streams passed under roads).

- Arsenic was not detected in fruit from the high-bush blueberry, even from locations with high arsenic concentrations in soil. In foliage samples from the high-bush blueberry, there was a direct linear correlation between arsenic concentrations in the plant tissue and arsenic concentrations in the associated soil.

- There was arsenic in tissue from the herbaceous plant little bluestem, but there was no consistent correlation with the soil arsenic concentrations.

- The leachability of arsenic from surface soil at Sudbury Annex did not exceed 19 percent. In-vitro testing indicated that the bioavailability of arsenic in surface soil at Sudbury Annex ranged from 30 to 50 percent, with an average of 40 percent.

- Analytical data describing the chemical species of arsenic in soil indicated that in soils with total arsenic at concentrations greater than background, the arsenic was present mainly as As^{5+}, a less bioavailable pentavalent form that is less toxic than the form assumed in the associated human risk evaluation.

- Arsenic at Sudbury Annex was not mobile, with very little potential for migration.

- Cancer risks associated with arsenic at the Sudbury Annex did not exceed the EPA cancer risk range of 10^{-6} to 10^{-4}. No non-cancer risks exceeded the EPA non-cancer risk threshold of a hazard index of 1. Cancer risks for the various receptors evaluated were generally 1×10^{-5}, and non-cancer risks were generally below 0.5. These conclusions applied to facility-wide conditions and to all study areas (all AOCs) at Sudbury Annex.

- There was no significant toxicity or risk to aquatic invertebrates, with the exception of localized areas within AOC P27, where the Army had performed a removal action. Plants, terrestrial wildlife, and semiaquatic wildlife at Sudbury Annex did not appear to be at risk. These

conclusions applied to facility-wide conditions and to all study areas (all AOCs) at Sudbury Annex.

2.4 Protectiveness

USFWS maintains an institutional control that bars development in the vicinity of the perimeter road and railroads. This restriction is a requirement in terms of Section C6 of reference MOA 2000, which was signed on September 28, 2000. The prior findings for the arsenic investigation appear to support environmental and human health protection at the Annex. Although a state forest is shown on USFWS maps surrounding the former annex and including AOC P31, the noted MOA specifically applies to both sides of the perimeter fence.

2.5 Issues

None.

3.0 EXTENDED SITE-SPECIFIC SUMMARIES

This section presents extended summaries for 6 sites where there may be concerns over whether conditions are suitable for unrestricted land use, a combined extended summary for AOC P58 and neighboring AOC P31. For these sites, no further action decision documents (NFADDs) have recorded the statutory agreement that no further remedial actions or reviews need be conducted. Many of the documents noted in this section are referenced with the identification number maintained in the Sudbury Training Annex's Administrative Record (AR).

3.1 AOC All Leaching Field

3.1.1 Site Location and Description

AOC Al 1 was a sanitary sewer leaching field and served as the pump house and water purification systems for a nearby residential housing area. It is located in the southern part of the Sudbury Training Annex, east of the intersection of Marlboro Brook and Diagonal Road (Weston 2001). It is bounded by Marlboro Brook and Diagonal Road on its western edge and by a forest on all other sides.

3.1.2 Site Chronology and Characterization History

A drum was removed from AOC A11 and staged with debris at AOC PI3. Soil samples were taken from the former drum location. AOC A11 was included in the first five year review as a site for which a no further action decision document had been completed. Remedial activities reportedly were completed.

3.1.3 Technical Assessment

Sample results prior to remedial actions indicate that several inorganics in surface water exceeded drinking water standards, and concentrations of arsenic in sediment exceeded human health screening values for soil exposures. Cadmium in soil exceeded ecological criteria. A risk assessment of post-remedial conditions was conducted in December 1998 for recreational visitors, workers, construction workers, and groundwater use as drinking water, with the finding of no significant risk. An NFADD was signed in December 1999 by the BCT (ABB 1996b).

3.1.4 Protectiveness

Because institutional controls are currently in effect at the USFWS property, the site remains protective of human health and the environment. The land use controls provide that a detailed review of site conditions is required prior to land use changes allowing more frequent human contact with the surface soils than might be expected in a wildlife refuge.

3.1.5 Issues

None.

3.2 AOC A12 Polychlorinated Biphenyl (PCB) Spill Area

AOC A12 is the site of a former PCB spill.

3.2.1 Site Location and Description

AOC A12 is located in the southern part of the Annex and on the southern side of Moore Road between Firehouse Road and Diagonal Road (Weston 2001). This site is located between AOCs P36 and P37, which were two buildings formerly occupied by Raytheon. These three AOCs were combined into OU5. AOC A12 was subject to a record of decision for no further action (NFA ROD) signed by the Army and EPA and concurred with by MassDEP in 1997.

3.2.2 Site Chronology and Characterization History

From 1983 to 1986, PCB materials being stored for removal were subject to puncture by trespassers engaged in recreational gunfire. Since the site is close to roads that were treated with arsenic-containing herbicides in the 1930s and 1940s, the surface soils have elevated concentrations of arsenic, in all, 300 gallons of oil and approximately 175 tons of PCB-laden soil were removed from the site.

3.2.3 Technical Assessment

After initial removal actions, confirmatory sampling results in 1985 included one PCB result of 10.7 mg/kg. Further removal was indicated, hi 1986, once the total excavation had reached 175 tons, further confirmatory samples yielded results of less than 4 mg/kg of PCBs. MassDEP approved the cleanup on March 1,1989. USAEC 1996 stated that no further five-year review should be required for AOC A12. Since the site is close to roads that were treated with arsenic-containing herbicides in the 1930s and 1940s, AOC A12 is included in the facility-wide arsenic study discussed in Section 3.

3.2.4 Protectiveness

Although the residual concentration of PCBs is higher than the MCP S-l soil standard of 2 ppm, the Army and MassDEP determined that post-remedial conditions were acceptable and approved the site clean up on March 1, 1989 (OHM, 1994). Because the soil standard has not changed since that time, the protectiveness at AOC A12 remains unchanged during the review period.

3.2.5 Issues

None.

3.3 AOC P1 Underground Storage Tank at Building T223

AOC P1 is the location of a former underground storage tank (UST) near Building T223.

3.3.1 Site Location and Description

AOC P1 is located across from Building T223 on the southeastern side of Patrol Road, approximately 1,600-ft northeast of the main gate of the Sudbury Training Annex (Weston 2001). The site consists of a former 1,000-gallon UST location, across the road and southeast of Building T223.

3.3.2 Site Chronology and Characterization History

Details are reported in ABB 1997 (AR document SU97032ABBS; ABB 1997), which reported concern over potential human exposures to arsenic in soils. Antimony was reported from filtered groundwater samples as "slightly above its primary MCLs".

The UST and associated piping were removed in 1992. The excavation measured 9 ft by 14 ft by 6.5 ft deep. The UST appears to have resided above the groundwater since groundwater was not encountered at the bottom of the excavation. The decision was made to enlarge the excavation to 10 ft by 16 ft. Confirmatory samples were taken, and based on the total petroleum hydrocarbon (TPH) concentrations exceeding 50 mg/kg, 3 monitoring wells were installed. The monitoring wells were sampled in November 1992, and TPH was not detected. Also in the fall of 1992, the Army collected five surface-soil samples downgradient of AOC P1and one surface water sample from a pond approximately 100 feet south of AOC PI.

A Phase II investigation was conducted in 1993-94. Soil borings were sampled and two rounds of groundwater samples were taken. Soil and groundwater samples were analyzed for VOCs, SVOCs, pesticides and PCBs, metals, and TPH.

The removal actions, post-removal investigations, and 1997 ABB report were followed by an NFADD, signed in 1999 (see HLA 1999).

3.3.3 Technical Assessment

VOCs were not detected in the post-excavation samples. Low concentrations of lead were found in two of the soil samples, at 19 and 70 mg/kg which are below the 110 mg/kg established background level for the Sudbury Annex.

The data collected at AOC P1verified that gasoline contamination from the UST was limited to the immediate area of the tank and had been excavated and removed by ATEC in 1992. A single result of arsenic at 120 mg/kg in surface soil was noted as consistent with the Annex-wide arsenic investigation, but there was little or no evidence of arsenic migration.

A human health preliminary risk evaluation was performed in 1997. A residential risk-based concentration for arsenic of 0.43 mg/kg was noted, as was the MCP S-l value of 30 mg/kg. The established background for arsenic at the Annex was 17 mg/kg. The one surface soil sample containing arsenic at 120 mg/kg was attributed to the Annex-wide arsenic contamination issue.

In the 17 subsurface soil samples that were analyzed for VOCs, SVOCs, pesticides, PCBs, metals and TPH, no analytes were detected above risk screening values or MCP S-2/GW-1, S-2/GW2, or S-2/GW3 standards. Taken in absence of the arsenic issue, the site would therefore be suitable for unrestricted use, but the arsenic results indicate the propriety of avoiding residential use where arsenic concentrations in soil are excessive.

The pesticides alpha-BHC (lindane) (0.1 µg/L) and heptachlor (0.026 µg/L) were found in one of five groundwater samples. The concentrations of these compounds exceeded concentrations associated with generally acceptable levels of risk. There were two exceedances of the cadmium, and two of the nickel, MCLs.

The concentrations fell in the range of the standards, exceeding federal and Massachusetts MCL standards, but not the risk based criteria for tap water. It should be noted that criteria for setting MCLs often include practical considerations, as well as risk or toxicity. For vanadium, two exceedances (130 and 204 µg/L) of the standards also exceeded the risk-based concentration. Chromium was detected at up to 182 µg/L. Aluminum, manganese, beryllium and antimony also were noted at elevated concentrations in some or all of the samples. The concentrations of these inorganics were notably diminished in filtered samples. It was determined that exposure to undissolved inorganics would be unlikely in a drinking water

supply well. Accordingly, the finding was reached that the inorganics in AOC P1groundwater did not appear to pose a substantial risk. An ecological PRE also was performed. The combined conclusions were that:

- Arsenic in the soil was a result of historical facility-wide arsenic-based herbicide applications
- Human exposure to subsurface soils were unlikely
- No substantial risk was identified for human exposures to AOC P1groundwater.
- No substantial risk was identified for potential plant and invertebrate exposures to arsenic in AOC P1soils, partly because the soil substrate provided a poor growth medium for plants and a poor habitat for soil invertebrates.

"No further action" was recommended for AOC P1, with a further recommendation that arsenic be treated as part of the facility-wide arsenic investigation. A no further action decision document was signed by the BCT in 1999.

3.3.4 Protectiveness

The site is protective of human health and the environment, so long as it is operated as a part of a wildlife refuge. There were some exceedances of human health and environment standards: in general, the metals were considered to be due to minerals in the soil; arsenic and antimony concentrations were high, but not in filtered samples; VOCs and pesticides were not consistently found in the samples. MCP S-1 standards for arsenic and antimony in soil have not changed since 1999, therefore there are no changes needed to the assessment. A land use restriction is in place to limit exposure to arsenic that was applied as a herbicide (see Section 2.0).

3.3.5 Issues

None.

3.4 AOC P4 BUNKER DRUM AREA

AOC P4 is the former location of four upright 55-gallon drums, lashed together on a pallet.

3.4.1 Site Location and Description

AOC P4 is located in a wooded area in the central area of the Sudbury Training Annex, south of Honey Brook between Bunkers 347 and 349 (Weston 2001). One of the drums was marked "poison". A fifth drum was discovered closer to Bunker 349.

3.4.2 Site Chronology and Characterization History

The four drums were removed. The fifth drum was removed, staged at AOC P17, and transported off the annex.

As part of the initial (Phase I) Site Investigation (SI), in 1992, surface soil samples were taken from each location, and one surface water-sediment pair of samples was collected from a ditch that drains away from the drums' former locations. In the Phase II SI, soil samples were taken from four locations around the location of the previous sample that had been taken from the location of the four drums.

AOC P4 is included in the facility-wide arsenic investigation.

3.4.3 Technical Assessment

Public Health and Ecological preliminary risk evaluations were conducted. In one of the soil samples, five SVOCs were detected at maximum concentrations in excess of EPA risk-based concentrations, with average concentrations below the screening values. Arsenic was found in the surface soil, at concentrations consistent with the arsenic investigation described in Section 3. The following findings were reached:

- Exposure to average site concentrations in soil did not pose a substantial risk to human receptors.
- Human and ecological receptors potentially at exposed to arsenic contamination in SA P4 surface soils might be at risk
- Elevated arsenic concentrations in AOC P4 surface soils could be attributed to arsenic contamination associated with former railroads at the Annex.
- Vanadium in one surface soil sample did exceed an RBC, but the RBC was based on uncertain values of vanadium phytotoxicity, and the background soil concentration did not suggest a vanadium-induced adverse effect on plant life.

ABB recommended no further action, and recommended that the site be included in the facility-wide arsenic investigation. An NFADD was signed by the BCT in December 1999.

3.4.4 Protectiveness

Protectiveness is currently maintained at AOC P4. Although concentrations exceeded levels in surface soils that may be considered acceptable for residential development, the decision document stated that no adverse risk was associated with wildlife refuge or recreational land use, construction workers, or ecological receptors.

The MCP S-1 standards for arsenic and vanadium have not changed; therefore the site is protective of human health and the environment with the current suite of institutional controls (wildlife refuge use may not convert to residential use.)

AOC P4 is included in the facility-wide arsenic investigation discussed in Section 3.

3.4.5 Issues

None.

3.5 AOC P27 PYROTECHNICS TEST AREA

AOC P27 was used to test/destroy fireworks (pyrotechnics).

3.5.1 Site Location and Description

AOC P27 (Pyrotechnics Test Area) is located in the north-central part of the Sudbury Training Annex on the north side of Patrol Road and mostly north of the perimeter fence (Weston 2001). It is composed of two clear areas adjacent to a wetland located to the north.

3.5.2 Site Chronology and Characterization History

Soil samples in 1994 and 1995 found high concentrations of arsenic in the soil: most of 30 samples had

more than 100 mg/kg of arsenic, many had arsenic above 500 mg/kg, and one had arsenic at 1200 mg/kg. 3,693 cubic yards of soil and asbestos-containing material (ACM) were removed from AOC P27 prior in 1995. During the excavation, confirmatory sampling of soil was performed to verify that the arsenic concentrations were below a risk-based concentration of 250 mg/kg, as detailed in ABB 1996b.

3.5.3 Technical Assessment

A risk-based cleanup goal for arsenic in soil was set at 250 mg/kg (for laboratory confirmation) and 200 µg/g (for analysis by on-site x-ray fluorescence). Groundwater sampling was conducted in May 2001 for both total and dissolved arsenic, which was not detected (MEP Addendum, 2002). The AOC P27 cleanup achieved a residual arsenic concentration of less than 250 mg/kg, and all ACM was removed. A no further action decision document was signed in August 2000.

3.5.4 Protectiveness

The 250 mg/kg target concentration for arsenic in surface soil was intended to be protective of human health in the case of dirt-bikers' potentially inhaling soil particles. Since the toxicity value used to derive the cleanup goal has not changed, the site remains protective of human health and the environment. There is a provision in MOA 2002 that restricts residential development in sites (including AOC P27) that are within 50 feet of the perimeter fence or railroads. Such residential development would be allowed only after USFWS had demonstrated that the specific area slated for development satisfied residential protectiveness standards.

3.5.5 Issues

None.

3.6 AOC P28 Rocket Range

The AOC P28 rocket range is an area formerly used for rail activities, rocket testing, and recreational activities. An NFADD for AOC P28 was dated December 1999.

3.6.1 Site Location and Description

The site is located in the northern section of the southern part of the Annex (Weston 2001). The southern part of the Annex is just south of Hudson Road, which divides the Sudbury Training Annex into north and south sections. This location also is situated adjacent to a former residential housing area. The former range consists of an area about 3,600-ft long and 100-ft wide and an associated gravel roadway. This range area consists of a sandy-gravely relatively flat surface that is devoid of vegetation. The surrounding area contains tall grass, brush, and moderate forest.

3.6.2 Site Chronology and Characterization History

Herbicides at AOC P28 had been used along railway and to maintain line-of-sight. Elevated levels of arsenic warranted soil removal actions. 4,700 yd3 of soil was removed and placed at AOC A7. The excavation was backfilled with soils from AOC P22.

3.6.3 Technical Assessment

AOC P28 cleanup achieved arsenic levels of less than 111 mg/kg of arsenic, which was below the risk-based target of 250 mg/kg for dirt-bikers' exposure to dust.

3.6.4 Protectiveness

Conditions at AOC P28 remain protective during the review period since the toxicity values used to derive the cleanup goal for arsenic in soil have not changed. Further, AOC P28 is included in the facility-wide arsenic investigation discussed in Section 3. MO A 2002 includes a provision that within the 100-ft wide corridors (50 feet either side of the perimeter fenceline or former railroads, no residential development should occur until USFWS has demonstrated that the area to be developed would be adequately protective of human health in a residential habitation setting. AOC P28 falls into this area.

3.6.5 Issues

None.

3.7 AOC P31 Old Dump, and AOC P58 Sudbury Road Dump

AOC P31 was identified by the EPA in the Installation Assessment conducted for Natick Labs and the Sudbury Training Annex. The area was identified from infrared aerial photographs showing vegetation stress and a dark stain. It was originally discovered along with AOC P58, an exposed dump in a NE-to-SW oriented wetland area, since they are immediately contiguous areas, surrounded by forest. The final RI for AOC P31 was combined with that for nearby AOC P58. Because the two AOCs are best discussed in the context of one another, AOC P31 and AOC P58 are reviewed together in this section.

3.7.1 Site Locations and Descriptions

AOC P31 is the location of what may have been a dump. It is currently a portion of the state forest located approximately 800-ft northwest of Lake Boon (referred to as Boons Pond in one aerial photo), between Sudbury Road and White Pond Road, including an area east of White Pond Road (Weston 2001). Site access is either by means of White Pond Road that diverges north from Sudbury Road at power pole 120-1/2, or through a parking lot located on the western margin of the site adjacent to Sudbury Road. White Pond Road leads into the northern part of the AOC P31.

AOC P58 is located immediately north of AOC P31 and consists of an exposed dump in a northeast-southwest oriented wetland area, which is surrounded by forest. The wetland area is approximately 450 ft x 70 ft (Weston 2001). A culvert on the western end of the wetland carries water under Sudbury Road and drains into Lake Boon.

3.7.2 Site Chronology and Characterization History

AOC P31 and P58 were concurrently identified by the EPA in the Installation Assessment conducted for Natick Labs and the Sudbury Training Annex. The area comprising both AOCs was initially identified by an aerial photograph showing vegetation stress and a dark stain. Two empty crushed drums were removed from AOC P31, and no detected analytes were found at concentrations above risk screening values in 2001. Arsenic detected in surface soils at the sites was addressed in a facility-wide investigation of the issue. Although investigations included soil, wetland and stream sediments, surface water and groundwater, the focus ultimately shifted to arsenic in the groundwater. Remedial Investigation activities were completed at each of these Sites and a monitoring well network was established for both.

3.7.3 Technical Assessment

Based on the results of the Remedial Investigations that occurred at each of these two Sites, arsenic in

groundwater was considered the only potential risk to human health and the environment. In general, the reporting limit for arsenic was 10 µg/L, although in October 1999 and April 2000 in monitoring well E3-P58-M01 the limit was 50 µg/L. Beginning in spring 1999, both total and dissolved arsenic samples were taken in order to determine whether a portion of the arsenic was not dissolved in the groundwater, but rather carried on soil particles that could be filtered out of the flow, as would likely be the case if the groundwater were to be used as a water supply (BEC 2000). In support of the Site Investigation activities, followed by long term monitoring, the wells E3-P31-M01, JO-P58-M24, E3-P58-M01 and E3-P58-M02 were sampled in 1993, semiannually in 1997 and 1997, once in 1998, and semiannually in 1999 through May 2001.

The highest levels of arsenic in groundwater from either AOC were detected in a monitoring well assigned to AOC P58 with a well name assigned to P31 (E3-P31-M01). Dissolved arsenic was also consistently detected in other monitoring wells (see the AOC P58 Closeout Report, Administrative Record, document SU-00021-USAP; BEC 2000). At AOC P31, the arsenic concentration in E3-P31-M01 was 91 µg/L in the Fall of 1993, falling to 37 µg/L in the Spring of 1996, and rising to 71 µg/L in the Fall of 1996. The well was not sampled again until October 1999, when the total arsenic concentration was 83 µg/L. Filtered arsenic was typically less (by up to 25%) than total arsenic, although the filtered result exceeded the total result in October 1999. The total arsenic concentration was 25 µg/L in April 1999, rising to 78 µg/L in October 2000. Through the fall of 2000, the filtered arsenic concentration did not fall below 10 µg/L. In the May 2000 sampling event, however, the results showed that both total and dissolved arsenic were below 10 µg/L, with sample results 5.4B µg/L and 4.3B µg/L where "B" qualifies the result as an estimated value. Arsenic in groundwater in May 2001 was steady and below the 50 µg/L MCL and MCP GW-1 standard (Mass DEP 1995).

At AOC P58, concentrations in JO-P58-M24 were 21 µg/L in Spring 1999, rising to a maximum of 32 µg/L in October 1999 and diminishing to 27 µg/L in May 2001. Both were below the MCP GW-1 prevailing standard of 50 µg/L. Filtered arsenic concentrations at this time were similar to total arsenic concentrations.

In JO-P58-M02, concentrations were 16, 17, and 18 µg/L in Fall 1993, Spring 1996, and Fall 1996. The well was not sampled again until October 1999, when the total arsenic concentrations had increased to 29 µg/L. The well was sampled semi-annually from October 1999 to May 2001, and the total arsenic concentration decreased to 18 µg/L. Filtered arsenic concentrations were usually less than the total arsenic concentration, but filtered arsenic was never less than 10 µg/L. In E3-P58-M01, the arsenic concentration was 41 µg/L in 1993, but subsequent results did not exceed 5 µg/L. These arsenic concentrations remained consistently below 10 µg/L since the Spring of 1996. In October 2000 and May 2001, the results were non-detect, with a reporting limit of 10 µg/L.

Nearby homes with active drinking water supply wells were tested by USACHPPM in 1994. No organic chemicals were detected, and metals were reportedly below standards for drinking water (USACHPPM 1995). The USACHPPM 1995 report indicated that the residential drinking water wells were located cross-gradient and not downgradient to the groundwater flowing from the AOCs towards the pond.

The Study Area P-58 Close Out Report (BEC 2000) indicated that the arsenic in the groundwater was persistently above 50 µg/L in well E3-P31-M01. There had been no exceedances of 50 µg/L in wells installed in 1999. The high arsenic concentrations were purported to reflect reducing, acidic wetland/ dump water seeping into the underlying formation and dissolving natural arsenic in the geologic formation. This was considered to be a localized phenomenon because adjacent wells had not exceeded the 50 µg/L MCL for arsenic, and, furthermore, the wells immediately downgradient had not (with only one anomalous exception) exceeded the 50 µg/L standard.

The monitoring wells were to be sampled semi-annually through the Spring of 2001, at which time a decision would be made concerning whether to continue to sample the wells (BEC 2000). AOC P58 was removed from consideration under CERCLA at that time. Comparing patterns of ice formation in Boon Pond and the inferred hydraulic gradient of 0.002 ft/ft between wells E3-P58-M01 and E3-P58-M02 in 1993, it was concluded that groundwater from the site did not discharge into the downstream end of the pond. The Army, the EPA and MassDEP agreed that high arsenic in E3-P31-M01 appeared as a "single hit from a group of samples".

The 2000-2001 data in Table F-3 were subsequently compiled. The 2001 Five-Year Review recommended no further groundwater sampling at AOC 31 and AOC 58. In May 2001, the arsenic concentrations were reported as having been consistently below the then-current EPA drinking water standard of 50 µg/L, and it was agreed that further sampling was not required. These monitoring wells were abandoned by USACHPPM in June 2002 (USACE 2003).

3.7.4 Protectiveness

With regard to soils, AOC P58 was included in land that now is ceded to USFWS, and AOC P31 is now part of the state forest. The USFWS land is subject to a September 2000 Memorandum of Agreement that places a variety of restrictions on the land transferred to the USFWS (See Section 2.3.1). Sections of the former annex that are within 50 feet of the perimeter fence line may not be developed for residential habitation unless it can be demonstrated to EPA that the land is protective of human health and the environment.

In 2005 USFWS opened their sections of the former Annex to the public as a National Wildlife Refuge, and hunting was permitted in the fall of 2005. Although it is unlikely that land use will change significantly at the state forest, that parcel does not appear to be subject to the noted agreement (see Appendix D). Although the state forest may be subject to appropriate land use restrictions, additional clarification should be developed during the upcoming review period to determine their protectiveness with regard to AOC P31.

A protectiveness determination for the groundwater at AOCs P31 and P58 cannot be completed at this time until further information is obtained.

3.7.5 Issues

The Closeout Report for AOC P58 issued in February 2000 states that any exceedances of the MCL in the groundwater in monitoring wells E3-P58-M01, E3-P58-M02, and JO-P58-M24 during the review period 1996-2001 would be cause for continued semi-annual monitoring during the subsequent review period 2001-2006. Because such exceedances did not occur, the monitoring wells were decommissioned in June 2002. The monitoring wells at AOC P31 (Old Dump) and AOCs P58 (Sudbury Road Dump) were included in the previous Five-Year Review because of arsenic in the groundwater (Weston 2001). During this time, the MCL for arsenic in groundwater was revised downward to 10 µg/L; the revised EPA standard was promulgated February 22, 2002. Upon review it is unclear whether arsenic in the groundwater exceeds the recently revised EPA MCL and MCP GW-1 standard for arsenic in drinking water (CFR 2001; Mass DEP 2003). The concentrations in several monitoring wells were between 10 µg/L and 50 µg/L in 2001. Given variable arsenic concentrations, it is not clear whether arsenic concentrations in groundwater are currently below 10 µg/L.

It should be noted that both areas are expected to remain as wildlife refuge land (BEC 2000; MOA 2000), and no evidence was found during this review of planned development of the local groundwater resource.

However, residential neighborhoods do exist nearby with private water supply wells. Based on the findings from the USACHPPM 1995 report, these residential wells were apparently not in the direct path of groundwater flow from the AOCs (BEC 2000). The groundwater flow from AOC P58 was determined to move towards the pond, and not through P31 or toward household drinking water wells, so there was no apparent risk of contaminated groundwater reaching a domestic groundwater supply (USACHPPM 1995). The current number and location(s) of residential drinking water supply well(s) were not investigated as part of the 2006 Five Year Review.

Existing sample results are presented in this report in Table F-3, with comparison to the recently revised (more stringent) EPA standard of 10 µg/L. It is apparent that concentrations of arsenic in the groundwater may currently exist at a level that exceeds the revised health-based standard. It is noted that the flow conditions are unlikely to have changed appreciably, and that dumping has diminished or ceased and so it is likely that conditions in the groundwater are not degrading.

Issues associated with AOC P31 and AOC P58 are listed in Tables F-l and F-2.

4.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

The following are recommendations that should be accomplished during the next five year review period. These recommendations arise from the summary of AOCs P58 and P31 only. According to the closeout document signed by EPA, there are no remedies in place requiring five-year review at any of the 73 original AOCs except for AOC A7 (Weston 2001) and areas related to the site-wide arsenic investigation (i.e., statutory reviews). Site summaries for all of the sites were provided in Table 1 of the main report. This appendix provides the reader with additional information regarding a few sites where further detail was needed to convey a more complete description of the site contamination and cleanup histories. For the combined AOCs P31 and P58, two issues arose from the additional reviews.

4.1 Issue 1

Although there are no remedies in place for AOCs P58 and P31 and the monitoring wells were decommissioned, the concentrations of arsenic in groundwater until 2001 historically exceeded the EPA drinking water standard that was promulgated in 2002, decreasing the standard from 50 µg/L to 10 µg/L. It is therefore necessary to evaluate previous data from P58 and P31 monitoring wells and site-wide background data to determine if the site is protective of human health and the environment, given the revised Massachusetts GW-1 arsenic standard and the information available in the arsenic background study and site-specific studies.

4.2 Issue 2

AOC P58 is now owned by the USFWS. The land is subject to institutional controls that restrict land use and prevent the use of groundwater for drinking water. However, because the adjacent AOC P31 is state forest outside the boundary of property transferred to USFWS in MOA 2000, it is unclear whether portions of AOC P31 are subject to the same or similar land use restrictions as the USFWS property. There is therefore a need to establish whether restrictions were placed on State deed for the park adjacent to AOC P58 and to place a land use restriction if needed.

4.3 Recommendations

There is a need to evaluate the previous data from monitoring wells at AOCs P58 and P31, and from site-wide background data, to determine if the site is protective of human health and the environment,

given the revised Massachusetts GW-1 arsenic standard and the information available in the arsenic background study and site-specific studies. It should be determined whether AOC P31, as a portion of the state forest that is not under the control of the USFWS, is protected by appropriate institutional controls, and place land use restrictions in place if needed.

5.0 REFERENCES

The references in this appendix of the 2006 Sudbury Training Annex Five-Year Review are as compiled for the main report.

Tables for Appendix F

Table F-1: AOC P58/P31 Issues

Issues	Affects Protectiveness (Y/N)	
	Current	Future
The remedy at AOC P31/P58 currently protects human health and the environment because previous studies previous studies have determined that arsenic is not migrating offsite in the groundwater. Although there are no remedies in place for AOCs P58 and P31 and the monitoring wells were decommissioned, the concentrations of arsenic in groundwater until 2001 historically exceeded the EPA drinking water standard that was promulgated in 2002, decreasing the standard from 50 µg/L to 10 µg/L. In order to evaluate the protectiveness of the remedy in the long term, it is necessary to evaluate the previous data from these locations to determine the likely impact to human health and the environment of arsenic data.	N	Y
AOC P58 is now owned by the USFWS. The land is subject to institutional controls that restrict land use and prevent the use of groundwater for drinking water. However, because the adjacent AOC P31 is state forest outside the boundary of property transferred to USFWS in MOA 2000, it is unclear whether portions of AOC P31 are subject to the same or similar land use restrictions as the USFWS property. The restrictions on residential development may not apply, and any such residential development might expose both developers and the intended new community to site contaminants.	N	Y

Table F-2 – AOC P58/P31 Recommendations and Follow-up Actions

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
Evaluate previous data from P58 and P31 monitoring wells with respect to Annex-wide background data, historical arsenic sampling of groundwater, current arsenic drinking water standards, and risk of migration of contaminants from the site.	Army	EPA & State	May 2007	N	Y
Determine if restrictions were placed on State deed for park adjacent to P58 and place land use restriction on AOC P31 if needed.	Army	EPA & State	May 2007	N	Y

Table F-3
Arsenic in Groundwater at AOCs P31 and P58

	PARAMETERS	MCP GW-1 Standard updated January 2006	Well ID				
Date	**TAL METALS (6010)**		**JO-P58-M24**	**JO-P58-M24Dup**	**E3-P58-M02**	**E3-P58-M01**	**E3-P31-M01**
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Fall 1993	Arsenic (Total)	10	Installed Spring 1999	Installed Spring 1999	**16**	**41**	**91**
Spring 1996	Arsenic (Total)	10	"	"	**17**	3	**37**
Fall 1996	Arsenic (Total)	10	"	"	**18**	3	**71**
Fall 1997	Arsenic (Total)	10	"	"	Not Sampled	Not Sampled	Not Sampled
Spring 1998	Arsenic (Total)	10	"	"	Not Sampled	Not Sampled	Not Sampled
Spring 1999	Arsenic (Total)	10	**21**	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	Arsenic (Dissolved)	10	**21**	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Fall 1999	Arsenic (Total)	10	**32**	**32**	**29**	4.6 J	**83**
	Arsenic (Dissolved)	10	**31**	**29**	**22**	<50	**87**
Spring 1999	Arsenic (Total)	10	**31**	**30**	**26**	4.6 J	**25**
	Arsenic (Dissolved)	10	**30**	**29**	**12**	<50	**19**
Fall 2000	Arsenic (Total)	10	**28**	**25**	**17**	<10	**78**
	Arsenic (Dissolved)	10	**28**	**28**	**18**	<10	**74**
Spring 2001	Arsenic (Total)	10	**27**	Not Sampled	**18**	<10	5.4 B
	Arsenic (Dissolved)	10	**27**	Not Sampled	**15**	<10	4.3 B

Shaded Cells indicate concentrations that exceed the current (2006) arsenic GW-1 standard

TAL Metals (6010) Target Analyte List Metals Analysis by EPA method 6010

B = Analyte is also present in equipment blank sample at a reportable level.

APPENDIX G

COMMENT RESPONSE PACKAGE

USACE Draft Responses to
EPA and Massachusetts DEP
Comments on
Second Five Year Review, dated August 2006, at the Former US Army Sudbury Training Annex, Middlesex County, MA

Responses to EPA Comments

Responses to the EPA comments are in italics following the comments listed below.

Pursuant to ' 7.6 of the Ft-Devens-Sudbury Training Annex Federal Facility Agreement, dated May 13, 1991, the Environmental Protection Agency reviewed the subject document. Comments are below:

1. General comment: It is stated in several places that the site is protective of human health and the environment so long as it is operated as part of a wildlife refuge, even though concentrations of groundwater contaminants may exceed risk-based levels or MCLs. The USFWS has now opened up part of the refuge to hiking and hunting, and there are kiosks at the entry. This conclusion seems reasonable provided that prior to on-site public drinking water-groundwater use the Army should test the water at the proposed location for all site related contaminants. The Army should ensure in its periodic inspections that drinking water from onsite wells is not supplied to any facility in the refuge until such time an evaluation is made. The USFWS should not install any wells in the refuge without first coordinating with the Army, EPA, and MassDEP.

   Acknowledged. USACE contacted USFWS September 7, 2006 to check on their new construction plans. The kiosks have not included plumbing. UXO clearance work for excavations for trenches for town water at the visitors' center have been made with accompanying UXO clearance personnel; the site will have four deep wells for geothermal temperature control (none to be used for drinking water). The site has been cleared for UXO (none was found). Percolation tests were conducted in 2006 to MassDEP requirements for a septic system. USFWS has been in contact with the Army and MassDEP concerning this construction.

2. I have enclosed the change pages with stylistic comments. In these stylistic comments, I've suggested using "EPA" in place of "USEPA," but am really just looking for consistency. Army uses both terms and should just settle on one.

   The change to "EPA" is accepted. The glossary section at the front will include both names, since some of the text has "EPA" as part of extended quotations, which should not be changed. Other changes such as capital letters for the seasons Spring and Fall have been made, as well as minor wording changes.

3. Army should include a table which identifies the ARARs that were identified in the ROD. Army doesn't need to perform the analysis as to which ARARs/TBCs have changed in the tables - what is in the text is sufficient - but in order to set

forth a coherent analysis, the reader needs to know what those original ARARs were.

Acknowledged. The table will be added.

4. Please include the enclosed Summary Table, Issues and Recommendation Tables, and Protectiveness Statement Table. EPA understands the Army may need to change the dates on the recommendations; however, all recommendations need deadlines.

   Acknowledged. The tables are included as Tables ES-1 through ES-4.

5. Page 1-4, ¶2; EPA Guidance Document *Comprehensive Five-Year Review Guidance*, June 2001, p 1-5,§1.4.1, states that "...as a matter of policy, a site is subject to a statutory review if any one of its initiated remedial actions is subject to a statutory review." There are no "informational reviews" noted in the guidance. One option is to put the reviews with no issues into a separate appendix with the title, "areas of concern reviewed" and the reviews where Army has noted issues, into another appendix with the title, "areas of concern with issues". Sections 1, 2 and 4 should make up the body of the FYR and the discussion and assessments made in these sections should be used to develop issues/recommendations and a protectiveness statement. Since the other OUS (2,3,4,5) and the residual arsenic soils contamination are being discussed in the FYR but NOT required (no action RODs), please remove the Policy FYR and Informational FYR headings from these sections and attach the contents in appendices. Table 1 will also need to updated with just a review noted, not a specific type of review.

   Accepted. Changes have been made to create a separate appendix outlining the extended summaries for Sections covering the arsenic study and the non-statutory AOC summaries. September 8 2006.

6. Page 2-5, ¶4, and other similar statements in text and tables; RODs were not signed by the BCT. RODs are signed by Army and EPA. MassDEP concurred with all of the RODS. There were 4 RODs: the Source Control ROD for OUs 1&2- (A7&A9) signed in 1995, OUs 4&5 (P11, P13, A12, P36, and P37) ROD signed in 1996, the Management of Migration for OU1 (A7) and the OU3 (A4) RODs signed in 1997. Please make appropriate changes in the text and tables.

   Acknowledged.

7. Page 2-5, ¶4, and other similar statements; NFADDs were signed off by the BCT. NFADDs were signed for all other study areas and areas of concern that did not have a ROD.

   Acknowledged. The Army will make corrections consistent with response to

Comment 6.

8. Page 4-16,§ 4.4 Remedy Selection, ¶2; typo, error: cap components are described in Section 4.5 Remedial Actions (not Section 3.5).

   Accepted.

9. Page 4-19, ¶5; please describe the final disposition of the oil found in April 2006 by the landfill.

   The container was a spent container at the time of its discovery. This will be made clear in the text.

10. Page 4-22, ¶2; please reconcile the differences between sentences 3 & 4. Was the highest value (24 ppb) of arsenic found in 2001 or in 2002?

    Text will be corrected. The peak value of 24 ppb will be referenced, and the prior peak will be disregarded, in the text.

11. Page 4-24, §4.10.05 Site Inspections and Confirmation of Institutional Controls; add that Army, EPA, and MassDEP performed a site inspection on August 25, 2006.

    The addition will be made in the new section 3.10.5 and in the new Table ES-1.

12. Page 4-24, ¶1; please indicate what the Army plans to do about the problems with the monitoring wells.

    As discussed with EPA on September 8, 2006, the well repairs and installation of the new proposed background well is to be discussed at the 9/8/06 meeting.

13. Page 4-24, ¶2; since the replicated vernal pool has not yet been inspected in 2006, please add this as an issue and make the recommendation to inspect the pool in spring of 2007.

    The 2006 inspection was performed earlier in 2006. A report will be generated separately. This is indicated in the new Tables ES-2 and ES-3 and in revised wording of the section, which is now in 3.10.5.

14. Section 4.11 page 4-26: The second paragraph on page 4-26 states that there have been no changes in standards, regulations and other factors such as toxicity factors. In order for EPA to evaluate this statement for accuracy, please provide a table that identifies the groundwater Chemicals of Concern for AOC A7 and their risk assessment toxicity factors (and MCLs) as of signing of the ROD and the 1st Five Year Review.

Acknowledged. A table will be provided. The chemicals of potential concern were listed in the MOM ROD for three media:

- **in soil:** *DDT, dieldrin, endrin, and chlordane, PCBs, benzo(a)anthracene, benzo(a)pyrene, phenanthrene, and lead*
- **in sediment:** *arsenic, barium, copper, and nickel*
- **in groundwater:** *DDT, lindane, heptachlor epoxide, tetrachloroethene, 1,1,2,2-tetrachloroethane, and trichloroethene.*

Regarding the soil listing, the ROD accepted the finding of the SI/RI addendum report that chemicals in the soil do not pose a substantial risk to terrestrial receptors.

Regarding the sediment listing, it was noted that conditions in the site's stream were determined to be typical of what would be expected in the absence of contamination, and therefore it was concluded that the site conditions were not adversely affecting stream organisms.

Regarding the groundwater listing, potential risks to aquatic ecosystem were compared to Ambient Water Quality Criteria, taking into account dilution and sediment binding effects at the point where groundwater enters the Assabet. Chemicals in groundwater were concluded to have an insignificant effect on aquatic life.

15. Page 4-27, §4.14, Protectiveness; add to the second line that the remedy is protective also because of the implementation of the ICs and that they are functioning to ensure continued protectiveness of the remedy. Please also use a standard language phase such as; "The remedy at OU1 (A7) is protective of human health and the environment."

    Accepted.

16. Page 5-29, §5.2.1, Site Location and Description; please indicate that this area of concern was subject to a record of decision for no further action (NFA ROD) signed by the Army and EPA and concurred with by MassDEP in 1997.

    Accepted.

17. Section 5.3.3, page 5-30: The first and third paragraphs mention established background levels for the Sudbury Annex of 110 mg/kg for lead in soil and 17 mg/kg for arsenic in soil. Please provide a reference in which these background levels are derived and indicate whether these background levels have been approved by EPA.

    The section summarizes portions of the ABB 1997 report. The background concentrations for chemicals are included in Tables associated with sections 2

and 3 of the Area P1 portion of the report.

Background concentrations were developed in 1996: they were reported in Appendix F of ABB 1996b (October 25, 1996). This reference is the Final Supplemental Site Investigation Report, U.S. Army Sudbury Training Annex, Study Areas A3, A5, A10, A11, P5, P6, P9, P16, P23, P27, P28, P38, P41, P45, and P54.

It includes a signature page signed by the BCT and dated December 21 1999.

18. Page 5-31, §5.3.3: The second paragraph on page 5-31 states "It was determined that exposure to undissolved inorganics would be unlikely in a drinking water supply well." This statement was used as justification to minimize the risk of elevated concentrations of aluminum, manganese, beryllium and antimony, vanadium and chromium. Although a no further action decision document was signed by the BCT in 1999, it is EPA policy to evaluate the risk of drinking water by comparing it to the total concentrations of metals in monitoring wells, not only the dissolved concentrations. This policy was created because it is possible that private drinking water wells contain undissolved particles. Therefore, this argument should not be used in future decision-making.

    Acknowledged. This rationale will not be used in future.

19. Page 5-33, §5.5: Please describe whether perchlorate was measured in groundwater at AOC P27. The possibility of perchlorate contamination should be mentioned because it has occurred in other areas where fireworks have been used. The MOA indicates that residential development would be allowed only after USFWS had demonstrated that the specific area slated for development satisfied residential protectiveness standards. Therefore, if perchlorate has not been measured in groundwater, USFWS should do so as part of any such demonstration.

    There is no known record of testing for perchlorate in groundwater at AOC P27. Although the potential is remote, the possibility exists that groundwater may have been affected by former use of fireworks at the site. Any future changes in land use by USFWS should take this into account.

20. Section 5.6, page 5-34: Please describe whether perchlorate was measured in groundwater at AOC P28. The possibility of perchlorate contamination should be mentioned because it has occurred in other areas where rocket testing has occurred. The MOA indicates that residential development would be allowed only after USFWS had demonstrated that the specific area slated for development satisfied residential protectiveness standards. Therefore, if perchlorate has not been measured in groundwater, USFWS should do so as part of any such demonstration. Also, please describe whether a no further action decision

document has been signed for AOC P28

There is no known record of testing for perchlorate in groundwater at AOC P28. The possibility exists that groundwater may have been affected by former rocket testing at the site. Any future changes in land use by USFWS should take this into account.

The text has been changed at the end of Section 5.6.2 (now Section 3.6.2 of Appendix F) to include "An NFADD for AOC P28 was dated December 1999."

21. Page 6-39, §6.1 AOC A7, ¶2, Surface water Staff gages: It is unclear where the staff gages are installed and how the measurement of surface water staff gages is able to enhance understanding of groundwater gradients. Please explain the rationale for installing the surface staff gages.

A total of two surface water staff gauges are proposed to be included in the semiannual water level measurement rounds. One currently existing gauge is located within the unnamed tributary less than 100 feet east of the toe of the landfill perimeter. The second gauge is to be established on or near the shore of the Assabet River at a location to be determined based on field conditions due north of the landfill. The measurement of the surface water elevations at the same time as groundwater elevations at the monitoring wells closest to these gauge locations will allow a more clear understanding of seasonal variations in groundwater gradients and the relationship between groundwater and surface water, for example whether the groundwater discharges to the surface water or vice versa. Without the surface water elevation measurements, groundwater elevation contours cannot with confidence be connected to the surface water bodies. This rationale is now included at the end of Section 3.10.4 of the revised report, with a reference to the new Figure 5 which has been added.

22. Page 6-40, §6.3, Next Five Year Review; please add soils to the first sentence. Specific recommendations and deadliness should be made for all recommendations.

Accepted. Text will be revised. Tables ES-3 and ES-4 summarize recommendations and deadlines.

23. Table 1; please explain the acronym NC. Please explain what is meant by the phrases "No. No land use restrictions" and "No. NC. No land use restrictions" in the last column and how they differ from the phrase, "No. MOA requires that USFWS inform USEPA of any change from recreational and wildlife refuge land use."

Acknowledged. The table will be clarified and revised.

Responses to MassDEP comments

MassDEP prepared comments on August 28, 2006. Their comments are listed below, with responses in italics following the three numbered comments.

MassDEP concurred with the recommendations listed in the conclusions section of the report (series of bullets), but raised the following points in a "Specific Comments" section. USACE responses are listed in italics following the comments.

1. MassDEP recommended that the Long Term Monitoring and Maintenance Plan include a contingency for additional monitoring well installations should contaminants be observed in the planned upgradient background well.

   USACE intends to continue to evaluate the well network to ensure that the AOC A7 site continues to be monitored effectively. The revised LTMMP will allow for the installation of new wells as necessary.

2. MassDEP recommended that the five monitoring wells in degraded condition that were identified as damaged or possibly insilted (OHM-A7-12, JO-A07-M61, JO-A07-M62, JO-A07-M63 and OHM-A7-10) be redeveloped to restore well integrity and efficiency.

   The well redevelopment and repairs are to be performed in the fall of 2006. A report will be generated in the spring of 2007.

3. MassDEP recommended that the frequency of mowing at the AOC A7 landfill be increased from annually to semi-annually to discourage the proliferation of rapid-growth saplings and to preserve the integrity of the landfill cap materials, which might otherwise be compromised by tree root growth.

   USACE will continue to monitor the landfill. In absence of any rapid-growth saplings, the mowing will continue to be performed on an annual basis. The mowing frequency will be reviewed as part of the semi-annual geotechnical inspections. The requirement to review the mowing frequency will be included in revisions to the revised LTMMP.