

GUIDANCE ON IMPLEMENTING ACTIVITY AND USE LIMITATIONS

Interim Final Policy #WSC 99-300

May 1999

This document is intended to guide parties conducting cleanups, Licensed Site Professionals (LSPs), attorneys, DEP staff, and others in the appropriate implementation of Activity and Use Limitations (AULs) as part of response actions conducted at disposal sites pursuant to M.G.L chapter 21E and 310 CMR 40.0000, the Massachusetts Contingency Plan (MCP).

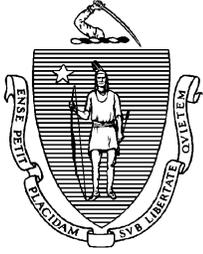
This document is intended solely as guidance. It does not create any substantive or procedural rights, and is not enforceable by any party in any administrative proceeding with the Commonwealth. The regulations related to AULs contain both specific and general requirements. This document summarizes these requirements and provides guidance on approaches the Department considers acceptable for meeting the general requirements set forth in the MCP. Parties using this guidance should be aware that there may be other acceptable alternatives for achieving compliance with general regulatory requirements.

Regulatory citations in this document should not be relied upon as a complete list of the regulatory requirements related to AULs. Parties implementing AULs should consult 310 CMR 40.0000.

{Signature on Original}

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Date



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May 18, 1999

Dear Interested Parties:

“Activity and Use Limitations” (AULs) are important features of the Massachusetts Waste Site Cleanup Program established by MGL c. 21E and the Massachusetts Contingency Plan (310 CMR 40.0000). They establish limits and conditions on the future use of contaminated property, and therefore allow cleanups to be tailored to these uses. To work properly, an AUL must provide critical information about the risks remaining at the site for people who will control and use the property in the future.

To assist in developing and implementing AULs that meet the Department’s requirements and current real estate standards, DEP is pleased to provide you with its *Guidance on Implementing Activity and Use Limitations*. This document, which was developed with input from the Waste Site Cleanup Advisory Committee, supplements DEP’s presentations in a series of training sessions conducted in June 1998 on “Understanding and Using Activity and Use Limitations”, which were co-sponsored by the Licensed Site Professionals Association.

This *Guidance* clarifies DEP’s requirements for AULs. It discusses important connections between the characterization of risks from contamination at sites and these legal documents. It also outlines legal requirements for creating and recording these documents so that they are legally effective and will not unnecessarily adversely affect property titles.

Recent “Brownfields” legislation (Chapter 206 of the Acts of 1998) has reaffirmed the importance of implementing adequate AULs. This law requires DEP to conduct targeted audits of all sites with AULs, and to ensure that AULs conform to standards for similar real estate instruments. We hope that this *Guidance* will help people to develop better AULs and to understand what DEP’s auditors will be looking for when they review these documents.

We expect that the audits required by the Brownfields Law will identify additional issues that the guidance should address. In addition, we are now developing proposals for revising the MCP sections that govern AULs, to comply with the Brownfields Law mandate to ensure that these instruments conform to current real estate standards. We expect to issue final rules in August 1999. We are planning to review this document in 2000, and update it as necessary at that time.

Sincerely,

{Signature on Original}
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This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

TABLE OF CONTENTS

SECTION 1: INTRODUCTION

| | |
|---|---|
| 1.1 Background | 1 |
| 1.2 Guidance Applicability | 1 |
| 1.3 Purposes of Activity and Use Limitations | 2 |
| 1.4 AULs and the Response Action Process | 2 |
| 1.5 Use of Deed Notices or Restrictions Which are not AULs..... | 3 |
| 1.6 The Brownfields Act | 4 |

SECTION 2: AULs and RISK CHARACTERIZATION

| | |
|--|----|
| 2.1 Introduction..... | 5 |
| 2.2 Risk Characterization Methods | 5 |
| 2.3 Current and Foreseeable Use | 6 |
| 2.3.1 Current Use | 6 |
| 2.3.2 Reasonably Foreseeable Use | 7 |
| 2.4 AULs and Specific Site Activities..... | 7 |
| 2.4.1 Easements..... | 7 |
| 2.4.2 Health and Safety and Soil Management Plans..... | 8 |
| 2.5 Summary of When AULs Are/Are Not Required..... | 9 |
| 2.5.1 When AULs Are Required..... | 9 |
| 2.5.2 When AULs Are Not Required..... | 9 |
| 2.5.3 Prohibited Uses of AULs..... | 10 |
| 2.6 AULs and Groundwater..... | 10 |
| 2.7 AULs and the Risk Characterization Methods..... | 11 |
| 2.7.1 Method 1..... | 11 |
| 2.7.2 Method 2..... | 13 |
| 2.7.3 Method 3..... | 15 |
| 2.8 Risk of Harm to Safety, Public Welfare and the Environment | 16 |
| 2.9 Changes in Uses and Activities..... | 16 |
| 2.10 Language of the AUL..... | 16 |

SECTION 3: AUL TYPES AND ELEMENTS

| | |
|--|----|
| 3.1 Authority for Establishing AULs..... | 18 |
| 3.2 Types of AULs..... | 18 |
| 3.3 Voluntary AULs | 18 |
| 3.4 Grant of Environmental Restriction | 20 |
| 3.4.1 Types of Grants of Environmental Restriction | 20 |
| 3.4.2 Elements of a Grant of Environmental Restriction..... | 20 |
| 3.5 Notice of Activity and Use Limitation..... | 23 |
| 3.5.1 Elements of a Notice of Activity and Use Limitation..... | 23 |
| 3.6 Rationale for the AUL Requirements..... | 24 |

SECTION 4: PREPARING AN AUL

| | |
|---|----|
| 4.1 The Difference between Registered and Unregistered Land..... | 25 |
| 4.2 Describing the Area Covered by the AUL..... | 26 |
| 4.3 Describing the Land Covered by the AUL..... | 27 |
| 4.3.1 Survey of Parcel Containing Area Subject to the AUL..... | 27 |
| 4.3.2 Survey of Area Subject to the AUL..... | 27 |
| 4.3.3 Sketch Plan of Area Subject to AUL in Relation to Boundaries..... | 28 |
| 4.3.4 Summary of Legal Descriptions and Plan Requirements..... | 28 |

TABLE OF CONTENTS, continued

| | |
|--|-----|
| 4.4 Description of Prohibited /Inconsistent Activities and Uses..... | 28 |
| 4.5 Description of Permitted Uses and Activities..... | 28 |
| 4.6 Description of Obligations and Conditions..... | 30 |
| 4.7 AUL Opinion..... | 30 |
| 4.8 Deleting or Changing Language of AUL Forms..... | 31 |
| 4.9 Adding Language to AUL Forms..... | 31 |
| 4.10 AUL Transmittal Forms..... | 31 |
| 4.11 Requirement for a Certified Registry Copy of the AUL..... | 31 |
| 4.12 Necessary Signatories for Property Owner..... | 31 |
| 4.13 Subordination Agreements..... | 32 |
| | |
| SECTION 5: AUL RECORDING and PROCESSING REQUIREMENTS | |
| | |
| 5.1 DEP Review of a Grant or Private Well Grant..... | 34 |
| 5.1.1 Grant Application Requirements..... | 34 |
| 5.1.2 DEP's Review Process..... | 34 |
| 5.2 Grant Fee Requirements..... | 36 |
| 5.3 Recording and/or Registration Requirements for All AULs..... | 36 |
| 5.4 Public Notice Requirements..... | 37 |
| | |
| SECTION 6: AFTER AN AUL HAS BEEN FILED | |
| | |
| 6.1 Changes in Land Uses, Activities or Other Conditions after an AUL has been Implemented..... | 38 |
| 6.1.1 If the Contemplated Change in Activities or Uses Involves Response Actions..... | 39 |
| 6.1.2 If the Contemplated Change in Activities or Uses Does Not Involve Response Actions..... | 39 |
| 6.2 Correcting Errors in an Implemented AUL..... | 40 |
| 6.2.1 Non-Substantive Errors..... | 40 |
| 6.2.2 Substantive Errors..... | 40 |
| 6.3 Amendments..... | 41 |
| 6.4 Releasing or Terminating AULs..... | 40 |
| 6.5 Incorporation of AUL into Deeds, Leases and Other Instruments of Transfer..... | 42 |
| 6.6 Maintenance Contracts and Property Managers..... | 42 |
| 6.7 DEP Audits of Disposal Sites with AULs..... | 43 |
| | |
| SECTION 7: HYPOTHETICAL AUL CASE STUDIES | |
| | |
| CASE STUDY 1: Soil Contamination at Depth, Unpaved | 44 |
| CASE STUDY 2: Soil Contamination beneath Existing Pavement | 49 |
| CASE STUDY 3: Soil Covered by an Impermeable Cap..... | 52 |
| CASE STUDY 4: Soil Contamination beneath a Building | 54 |
| CASE STUDY 5: Residential Site with a Private Well | 56 |
| CASE STUDY 6: Site with Current GW-2 Classification (Building Currently On-Site)..... | 58 |
| CASE STUDY 7: Site with Active Groundwater Treatment System..... | 61 |
| CASE STUDY 8: Future Building Construction Scenario..... | 62 |
| | |
| SECTION 8: INAPPROPRIATE AUL LANGUAGE | |
| | |
| APPENDICES | |
| | |
| A. Table of Requirements for AUL Submittals..... | A-1 |
| B. AUL Implementation Flow Chart..... | B-1 |

TABLE OF CONTENTS, continued

| | |
|--|-----|
| C. Step By Step through Form 1075..... | C-1 |
| D. Sample Title Certification..... | D-1 |
| E. Legal Notice of an Activity and Use Limitation..... | E-1 |
| F. Requirements for Survey Plans..... | F-1 |
| G. List of AUL-Related Forms..... | G-1 |
| H. Activity and Use Limitation Checklist..... | H-1 |
| I. Statement of Termination, Fact Sheet and Form..... | I-1 |
| J. Sample Notice of Activity and Use Limitation..... | J-1 |

SECTION 1: INTRODUCTION

1.1 Background

In undertaking the redesign of the Waste Site Cleanup Program, the Massachusetts Department of Environmental Protection (DEP) sought to provide for greater flexibility in cleanups. A primary objective was to allow for a level of cleanup that reflected the potential for exposure to oil and/or hazardous material at and in the vicinity of a specific site. This potential is defined by the uses and activities occurring at and near a site and the nature and accessibility of the contamination. In this regard, the MCP, 310 CMR 40.0000, provides three different approaches for characterizing risks posed by a disposal site and determining the necessary level of cleanup. Method 1 provides numeric soil and groundwater cleanup standards that DEP has developed for approximately 100 of the most common contaminants found at sites. Method 2 allows for some modification of the Method 1 standards, based on site-specific conditions; and Method 3 provides for assessment of the cumulative risks posed by a disposal site.

All of these methods involve assumptions about exposures to oil and/or hazardous material at the site and use the “No Significant Risk of Harm” standard for determining the amount of cleanup required to address human health, safety, public welfare and environmental concerns. Exposures are determined from the conditions at and surrounding the disposal site, including the current *and future* uses of the properties and underlying groundwater.

M.G.L. c.21E, section 3A(g) requires that sites be cleaned up permanently to protect health, safety, public welfare and the environment for **any foreseeable period of time**. We know from experience that land uses can and do change over time, often in ways we cannot predict. We also know that in some instances, contamination will remain even after a cleanup that meets the MCP standards is completed. To ensure that cleanups remain protective over time and through changes of land use, the flexibility provided by the MCP standards is accompanied by appropriate checks and balances on the assumptions used in the risk characterization to ensure that a condition of No Significant Risk will be maintained in the future.

One of the checks and balances required by the MCP takes the form of an **Activity and Use Limitation** or **AUL**. An AUL is a legal document that identifies site conditions that are the basis for maintaining a condition of No Significant Risk¹ at a property where contamination remains after a cleanup.

1.2 Guidance Applicability

This guidance applies to disposal sites for which the implementation of an AUL is required pursuant to 310 CMR 40.0900 and 40.1000.

This document is intended for Licensed Site Professionals, environmental consultants, risk assessors, attorneys, DEP staff and other professionals involved in developing, implementing, and maintaining AULs at disposal sites pursuant to c. 21E and the MCP. Its aim is to clarify the rules for AULs. This document does not create any substantive or procedural rights, and is not enforceable by any party in any administrative proceeding with the Commonwealth.

The guidance is organized to address the following:

- Section 1 provides a general discussion of the purposes and application of AULs in the 21E program;
- Section 2 addresses the relationship between AULs and the different MCP disposal site risk characterization methods;
- Section 3 discusses the different types of AULs and the elements which make up a complete AUL;
- Section 4 presents requirements and guidance to consider when preparing an AUL;

¹ An AUL may be used as part of either a Temporary or Permanent Solution. The standard for a Temporary Solution is “No Substantial Hazard” and the standard for a Permanent Solution is “No Significant Risk,” as c.21E and the MCP define those terms. Unless otherwise specified, the term “No Significant Risk” is used throughout this guidance to refer to the cleanup standard for both Temporary and Permanent Solutions.

- Section 5 presents the procedural requirements for the review of a Grant and the recording/registration of AULs;
- Section 6 addresses AUL amendments, termination and other requirements which apply after an original AUL has been implemented; and
- Section 7 provides AUL hypotheticals for situations where AULs are commonly used. These examples present recommended language for completing the AUL form and Opinion.

1.3 Purposes of Activity and Use Limitations

The primary purpose of an AUL is to help prevent unacceptable exposures to contamination left at a site. An AUL accomplishes this objective by identifying activities, based on an evaluation of human health risk, which are consistent and inconsistent with maintaining a condition of No Significant Risk. Although an AUL can be used to limit activities and uses which may result in exposure to contaminated groundwater or contaminants volatilizing from groundwater into indoor air, AULs are largely used to address oil and hazardous material (OHM) remaining in soil. In addition to addressing risk to human health, AULs may also be used to address potential risks to public safety, welfare and the environment.

The major purposes of an AUL are:

- to provide property owners, holders of interests in the property and others who review property records at the Registry of Deeds with notice of the presence and location of OHM remaining at a disposal site and with a description of the disposal site conditions;
- to identify site uses and activities (“permitted uses”) which, were they to occur in the future, would be consistent with maintaining a condition of No Significant Risk ;
- to identify site uses and activities which should not occur in the future or should not occur without appropriate precautions (“restricted and inconsistent uses”), as they may result in the exposure of people at or near the disposal site to remaining contamination and would be inconsistent with a condition of No Significant Risk ;
- to specify property owners’ obligations (e.g., maintenance of caps, fences, etc. and monitoring of the area subject to the AUL, and adherence to soil management plans) which ensure that the objectives of the AUL continue to be met.

1.4 AULs and the Response Action Process

AULs are intended to be implemented as part of a Permanent or Temporary Solution. A property owner may implement an AUL **only after completion of:**

- an adequate risk characterization;
- a background feasibility evaluation in cases where remedial actions are necessary to achieve a permanent solution;
- the process for selecting the appropriate remedy for the disposal site; and
- all response actions necessary to achieve and support a condition of No Substantial Hazard or No Significant Risk for current site conditions.

At sites where remedial actions (e.g., excavation, treatment or capping of contaminated media) are necessary or have been undertaken to reach a condition of No Significant Risk, the feasibility of approaching or achieving background concentrations of oil and hazardous material at the disposal site must be evaluated before the property owner can elect to implement an AUL as part of the site remedy.

Note: there has been some discussion about allowing the use of AULs prior to the achievement of a Temporary or Permanent Solution (e.g., to provide notice of contamination during a long-term cleanup). The AUL forms in the MCP, however, are written strictly for Permanent and Temporary Solutions. The MCP currently does not allow for an AUL to be used at any point in the response action process prior to the achievement of a Temporary or Permanent Solution.

Timing of the AUL and Response Action Outcome

A Response Action Outcome (RAO) that relies on an AUL is not considered valid unless the AUL is in effect, i.e., already recorded or registered at the appropriate Registry of Deeds or Land Registration Office [See 310 CMR 40.1070(3)] prior to the submission of the RAO Statement to DEP.² While an AUL must be implemented prior to the submittal of the associated RAO Statement, the AUL should not be implemented until all response actions necessary to achieve a level of No Significant Risk for current site uses have been completed. For example, if the area subject to the AUL is to be covered with clean fill and repaved to meet the No Significant Risk standard for current conditions, then those response actions must occur **before** the AUL is recorded.

AULs are based on the level of cleanup performed at a site and the need to protect against exposure to remaining contamination. They only describe permanent limitations on future site uses and activities with respect to that level of cleanup and remaining risk. When new uses and activities that do not fit into the AUL's "permitted uses" at a site are planned, the MCP requires their evaluation by an LSP before they are implemented, and the completion of needed response actions and possibly an amendment of the AUL before new exposures are created. These requirements are described in detail in Sections 2.9 and 6 of this guidance.

1.5 Use of Deed Notices or Restrictions Which Are Not AULs

A property owner may choose to impose a restriction or a notice upon his or her property related to residual contamination that is not an AUL (i.e., is not implemented using one of the AUL forms listed at 310 CMR 40.1099). Parties have used such notices or restrictions to provide information about contamination at sites where an RAO has not yet been achieved and/or where an AUL is not required. For example, "non-AUL" restrictions or notices have been implemented at sites where preliminary response actions (soil and groundwater treatment) are ongoing, but the standard for either a Temporary or Permanent Solution has not yet been achieved. "Non-AUL" restrictions or notices have also been used to limit future site activities at a small number of sites closed out with DEP oversight or under a Waiver of Approvals pursuant to the 1988 MCP.³

The Department does not object to the use of such land use controls as measures that go beyond what is required in the MCP for restricting site uses or conveying information to protect against potential exposures to contamination remaining at the site. Such a notice or restriction may not, however, be used in lieu of, nor be represented as, an AUL pursuant to the MCP. In this regard, a "non-AUL" restriction or notice:

- may not be used in place of a Grant of Environmental Restriction or Notice of Activity and Use Limitation required by the MCP to support an RAO;
- should not be entitled "Grant of Environmental Restriction" or "Notice of Activity and Use Limitation";
- should contain a statement that the restriction or notice is not a Grant of Environmental Restriction or Notice of Activity and Use Limitation implemented pursuant to 310 CMR 40.0000;
- does not need to be submitted to DEP, unless it is a part of a Waiver Completion Statement for a Permanent Solution;

² Parties can elect to use an AUL as part of a Temporary or Permanent Solution in situations for which the MCP does not expressly require an AUL. In such cases, the AUL could be implemented after the submittal of the RAO Statement. In these circumstances, DEP recommends that parties submit a revised RAO Statement to DEP with the RAO category changed to reflect the implemented AUL. A note can be added or attached to the revised RAO Statement stating that the AUL is not required by regulations, but is being implemented at the option of the property owner.

³ AULs may **not** be used at a site where a Remedial Response Action Completion Statement (i.e., Waiver Completion Statement) is submitted to document the achievement of a Permanent Solution. The risk characterization of a "waiver site" must, however, address foreseeable uses of the site in accordance with the 1988 MCP. To achieve a Permanent Solution, a demonstration must be made that the foreseeable uses of the site will not pose a significant risk and the recording of a deed restriction can be used to condition future property use. If a party chooses to file a Response Action Outcome Statement in lieu of a Waiver Completion Statement, then an AUL may be used, provided that it is prepared by an LSP [310 CMR 40.0630(2)(g)].

- does not need to adhere to the requirements for implementing AULs, including public notice.

AULs are not the only mechanism for providing information to people with potential for exposure to contamination remaining at the site. Depending upon the location of the contamination, its toxicity and potential routes of exposure, other measures for providing notice (e.g., posting signs or providing advisories to maintenance workers and others responsible for the physical management of the property) about the location and nature of the contamination should be considered. In particular, postings (in addition to measures to reduce access) may be appropriate at the perimeter of a disposal site that is in the process of assessment and remediation or at a location where people may have access to a contaminated surface water body for fishing or other recreational activities.

Parties have also elected to post signs to alert site users that an AUL has been implemented at the property. The posting directs site users to consult the AUL for more information about the contamination and the permitted and restricted site activities and uses and related obligations.

1.6 The Brownfields Act

The Brownfields Act, (Chapter 206 of the Acts of 1998, signed into law on August 5, 1998) includes new language concerning AULs. The Brownfields Act recognizes the significance of proper implementation and maintenance of AULs. In particular, the Act extends c. 21E liability relief to certain former property owners for violations of an AUL that occur after a property is transferred, provided that the AUL was properly implemented and maintained under their terms of ownership. The Act also directs the Department to ensure that all AULs conform to real estate standards and requires that DEP audit all sites with AULs. Finally, the Act makes failure to maintain the conditions of an AUL subject to a maximum penalty of \$25,000 per violation per day.

SECTION 2: AULs and RISK CHARACTERIZATION

2.1 Introduction

The MCP provides a risk characterization process, described in Subpart I (310 CMR 40.0900), to determine whether a remedial action is necessary to achieve a level of No Significant Risk of harm to health, safety, public welfare or the environment. Except where site conditions are consistent with background, it is necessary to perform a risk characterization for every site seeking an RAO, although the level of detail and complexity of the analysis will vary depending upon the specific site conditions.

The risk characterization process determines when an AUL is needed to eliminate future potential exposure pathways. When an exposure pathway is eliminated from consideration, an AUL is required to alert future owners or interested parties that certain uses may not be appropriate for the property given the level of cleanup achieved. The AUL is necessary for the continued validity of the RAO to ensure that the site presents No Significant Risk over time.

While this guidance is not intended to address all the specifics of the risk characterization process, it describes the elements of risk characterization that are important for developing AULs. The appropriateness and effectiveness of an AUL are functions of proper risk characterization of the disposal site. An AUL itself does not create a condition of No Significant Risk -- it is simply a tool used to minimize the chance of an unforeseen change in use of the subject property that could result in unacceptable exposure to chemical contaminants. Please consult the *Guidance for Disposal Site Risk Characterization (July, 1995, updated April 1996)* for a more detailed discussion regarding risk characterization.

2.2 Risk Characterization Methods

The MCP identifies three methods for characterizing risk. Regardless of the method selected, there are some preliminary steps that are required for all risk characterizations. These include:

- determining the extent of contamination,
- determining if the analytical data are of sufficient quality to evaluate the risk of harm posed by the site,
- categorizing soil and groundwater,
- identifying current and reasonably foreseeable uses,
- identifying receptors,
- determining the contaminants of concern, and
- determining background concentrations for the site.

These steps are fundamental to conducting a valid risk characterization. A risk characterization concluding that the disposal site poses No Significant Risk of harm to health, safety, public welfare or the environment is inadequate if the information used in the assessment process is invalid or incomplete.

Method 1 is the simplest approach to characterizing risk at a site. In a Method 1 risk characterization, Exposure Point Concentrations at the site are compared to promulgated standards for soil and groundwater. The Method 1 Standards were developed for three broad categories of sites. The standards represent a template for a certain type of site. For example, the Method 1 S-1 Standards are designed to be protective of unrestricted land use and activities.

The Method 1 Standards can only be used if the contamination is limited to soil and/or groundwater (i.e., it cannot be used to address contamination in sediments or indoor air). At sites where contamination exists in any other medium, a Method 3 risk characterization should be conducted.

A Method 2 risk characterization allows for limited modifications of some of the existing Method 1 Standards and allows development of standards for soil and groundwater that do not currently exist under Method 1.

A Method 3 risk characterization is a site specific approach that determines cumulative site risk and considers the risk management criteria described in 310 CMR 40.0990.

Regardless of the risk characterization method selected, a level of No Significant Risk must exist or be achieved for a site to qualify for a Class A or B RAO. When using Methods 1 or 2, a level of No Significant Risk can be demonstrated by meeting the applicable soil and groundwater standards. When Method 3 is selected, a level of No Significant Risk exists or can be achieved by meeting the risk management criteria described in 310 CMR 40.0990.

2.3 Current and Foreseeable Use

To adequately evaluate potential exposures, the risk characterization must identify and describe the site activities and uses associated with the disposal site and the surrounding environment. The terms “activity” and “use” describe human or environmental actions that could result in exposure to oil and/or hazardous material. The “use” of the property is a broad term related to the property itself, while “activity” is a narrow term used to describe the actions of people at the property that could result in exposure. Section 2.1 of the *Guidance for Disposal Site Risk Characterization* provides additional guidance on identifying the current and foreseeable use(s) of a site for the purpose of risk characterization.

2.3.1 Current Use

The risk characterization must always evaluate the current use of the site. Activities identified for the current site use must include those that are actually occurring and those that are probable and consistent with surrounding land uses [310 CMR 40.0923(2)]. All appropriate “current use” exposure scenarios should be developed based on uses and activities actually occurring at the site; uses and activities actually occurring at surrounding properties; and uses and activities that may not be occurring currently but are consistent with those ongoing at the site and in the surrounding area. These scenarios are used to determine who may potentially be exposed at the site and how frequently that exposure may occur. In the case where a disposal site is currently not being used (e.g., the property has never been developed or an existing facility has been closed and there are no plans to use the property), a “no use” scenario is not sufficient. The risk characterization must incorporate probable uses and those that are consistent with surrounding land uses.

Example: If a site currently has underground utilities, excavation and repair of the utility lines is an activity *consistent with the current use* of the property and must be evaluated in the risk characterization.

Example: If a residential property is currently occupied by adults only, children playing on-site must be evaluated in the risk characterization as such activities are consistent with the current (residential) use of the property.

Example: If an undeveloped lot is adjacent to a residential neighborhood, it is reasonably likely that it will be used by young children more frequently (perhaps as an impromptu ball field) than a similar parcel adjacent to an industrial park. The activities associated with the current use of the property should reflect this likelihood [310 CMR 40.0933(4)(a)].

Example: If an inactive industrial facility is located in or near a residential area, or an area zoned residential, then the “current use” risk characterization needs to consider the potential for young children and others walking through or using the property (i.e., trespassers). If a fence will be used to keep trespassers out of contaminated areas, an AUL must be implemented to ensure that future owners, tenants, etc. are aware of this measure and requirements for maintenance.

Parties should adopt a conservative approach when evaluating the potential for children and others to access a site. Fencing, for example, should not be considered an absolute barrier or permanent measure for preventing exposures that could result if children and others access the site.

AULs cannot be used to eliminate exposure pathways that are consistent with the current uses identified in the risk characterization. Only an actual change in the current use (resulting in a new, different current use) can eliminate such pathways from the evaluation.

2.3.2 Reasonably Foreseeable Use

The risk characterization must evaluate all reasonably foreseeable site activities and uses to the extent that such uses are not eliminated from further consideration through the application of an AUL [310 CMR 40.0923(3)].

As a starting point, the reasonably foreseeable uses and activities of a site are defined [310 CMR 40.0923(3)] to include "any possible activity or use that could occur in the future....". In other words, the regulations presume unrestricted use of the property. If the level of site cleanup is incompatible with the unrestricted use of the property, that information must be communicated to future owners/users of the site.

Land use does not remain constant over time and it is difficult to predict with certainty future uses for specific properties. The MCP affords property owners wide latitude in identifying the foreseeable use of their property, considered within the context of the surrounding community. The primary requirement of the regulations is that the reasonably foreseeable use(s) of the property determined by the owner and evaluated in the risk characterization must be described in an AUL unless the property will be clean enough for unrestricted use.

Reasonably foreseeable uses represent circumstances that are hypothetical. These conditions may not presently exist and might in fact never occur. The universe of future uses of a site may be narrowed, usually based upon a specific planned use of the property, a belief that the current use is likely to continue into the future or some other information. The "reasonably foreseeable use" of a property should be carefully evaluated and may include many activities, although past use and the land use of the surrounding area are usually good indicators of reasonably foreseeable use. Planned uses are certainly "foreseeable" and should be explicitly evaluated in the risk characterization.

Example: At an active manufacturing plant the owner has no plans to curtail operations. In order to close out a UST release it is determined that the future use of the site will be the same as the current use. An AUL is developed to reflect this assumption.

Example: The owner of a small mill building along a river is seeking financing to convert the building to condominiums. The risk characterization should include residential use of the property as a reasonably foreseeable use.

Example: A former manufacturing facility, which is now vacant, abuts an industrial area and several homes. The property owner has no specific plans for redevelopment. "Reasonably foreseeable use" should consider the uses allowed by current zoning or the building's former use in the risk characterization, as well as development consistent with the character of the surrounding neighborhood. If the cleanup is not sufficient to support the most sensitive of these foreseeable uses, then an AUL would be required to lock in the limitations on future use that the risk characterization assumed.

The risk assessment must consider any activities and exposures consistent with the identified future use(s). AULs are not required if the property owner wishes to assume unrestricted use of the property, and characterizes potential risks under conservative exposure assumptions (generally consistent with unrestricted use of the property), and concludes that No Significant Risk exists or was achieved using this assumption.

Example: A commercial property may currently have no potential for exposures associated with children playing on the property. However, it is reasonably foreseeable that the property use could change in the future, making these types of exposures possible. Such potential future exposures must be evaluated in the risk characterization unless specifically ruled out through the use of an AUL.

2.4 AULs and Specific Site Activities

2.4.1 Easements

If a property is subject to any easement (e.g., utility easements, access rights, etc.), then at a minimum the site must be cleaned up to a level consistent with the activities authorized by such easement. Such activities should be evaluated as a current use in a risk characterization of the property.

Where underground utilities exist, exposures associated with emergency repair work must be evaluated under the current use scenario. Typically these exposure scenarios should consider exposures associated with acute, non-cancer effects. Due to the short-term nature of the exposure, it is not necessary to evaluate potential cancer risk. The primary exposure routes in these scenarios include direct contact and incidental ingestion of contaminated soil. It is appropriate to consider only those contaminants that may pose an acute or short-term risk through these exposure routes (i.e., cyanide exposures).⁴ Another possible exposure route for evaluation is inhalation of vapors associated with either contaminated soil or groundwater. In addition to inhalation concerns, the evaluation should also consider the potential for explosive vapors as a risk of harm to public safety.

Where a Method 1 or a Method 2 risk characterization is performed, the Department does not require a separate Method 3 risk characterization to evaluate possible exposures to utility workers. Current standards are assumed to be protective of such exposures.⁵ Where a Method 3 risk characterization is performed, utility worker exposures should be considered as appropriate. Regardless of the Method selected, cleanup is required unless the risk characterization results indicate that a level of No Significant Risk exists for a utility worker.

Where future utility construction is possible, an AUL may be used to limit excavation activities and specify conditions including health and safety steps necessary for any such future utility activities. These procedures must, at a minimum, be consistent with the health and safety procedural requirements of the MCP (310 CMR 40.0018).

2.4.2 Health and Safety and Soil Management Plans

Where appropriate, parties should prepare and implement a Health and Safety Plan to manage risk to workers and others near the AUL area in the event of excavation or construction activities. A complete Health and Safety Plan does not need to be prepared at the time the AUL is recorded, but the “Obligations and Conditions” section of the AUL should include a requirement to develop and use such a plan. The scope and objectives of the plan should be described in the AUL Opinion and form.

A general statement such as, “OSHA procedures will be used during excavation,” provides very little information as to what health and safety requirements are necessary at the site. The AUL should describe what activities warrant the implementation of the plan and identify whom the plan is intended to protect (e.g., construction workers and people who work/reside on or near the site). The Health and Safety Plan should be prepared by a Certified Industrial Hygienist or an individual appropriately trained and/or experienced in the development of Health and Safety Plans, and the AUL should specify that the plan should be prepared by a qualified professional. The plan should specifically identify the chemicals at the site, the types of contaminated media present and the potential routes of exposure. The plan should also indicate the appropriate level of protection needed and the type of monitoring required. (*See Section 7: Hypothetical AUL Case Studies* for examples of language regarding Health and Safety Plans.)

Please note that compliance with OSHA may not be sufficiently protective under the MCP as OSHA standards do not necessarily equate to a level of No Significant Risk at the site. For example, stating that OSHA guidelines will be followed does not identify whether monitoring for off-site exposures is necessary (i.e., monitoring for particulates at the site boundary to guard against exposures to people other than those performing the excavation who are in the vicinity of the site).

In certain situations it may be necessary to develop a specific Soil Management Plan to address the handling and disposition of soil excavated from the AUL area. As with the Health and Safety Plan, Soil Management Plans may be developed either at the time the AUL is filed, or at the time the excavation is being planned. Again, the AUL Opinion and form should specify that the development of a Soil

⁴ The Department is evaluating the potential for acute dermal reactions associated with exposure to specific metals. This information will be evaluated in connection with revisions to the MCP. In the interim, it may be appropriate to consider these types of effects, although specific guidance is not currently available. The risk assessor should make this determination on a case-by-case basis.

⁵ As part of an on-going program evaluation, the Department will review the Method 1 Standards to determine whether these values are protective for inhalation exposures, including utility worker exposures. In particular, the evaluation will look at whether the groundwater standards are protective for short term vapor exposures.

Management Plan is necessary and provide information regarding the scope and objectives of such a plan.

While AULs may specify Health and Safety and Soil Management Plans to allow for construction and non-emergency utility repair activities (recall, the site must be clean enough to support emergency work), an AUL should not be used to specify future *remedial actions* (e.g., removal or treatment of contaminated soil and the associated sampling and analyses, placement of a cap/cover material) to allow for future site uses which are inconsistent with current site conditions. That is, the AUL itself should not be used as a substitute for a Remedy Implementation Plan or a Release Abatement Measure Plan for response actions which would be necessary to meet a condition of No Significant Risk for an anticipated change in site use. Remedial actions of this sort require the preparation of an appropriate plan by an LSP and the submission of the plan to DEP. (See Section 6 for more discussion on undertaking remedial actions at a site with an AUL).

2.5 Summary of When AULs Are/Are Not Required

The MCP specifies the conditions, based on the levels and location of oil and/or hazardous material remaining at a disposal site and the risk characterization method, for which an AUL is or is not required. While the MCP carves out some exceptions, an AUL is generally required any time the Exposure Point Concentrations of OHM left on site exceed a level of No Significant Risk for unrestricted use of the site. Even when such contamination is at depth and therefore no exposure is currently likely, an AUL is necessary to prevent activities in the future that would result in the uncontrolled excavation of, and human exposure to, contaminated soils.

The conditions under which an AUL is required are found at 310 CMR 40.1012 and are summarized below.

2.5.1 When AULs Are Required

An AUL is specifically required by the MCP to address contamination left at the site [310 CMR 40.1012(2)] in the following cases:

- when Method 1 is used to characterize risk, any time the soil Exposure Point Concentrations do not meet the S-1 Soil Standards [Table 2 at 310 CMR 40.0975(6)(a)];
- when Method 2 is used to characterize risk, any time the soil Exposure Point Concentrations do not meet the applicable Method 1 or Method 2 S-1 Soil Standards;
- when Method 3 is used to characterize risk, any time assumptions are made in the risk characterization about restricting or limiting use of the property;
- any time an existing private well has been abandoned and the property(ies) served by the private water supply has been connected to a public water supply system in accordance with 310 CMR 40.0932(5)(d);
- any time OHM in soil at a depth greater than fifteen feet from the ground surface exceeds an applicable Upper Concentration Limit (UCL) in soil listed in 310 CMR 40.0996(7).

2.5.2 When AULs Are Not Required

310 CMR 40.1012(3) specifies the situations where an AUL is *not* required by the MCP to address contamination left at the site. AULs are not required (but *may* be used unless expressly prohibited) as described in section 2.5.3:

- any time OHM concentrations greater than the S-1 Soil Standards are only found at a depth greater than 15 feet below the ground surface, unless the concentrations are greater than the S-3 Soil Standards and you cannot use Method 1;
- any time a Method 3 risk characterization has been conducted and the OHM remaining in soil at levels at or below the UCLs exists only at a depth greater than 15 feet below the ground surface;
- any time OHM remaining in soil is located in a public way or rail right-of-way, as those terms are defined in 310 CMR 40.0006;
- any time OHM concentrations are consistent with site background concentrations; and
- when a Temporary Solution is implemented.

The rationale for not requiring AULs in situations where contamination (at concentrations below the UCLs) is located at a depth greater than 15 feet below the ground surface or beneath a public right of way or rail right of way is that the potential for future exposure to or excavation into contamination at that depth or in those locations is minimal. Note, while public ways and rail rights-of-way do not require AULs, owners of these lands are required to meet all other cleanup requirements and provide notice to the public and future owners, in accordance with 310 CMR 40.1403(8).

2.5.3 Prohibited Uses of AULs

310 CMR 40.1012(4) states explicitly that an AUL cannot be used in lieu of an applicable Method standard. For example, when using Method 1, if the soil is categorized as S-2 and the calculated exposure point concentrations exceed an S-2 standard, cleanup to meet the S-2 level is needed to achieve a permanent solution. The implementation of an AUL does not negate the requirement to meet the applicable standards. Specifically, 310 CMR 40.1012(4) states that an AUL cannot be used to:

- change the category of groundwater categorized as GW-1 or GW-2 (except as provided in 310 CMR 40.0932(5)(d) with respect to existing private wells); *or*
- justify a conclusion of No Significant Risk when using Method 1 or 2 if an applicable standard is exceeded.

2.6 AULs and Groundwater

AULs are primarily *required* to address human activities and uses of a site that could result in exposure to soil contamination. AULs are specifically required for groundwater in one instance: to restrict the ongoing use of an existing private well for use as a drinking water supply where the GW-1 standards will not be met. However, the AUL can only be used in this situation after the property supplied by the well is tied into a public drinking water supply. The groundwater, as a result, can be eliminated from consideration as a current drinking water source area or “GW-1” [310 CMR 40.0932(5)(d)].

AULs may also be necessary to address OHM remaining in groundwater if the remedy employs “exposure pathway elimination measures” [See 310 CMR 40.1012(2)(b)], such as a venting system or vapor barrier, to prevent the migration of volatile contaminants from the groundwater into an existing building. In such instances, the AUL ensures that the system will remain in place and continue to function effectively in preventing exposure (i.e., the AUL provides for the inspection and maintenance of the system).

A frequent question is “why the application of AULs to groundwater contamination so limited?” Why, for example, does the MCP not require the use of AULs on all properties where the groundwater does not meet drinking water quality standards to prevent the future installation of a private drinking water well or to protect against potential vapor problems in future buildings constructed over shallow plumes of volatile organic compounds?

The policy decision behind the MCP’s limits on the use of AULs for groundwater contamination rests on several considerations. First, because contamination in groundwater migrates over time, providing an accurate description of the affected area of groundwater as part of an AUL is problematic as the boundaries can be expected to change. Second, because groundwater migration does not respect property boundaries, AULs for groundwater in many cases would entail obtaining agreement(s) from owners of neighboring properties to restrict access/exposure to contamination in groundwater underlying their properties. Because it is unlikely that parties engaging in cleanups could routinely obtain such agreements, any MCP requirement to do so would be impractical and unachievable. Finally, in the case of ensuring that *new* private wells are not installed in and are not drawing upon contaminated groundwater, local Boards of Health have the authority to ensure that such supplies are potable. Therefore, the MCP does not need to provide a separate regulatory check on potential exposure to groundwater contamination via new private water supply wells.

There is no check currently, however, on the potential for exposure to contamination volatilizing from groundwater into indoor air in the case of future building construction. The MCP does not require an evaluation of such exposures where no building currently exists or is planned (GW-2 standards, which are set to protect against the volatilization of contamination from groundwater into indoor air, are

applicable only to existing or planned buildings). Parties have, at their option, used AULs to address potential exposure concerns should future construction occur at a site where volatile constituents remain in groundwater at the time a Class A or B RAO is submitted. This guidance covers the use of AULs in this instance (See Section 7, Case Study 8) and others where the MCP does not expressly require an AUL. Please note that DEP is currently considering MCP revisions that would change the applicability of the GW-2 standards.

2.7 AULs and the Risk Characterization Methods

The MCP's risk characterization methods are used to determine whether a level of No Significant Risk exists or has been achieved for current and reasonably foreseeable uses of the site. Current use includes actual, planned, probable and/or consistent uses, while foreseeable use denotes a use or activity that has not yet occurred. In many cases the current and the reasonably foreseeable uses are the same.

AULs may be employed at a site regardless of the risk characterization method (MCP Methods 1, 2 or 3) selected.

2.7.1 Method 1

Soil Contamination

When conducting a Method 1 risk characterization of soil the Exposure Point Concentrations in the soil are compared to the MCP Standards (310 CMR 40.0975) for each of the applicable soil categories at the site. The first step in a Method 1 risk characterization is to categorize the soil at the site. Bear in mind that it is often possible to have more than one soil category at a given disposal site.

The derivation of the Method 1 Soil Standards is described in the *Background Documentation for the Development of the MCP Numerical Standards, April, 1994*. The standards were developed through a process that considered the following parameters: risk-based concentrations (non-cancer and cancer risk), background concentrations, practical quantitation limits, leaching-based considerations and over-all ceiling values. The soil categories are broad and, while specific calculations had to be chosen, they are representative of similar exposures which could occur in a given category.

Soil standards have been developed for 3 categories of soil: S-1, S-2 and S-3. The Soil Standards were derived using a common methodology. The specific exposure factors for each category were designed to describe a range of potential exposures situations commonly found at disposal sites. In selecting Method 1 to characterize risk posed by the site, the PRP and risk assessor are accepting the exposure scenarios used to derive the Method 1 standards.

S-1

The risk-based values for S-1 are based upon a residential exposure scenario in which a potential receptor comes into contact with the contaminated soil while playing or gardening. For non-cancer effects, the receptor of concern is a young child (aged 1-8 years) who comes in contact with house dust of soil origin (indoors) and contaminated soil outdoors. The exposures considered include ingestion and dermal contact with contaminated soil. This residential exposure is considered to be protective for all potential site uses and thus the S-1 standards represent levels acceptable for unrestricted use of a property.⁶

An AUL is not required if the site Exposure Point Concentrations are equal to or less than the S-1 standards, since these values represent levels acceptable for unrestricted use. Conversely, an AUL is required when the soil exposure point concentrations do not meet the S-1 soil standards when conducting a Method 1 risk characterization. In the latter case the LSP could not conclude that the site is clean enough for unrestricted use.

As mentioned earlier, there are a few exceptions to the requirement for an AUL if the site does not meet the S-1 soil standards:

⁶ Any given Soil Standard may be based upon the lowest calculated risk based number, or one of the following considerations: the leaching based concentration, the practical quantitation limit (PQL), background concentrations or a ceiling concentration. See the *Background Documentation for the development of the MCP Numerical Standards, April, 1994* for a more thorough discussion.

- (a) when it is demonstrated that background levels have been achieved, regardless of whether such levels exceed the S-1 standards, or
- (b) when concentrations of OHM greater than S-1 Standards are found only at a depth greater than 15 feet below ground surface [310 CMR 40.1012(3)(b)], or
- (c) when contamination remains in a public or rail right-of-way [310 CMR 40.1012(3)(c)].

S-2/S-3

When conducting a Method 1 risk characterization at a site where S-2 and/or S-3 standards are applicable, the site Exposure Point Concentrations are compared to the appropriate standards. The Soil Category S-2 values are based upon an exposure scenario in which a person potentially comes into contact with contaminated soil in a work environment or passive recreational setting.⁷ For both cancer and non-cancer health effects, the receptor of concern is a worker (aged 18-45 years) who comes into contact with contaminated soil as part of his/her employment.⁸ The exposures evaluated include incidental ingestion and dermal contact with contaminated soil during the spring and summer months.

The Soil Category S-3 Standards are based upon a person coming into contact with contaminated soil during a short but intense exposure, such as excavation work. For non-cancer effects, it is assumed that the exposure occurs over a period of 3 months, specifically in June, July and August. The exposures evaluated include incidental ingestion and dermal contact with contaminated soil during the summer months.² A seven year exposure period was used to evaluate cancer risk, due to the uncertainties inherent in evaluating short-term exposures for possible carcinogenic effects. Therefore, the cancer risk-based concentrations were based upon a worker being exposed 5 days/week, for 3 months/year for 7 years.

Whenever the Exposure Point Concentrations are equal to or less than the applicable S-2/S-3 standards, but exceed the S-1 standards, an AUL is required. This is because the S-2 and S-3 soil categories assume certain limitations on receptor exposure and these limitations must be documented in the AUL Opinion.

Please note again that a level of No Significant Risk cannot be achieved simply by using an AUL when the Method 1 Standards are exceeded [310 CMR 40.1012(4)(b)]. By selecting Method 1 to characterize risks at the site, a party accepts the assumptions used in the development of the Method 1 Standards. Method 1 does not provide flexibility to modify the exposure assumptions used by DEP to develop the standards.

If the applicable Method 1 soil standards are exceeded, a party must either remediate the site to a point that the calculated Exposure Point Concentrations meet the Method 1 levels, or must perform a Method 3 risk characterization to demonstrate that the contaminant levels do not pose a significant risk. (Note: a Method 3 risk characterization may also indicate that contaminant levels require remediation.)

Groundwater Contamination

An initial step in the risk characterization process is to categorize the groundwater at the site in accordance with 310 CMR 40.0974. There are three categories of groundwater standards. MCP category GW-1 Standards [310 CMR 40.0974(2)] apply to groundwater which is considered either a current or a potential source of drinking water.

The GW-2 Standards [310 CMR 40.0974(2)] apply to groundwater that is at a shallow depth and below or near a structure that exists or is planned to be built on the land above the groundwater. These standards are intended to address the potential migration of volatile OHM from the groundwater into indoor air.

The GW-3 Standards [310 CMR 40.0974(2)] apply to all groundwater areas for a Method 1 risk characterization. These standards protect against the migration and discharge of groundwater contaminants to surface water at concentrations above an Ambient Water Quality Criterion.

⁷ *Ibid.*

⁸ This evaluation also considered passive recreational exposures to children, and found that, given the exposure assumptions employed, the worker scenario described is protective of those exposures.

² See note 3.

Once the groundwater has been categorized, contaminant levels can be compared to all the applicable groundwater standards [310 CMR 40.0974(2)]. In general, AULs cannot be used to restrict exposure to contaminated groundwater in support of a Permanent Solution (*See discussion in Section 2.6*).

Under Method 1, an AUL may be used to change the applicable GW Standard only when the sole reason for a GW-1 categorization is the presence of a private drinking water well. In order to change the GW category the private water supply well must be removed from service as a source of drinking water [310 CMR 40.0932(5)(d)1.]. In addition, a Grant of Environmental Restriction must be approved by the Department which includes documentation that the well has been properly abandoned or demonstrates the absence of any unpermitted cross-connection between the private water supply well and the public system. An alternative water supply must be provided.

When Method 1 is used to achieve a Temporary Solution (a Class C RAO), an AUL may be used to restrict human activities that could result in exposure to contaminated groundwater until a Permanent Solution is achieved. The use of an AUL as part of a Class C RAO is not required under the MCP [310 CMR 40.1012(3)(g)], but may be used while groundwater remediation is on-going.

When groundwater is not in a GW-1 area, the MCP does not require an AUL to ensure that private water supply wells will never be placed on a disposal site or in its surrounding area. Similarly, the MCP does not require an AUL to prevent or condition future building construction in areas where there may be a potential for OHM to volatilize from groundwater and affect indoor air in such buildings. It may, however, be prudent to implement an AUL in an area where the GW-2 values are exceeded, in order to control future building design (sub-slab ventilation systems, etc.) and prevent potential exposures via volatilization of contaminants into indoor air. Please note that DEP is considering MCP revisions in the application of GW-2 standards and consequent requirements for AULs.

2.7.2 Method 2

Method 2 allows for two types of applications. First, Method 2 may be used to fill data gaps by creating Method 1 type Standards that do not currently exist. Second, Method 2 may be employed to incorporate site-specific fate and transport information to modify existing Method 1 Standards. Not all of the Method 1 Standards may be modified, however. Modification is allowed for:

- the leaching component of the Method 1 Soil Standards;
- the volatilization component of the Method 1 GW-2 Standards; and
- the migration and discharge components of the Method 1 GW-3 Standards.

The Method 1 Standards that cannot be modified include:

- the GW-1 Standards; and
- Soil Standards based upon direct contact [310 CMR 40.0985(6) Table 5].

Method 2 does not allow for changes to a receptor's exposure assumptions. The equations are provided at 310 CMR 40.0983 and 40.0984 for soil and groundwater, respectively. Changes in exposure assumptions are only appropriate in a Method 3 risk characterization. Once the new or modified standards are identified, the Method 2 risk characterization is conducted in accordance with the rules for a Method 1 assessment.

A more detailed discussion of Method 2 Modifications is provided in the *Guidance for Disposal Site Risk Assessment, Section 6.0*.

Soil Contamination

AULs are required for the same circumstances when using a Method 2 risk characterization as they are for Method 1. Therefore, remedial action or an AUL is required any time the soil Exposure Point Concentrations exceed the new or modified S-1 soil standards as the site is not clean enough for unrestricted use. Conversely, an AUL is not required if the site Exposure Point Concentrations are equal to or less than the new or modified S-1 standards, since these values represent levels acceptable for unrestricted use.

As with Method 1, the exceptions for requiring an AUL if the site does not meet the S-1 (new or modified) soil standards are:

- (a) when it is demonstrated that background levels have been achieved, regardless of whether such levels exceed the S-1 standards, or
- (b) when concentrations of OHM greater than S-1 Standards are found only at a depth greater than 15 feet below ground surface [310 CMR 40.1012(3)(b)], or
- (c) when contamination remains in a public or rail right-of-way [310 CMR 40.1012(3)(c)].

In addition, whenever the Exposure Point Concentrations are equal to or less than the applicable S-2/S-3 (new or modified) standards, but exceed the S-1 standards, an AUL is required. This is because certain limits on receptor exposure are assumed with the S-2 and S-3 soil categories, and these limits must be documented in the AUL Opinion.

Groundwater Contamination

The criteria for the use of AULs for groundwater are the same with Method 2 as they are with Method 1. However, the GW-2 and GW-3 standards may be modified in Method 2 based upon site-specific conditions. In some situations, maintenance of those conditions may be required to ensure a level of No Significant Risk and in those cases an AUL should be implemented. Therefore, where Method 2 is used to alter assumptions due to human interventions, an AUL is necessary to lock in those assumptions as part of a Permanent Solution.

To illustrate this point, consider a site where a GW-2 value is modified because of existing building conditions [310 CMR 40.0986(2)(a)]. It is not uncommon to employ the use of an engineered design that requires passive ventilation of an area below the basement of a building.¹⁰ This barrier prevents volatilization of contaminants from the groundwater into the occupied space of the building, thus preventing exposure. Method 2 could be used to modify the GW-2 value, allowing for a much higher concentration in the groundwater because the exposure pathway is incomplete (i.e., contaminants cannot volatilize into the occupied space of the building). The maintenance of this engineered system is critical to the validity of the revised GW-2 standard which ensures a condition of No Significant Risk. An AUL reflecting the obligation to operate and maintain the system would be required.

Under Method 2, exposure assumptions cannot be modified; a Method 3 risk characterization is necessary to change exposure assumptions, such as the type of receptor or the duration of exposure.

Where a building currently exists, adequate site characterization is essential to rule out the potential for current exposures. If a model is used as part of this assessment, the model's assumptions must be sufficiently protective for both current and reasonably foreseeable uses. If the foreseeable use could be more sensitive than current use, the model must take this foreseeable use into consideration. An AUL may be necessary to prevent future exposures that would pose a risk of harm. Where Method 2 is used to alter or change fate and transport [define] mechanism assumptions, an AUL is not required. The *Guidance for Disposal Site Risk Assessment, July, 1995, Section 6.3.1.3, Use, Application, and Interpretation of Predictive Models*, recommends the use of input values associated with soil characteristics (such as soil porosity and permeability) based upon a conservative range of assumptions given the uncertainties that exist using any model. Moreover, it may be appropriate to conduct a "worst case" analysis for conditions at the site, or to consider conducting a sensitivity or uncertainty analysis.

Case Study 6 in Section 7 provides an example of an AUL used for the maintenance of building conditions to guard against volatilization of contaminants into indoor air. However, please note that this case study focuses on a Method 3 risk characterization. Case Study 8 provides an example of an AUL that addresses the potential for volatilization into a future building.

2.7.3 Method 3

¹⁰ An active ventilation system would be considered a Temporary Solution (a Permanent Solution cannot rely upon Active Operation and Maintenance, as defined in the MCP). Therefore an AUL would not be required as part of a Class C RAO.

In a Method 3 risk characterization, an AUL is required any time a reasonably foreseeable exposure scenario is eliminated from evaluation [310 CMR 40.1012(2)(a)(2)]. The same rules and guidance described in Section 2.3 above apply to any of the MCP's Methods for basing risk characterizations on current and reasonably foreseeable uses of the site and its surrounding area. An AUL may *not* be used to eliminate current uses/activities at a site from consideration in the risk characterization [310 CMR 40.0923(4)(a)]. As long as an activity is occurring at a site it must be considered in the risk characterization. The property owner may have the right and ability to change the current use, but until the change is actually made, the use occurring at the time of the risk characterization must be considered.

When conducting a risk characterization at a disposal site, the soil and groundwater should be categorized regardless of the method of characterization chosen [310 CMR 40.0993(2)]. (There is a tendency to overlook soil and groundwater categorization when a Method 3 risk characterization is conducted). The soil category in a Method 3 characterization should be consistent with the site-specific exposure scenarios developed. Under Method 3 all current exposure scenarios must be evaluated, as well as any reasonably foreseeable future uses and activities. Any future uses or activities that are eliminated from consideration in the risk characterization must be accompanied by an AUL, unless the need for an AUL is specifically not required.

Soil Contamination

When using Method 3 to characterize risk of harm associated with soil exposures, an AUL is necessary any time there are assumptions of restrictions on uses or activities at the site. The Method 3 risk characterization must evaluate current exposures and reasonably foreseeable exposures to OHM present in soil at the site. The current uses and activities should be considered in the risk characterization. As discussed above, the current uses and activities must include actual exposure scenarios, as well as uses and activities which are consistent with current conditions. The reasonably foreseeable exposures should either be evaluated or an AUL should be implemented, after appropriate remedial action, to ensure that potential exposures do not occur without further evaluation or remediation. Disturbance of subsurface soils could pose a significant risk and the AUL provides a level of assurance that these soils will not be excavated or if they are, appropriate precautions will be taken.

In summary, except for those situations specified by the MCP in 310 CMR 40.1012(3) and listed in Section 2.5.2 of this document, for a site to be considered "clean" without the imposition of an AUL, it must be demonstrated that it is clean enough for "unrestricted use."

Groundwater Contamination

Method 3 requires that groundwater at a site be categorized as GW-1, GW-2 and/or GW-3. The exposure scenarios developed for the risk characterization should be consistent with those categories. As with Methods 1 and 2, an AUL may only be used to eliminate groundwater exposures if a Grant of Environmental Restriction is used to close a private well pursuant to 310 CMR 40.0932(5)(d). A notice may also be used as part of a Class C RAO for risk reduction during groundwater recovery and treatment.

An AUL may optionally be applied to address the potential for vapor infiltration into future, currently unplanned buildings. When conducting a Method 3 risk characterization, the site specific conditions may be taken into account, including site specific receptor information. *Case Study 6* illustrates a situation where the receptors are present in the building only during a routine workweek. In that case an AUL is necessary because the use of the site is not unrestricted.

2.8 Risk of Harm to Safety, Public Welfare and the Environment

Although AULs are primarily intended to address risks to human health, they may also be used to protect against activities or maintain remedies to address risks to safety, public welfare or the environment.

Risk of Harm to Safety

An AUL could be used to condition or prohibit activities which could pose a risk of harm to safety. The risk of harm to safety is always a separate evaluation in accordance with 310 CMR 40.0960.

Example: An AUL could provide for the maintenance of a cap to prevent direct contact with physical hazards (e.g., glass and metal fragments) present at a site, or a fence to attempt to control access to certain areas of a site where safety hazards exist.

Risk of Harm to the Environment

The use of an AUL to address risk of harm to the environment is sometimes feasible. Clearly, an AUL stating that animals must not use the property, or limiting an animal's use of a property, is not realistic and should not be considered. However, when a remedial action, such as capping to prevent runoff to a wetland, is conducted to prevent risk of harm to the environment, it may be appropriate to include an AUL with the RAO to establish continuing obligations for human activities such as maintenance of the cap and obligations to not interfere with its function.

Risk of Harm to Public Welfare

An AUL to prevent risk of harm to public welfare may also be employed.

Example: A risk characterization may conclude that potential soil exposures do not pose an unacceptable risk of harm to human health, but the soil may have a strong odor or oily residue which could cause a nuisance if the contaminated soil were placed in an area of unrestricted use. An AUL could be applied in this case to guard against the excavation or placement of soils in an area where odors or residue could cause a nuisance.

2.9 Evaluation of Risks Associated with Changes in Uses and Activities

An AUL is not a permanent limitation on future development of contaminated property. As described earlier, the AUL is a means of transmitting knowledge of the appropriateness of the site cleanup for specific activities. Use of an AUL allows deferral of the evaluation of future uses that are considered to be unlikely for a site until the time (if at all) that such uses are proposed.

Where an AUL has been used to eliminate certain exposure scenarios at a site and the property owner plans to change the site uses or conditions to uses or conditions which were not evaluated or addressed by the existing AUL, an LSP must determine before the changes are implemented if a level of No Significant Risk would continue to exist under the new uses or conditions. In cases where proposed activities would not be consistent with a level of No Significant Risk, additional cleanup and the amendment or termination of the initial AUL and application of a revised AUL would be necessary before the proposed activities could occur. (*See Section 6 for the requirements related to a change in land use after an AUL has been implemented*).

2.10 Language of the AUL

The goal of an AUL is to identify and describe as clearly as possible the restricted and permitted site uses that are consistent with the assumptions regarding site use. The LSP Opinion that accompanies the AUL should discuss the rationale for the AUL and discuss how the risk characterization process was used to develop the AUL. *Section 3 discusses recommended language for describing prohibited or inconsistent uses and permitted uses in AULs. The Case Studies in Section 7 also provide recommended AUL language for common disposal site scenarios.*

The language of the AUL should not necessarily vary based upon the risk characterization Method used. The AUL language should be clear enough so that a lay reader unfamiliar with the MCP risk characterization process and methods will understand the meaning of the restrictions. Keep in mind that the most likely readers of the AUL include prospective purchasers of the property, tenants and site neighbors or local officials who consult the deed seeking a description of the remaining contamination and what should and should not be occurring at the property. While the exposure assumptions underlying the different risk characterization methods may vary, the description of what activities and uses should and should not occur should be essentially the same regardless of which method is used. For example, a Method 1 risk characterization may conclude that there should be no excavation at the site to prevent contact with S-3 soil. A Method 3 risk characterization may conclude that no excavation should occur

based upon a more site-specific evaluation such as recreational soil contact and incidental soil ingestion. In either case, the AUL should convey the information that excavation should not occur without appropriate health and safety considerations.

The AUL should describe the restricted activities and areas subject to the AUL in terms that do not rely upon the reader's knowledge of the MCP. When MCP terms are employed in the AUL form and AUL Opinion (i.e., "soil categorized as S-1"), then those terms should be defined in the AUL. Appropriate and inappropriate activities should be specifically described. The basis of the AUL should be apparent upon its face and it should stand on its own. A brief narrative in the LSP Opinion should explain the nature of the site conditions, the risk characterization method used and how the particular limitations were identified.

The activities and uses should be easily identifiable and enforceable. For example, an AUL should not be used to limit people's activities to a certain level of activity or for a particular duration of time; i.e., workers may be present for only 2 hours per day. Restrictions of this nature are difficult to uphold and it is difficult to evaluate for effectiveness. At the same time, some short-term exposures can be appropriately incorporated in the conditions of an AUL (e.g., during non-emergency repair of underground utilities that cross an area subject to an AUL). The AUL should be reasonable and clearly should not impose conditions that are illegal or discriminatory. The AUL should focus on what is being restricted. For example, if a party needs to prevent children from coming into contact with soil, then the AUL should identify and prohibit uses and activities that might result in a child coming into contact with soil. The AUL could identify prohibited uses such as residential use, use as a school, playground, park or daycare. However, it would be insufficient to provide that "young children should be kept away from unpaved surfaces".

SECTION 3: AUL TYPES and ELEMENTS

AULs are a form of land use control that has been created under the MCP. AULs take the form of either a grant of restrictions on the activities and uses made of a property or a notice of activities and uses which are consistent and inconsistent with maintaining a condition of No Significant Risk at a property.

3.1 Authority for Establishing AULs

Placing restrictions upon real property, either physically (by erecting a fence to limit access) or legally (by imposing land use restrictions), is not a new concept. The federal CERCLA program routinely establishes "institutional controls" to limit opportunities for exposure to residual contamination. Other forms of land use controls include land use ordinances and zoning laws that restrict certain uses of property in order to protect the public interest by limiting traffic, controlling height and setbacks of buildings, and maintaining specific conditions in certain areas of a community.

The 1992 amendments to M.G.L. c.21E, § 6 authorized the Department to acquire interests in or to restrict use of real property as a tool to ensure that oil and hazardous material are cleaned up adequately. Section 6 states:

. . . that if necessary to carry out the purposes of Chapter 21E, the department may:

- acquire real property or any interest therein, by purchase, gift or lease, or by eminent domain under M.G.L. c. 79;
- restrict the use of property that is or was a site or vessel; and
- record, or may cause, allow or require the owner of property to record, notice of the restrictions of the use of such property. No restriction held by the department shall be unenforceable on account of lack of privity of estate or contract or lack of benefit to particular land or on account of the benefit being assignable or being assigned to any other governmental body, provided such restrictions or assignments are approved by the commissioner of the department.

The Brownfields Act (Chapter 206 of the Acts of 1998) directs DEP to ensure that AULs are prepared and recorded or registered in the same manner and with the same professional standards as other similar real estate instruments. The AUL requirements in the MCP and this guidance are part of DEP's effort to achieve this mandate.

3.2 Types of AULs

The authorization in M.G.L. c. 21E, §6 led the Department to develop the following types of AULs or forms of land use controls in the MCP:

1. Grant of Environmental Restriction (two types);
2. Notice of Activity and Use Limitation; and
3. Environmental Restriction (imposed by DEP)

The first two types of AULs are voluntary and designed for use by and at the discretion of private parties. The third type of AUL is involuntary and issued by DEP only where a publicly funded cleanup leaves contamination that could result in unacceptable risk under certain conditions and the property owner has refused to implement an AUL at the property.

This guidance has been developed primarily as a reference for cases where AULs are implemented voluntarily by parties conducting response actions. The following discussion focuses on voluntary AULs.

3.3 Voluntary AULs

The two voluntary forms of AULs, the Grant of Environmental Restriction and Notice of Activity and Use Limitation, have important similarities and differences. Both document that a release of OHM has occurred at a property, that a response action has been undertaken at the site, and that the protectiveness of

the cleanup relies upon certain activities and uses not being made of the property. The legal effects of a Grant and Notice, however, differ significantly.

Grants

A Grant of Environmental Restriction is a **legally enforceable contract** which conveys property interests to DEP. Such interests take the form of restrictions, easements and covenants. Present and future property owners, present interest holders who have subordinated their interests to the Grant, and future interest holders are legally required to abide by the terms of the Grant and its restrictions, easements and covenants. The Department, as the grantee or recipient of such interests, has the right to enforce the terms of the Grant if these terms are violated.

Consequently, as the terms of a Grant are enforceable by contract, the Grant offers a greater degree of control over the use of a property by present and future owners and interest holders. A property owner who seeks strong security over the uses of a property by a lessee or others may desire this level of control. A lender may also prefer such a degree of control over property it holds as collateral to reduce the risk of unpermitted activities occurring there.

The Department may enforce the Grant under the MCP or seek legal and/or equitable remedies through the courts. In general, DEP will pursue enforcement actions for Grant violations against the party who caused the violation (or allowed the violation to occur), and not against former property owners who implemented the Grant correctly and complied with its terms while they owned the property (*See* 310 CMR 40.0019). The 1998 Brownfields Law extends formal liability relief to former owners who implemented a Grant correctly, complied with its terms while they owned the property, and did not cause a subsequent owner or other party to violate the Grant. This liability relief covers claims by the Commonwealth for additional response action costs and natural resource damages arising from a violation of the AUL, and covers some third party claims. The 1998 Brownfields Law also establishes a new maximum administrative penalty for violations of AULs (both Grants and Notices) of \$25,000 per violation per day.

Use of a Grant requires Department review and approval, and payment of associated permit fees. Subordination agreements are required from current interest holders. By these agreements, interest holders acknowledge the primacy of the Grant over their interest and agree to comply with the Grant's terms when exercising their right in the affected property. Without such agreement(s), parties whose property interests were created prior to the Grant would not be legally obligated to comply with the terms of the Grant.

Notices

A Notice is not a legally enforceable contract. Rather, it operates as a notice of record at the Registry of Deeds. It identifies activities and uses that are inconsistent with maintaining a condition of No Significant Risk. Unlike a Grant, a Notice does not convey a property interest to the Department. There is no enforceable contract created between DEP and property owners and interest-holders. Although Notices do not legally restrict the use of property as a matter of real estate law, they provide information about property uses and activities related to maintaining conditions of "No Significant Risk" and "No Substantial Hazard" as required by the MCP.

A Notice does not require subordination agreements from interest holders. Also, a Notice does not require advance Department review or approval, or payment of permit fees. Both time and money considerations, and the fact that the property is not technically restricted, may make the Notice the more preferable AUL to some property owners.

Although there is no legally enforceable contract in place, DEP can enforce the terms of a Notice through its enforcement of the MCP requirements. As with a Grant, DEP's policy is to pursue enforcement actions for site activities and uses that are inconsistent with a Notice against the party who implemented the inconsistent uses or activities (or allowed them to occur), and not against former property owners who implemented the Notice properly and complied with its terms while they owned the property (*See* 310 CMR 40.0020). The liability protection provided by the 1998 Brownfields Law (described above) applies to parties who implement a Notice (as well as a Grant) and then transfer ownership of the property.

Selecting an AUL

The property owner should consider the following when selecting a type of AUL:

- degree of control desired by the property owner over activities and uses made of the property;
- nature and legal effects of the AUL on the property;
- extent of filing requirements;
- need/desire for Department review; and
- AUL-related fees.

If a greater degree of control over activities and uses of a property is desired, then a Grant is the more effective AUL. If there is concern about review time, subordination agreements, expenses and the legal restriction of property, then the Notice may be the preferred AUL.

3.4 Grant of Environmental Restriction

Under a Grant, a property owner conveys interests in his or her property to the Department. These interests take the forms of restrictions, easements or covenants. In implementing the Grant, either Form 1072A or 1072C at 310 CMR 40.1099 is used. A Grant must be executed in accordance with the requirements established under 310 CMR 40.1071. The Grant may be used to restrict an entire property or a smaller area within the property. A Grant can restrict both contaminated and uncontaminated land (for the convenience of the property owner).

To obtain DEP's approval, the property owner must submit a Grant application to the Department in accordance with 310 CMR 40.1071. The review is similar to that of a permit application. It involves a determination by the Department that the application is administratively and technically complete. It does not include a review of the adequacy of the response actions (these response actions are subject to DEP audit).

3.4.1 Types of Grants of Environmental Restriction

There are two types of Grants of Environmental Restriction provided by the MCP: a Grant of Environmental Restriction ("Grant") and a Grant of Environmental Restriction for Closed Private Drinking Water Well(s) ("Private Well Grant"). The Grant may be used to restrict activities and uses where there is soil contamination. A Grant may also be used to eliminate the use of a private well for drinking water purposes and the installation of a new drinking water well on a property within the boundaries of the disposal site.

The "Private Well Grant" (Form 1072C) should be used solely to eliminate the use of a private drinking water well on a non-site property located within 500 feet of the disposal site (i.e., the property is not within the boundaries of the disposal site) [See 310 CMR 40.0932(5)(d)1.] A Notice of Activity and Use Limitation *may not* be used to restrict use of a private well (whether the well is on the disposal site or off-site) where such restriction is necessary to meet the requirement of No Significant Risk pursuant to 310 CMR 40.0932(5)(d).

A Grant may be used to restrict site activities and uses in all other situations where an AUL is either required by the MCP or voluntarily imposed by the property owner.

3.4.2 Elements of a Grant of Environmental Restriction

The Grant of Environmental Restriction (Forms 1072A and 1072C) identifies the subject property and specifies restrictions and requirements with which the property owner agrees to comply. The information required by a Grant is listed below in the order in which it appears in Form 1072A:

- The DEP Site Name (if there is one) and DEP Release Tracking Number(s);
- The date on which the Grant is signed by the property owner and the name and address of the property owner ("Grantor");

- First “Whereas” Clause - the name and address of the property owner and the municipality and county in which the property containing the area subject to the AUL is located (if the property owner is a corporation, the state of incorporation and the principal place of business should be included);
- Second “Whereas” Clause” – refers to the legal description of the property containing the area subject to the AUL (which is attached as Exhibit A). If the land is unregistered, the Registry of Deeds recording reference for the survey plan showing the property is required in this clause. If the land is registered, the Land Court Plan reference is required;
- Third “Whereas” Clause (only included if the AUL applies to a portion of the property) refers to the legal description of the portion of the property subject to the AUL attached as Exhibit A-1 and references the survey plan or Land Court Plan for the portion;
- Fourth “Whereas” Clause - establishes whether the area subject to the AUL is the disposal site or is a portion of the disposal site. This clause also refers to a sketch plan showing the boundaries of the area subject to the AUL in relation to the disposal site boundaries, which is attached to the AUL as Exhibit B;
- Fifth “Whereas” Clause - establishes that response actions taken at the site are based on restrictions on human access to OHM remaining at the property, and the restriction of certain activities occurring “in, on, through, over or under” the area subject to the AUL. This clause also establishes that the basis for the restrictions is the AUL Opinion (attached to the Grant as Exhibit C) and requires the date of the AUL Opinion;
- The next paragraph (that begins “NOW, THEREFORE...”)
- The next paragraph (that begins “NOW, THEREFORE...”) establishes that the grant is a gift to DEP pursuant to section 6 of Chapter 21E. The term “QUITCLAIM COVENANTS” means that the grantor is passing whatever title and interest he or she has in the property within the limits of the grant and warrants that he or she has not encumbered the property during his or her term of ownership, yet makes no representation as to the state of title that preceded his or her term of ownership;
- Numbered sections:
 - “1. Restricted Uses and Activities.” establishes the list(s) of Restricted Uses and Activities that may not occur “in, on, upon, through, over or under” the area subject to the AUL. These restrictions are based upon the AUL Opinion, which is attached to the Grant as Exhibit C. The restrictions place limits on uses (e.g., no residential use) and activities, including a prohibition against excavation [paragraph (iii)] and any action that is reasonably likely to result in significant risk or the disturbance of any cap or other cover over the Restricted Area;
 - “2. Permitted Uses and Activities.” lists uses and activities that are allowed in the Restricted Area. The AUL Opinion supports these uses and activities. Clause (iii) of this section provides for an LSP evaluation of activities other than those listed (*See Section 6.1* of this guidance document on “Changes in Land Uses or Activities After an AUL Has Been Implemented”);
 - “3. Obligations and Conditions.” lists specific conditions and obligations established in the AUL Opinion that have to be met to maintain a condition of No Significant Risk in the Restricted Area;
 - “4. Emergency Excavation.” allows for emergency excavation in the Restricted Area (e.g., in order to repair utility lines or respond to a fire or flood) as long as specific conditions are met. The conditions are notifying DEP, limiting the degree of disturbance, undertaking listed measures to reduce risk, and engaging an LSP to oversee the activities and prepare a plan to restore the area following excavation;
 - “5. Easements.” provides DEP, its agents, contractors and employees with a right of access across the property subject to the Grant to inspect the Restricted Area for the purposes of ensuring compliance with the AUL and conducting assessment activities;
 - “6. Severability.” provides that if any provision of the AUL is later found to be invalid by a court, the remaining provisions of the AUL will remain in effect. It also provides that the invalid provision shall be deemed automatically modified, or if it cannot be modified, it will be deemed deleted from the AUL;

“7. Enforcement,” establishes that a violation of the terms of Grant could result in DEP enforcement actions, including the assessment of administrative penalties, or the issuance of civil or criminal penalties and/or “equitable remedies” by a court of law, including an order to remove or modify structures that violate the terms of the Grant;

“8. Provision to Run with the Land,” states that the terms of the Grant attach to the property, meaning that these terms remain in effect for the term of Grant regardless of whether the property ownership changes;

“9. Concurrence Presumed,” is a formal acknowledgment by the Grantor that he/she agrees to the terms of the Grant and that he/she and any of his/her agents, contractors, subcontractors and employees will comply with its terms;

“10. Incorporation into Deeds, Mortgages, Leases and Instruments of Transfer,” establishes that the property owner must either reference or incorporate the Grant in full into any subsequent deeds, easements, mortgages, leases, licenses, occupancy agreements or other instruments that transfer an interest in or right to use the property or restricted area. By signing the Grant, this agreement becomes legally binding;

“11. Amendment and Release,” This clause specifies that the Grant may be amended or released and references 310 CMR 40.1080 *et seq.*, the MCP provisions that address changes in site use and activities after an AUL has been implemented and the procedures for amending or releasing an AUL;

“12. No Dedication Intended,” This clause establishes that the Grant is not intended to constitute a transfer of property ownership of the subject parcel or Restricted Area to the Department;

“13. Term,” the Grantor indicates, by selecting the appropriate term, whether the Grant is “in perpetuity,” meaning continuing forever, or “for a period of ___ years.” In the latter case, the Grantor would indicate the appropriate number of years. In the majority of Grants, the Grant runs “in perpetuity,” unless it is released. Even when the term of a Grant has expired, it is still necessary to obtain from DEP a Release of Grant of Environmental Restriction;

“14. Rights Reserved,” specifies that in accepting the Grant, DEP is not expressing approval as to the adequacy of the Grant or any response actions taken at the disposal site. That is, DEP reserves its rights to pursue enforcement actions related to the area subject to the Grant;

The remainder of the Grant provides for the notarized signature of the Grantor, the notarized signature and seal of the LSP, and finally, the signature of the Commissioner of the Department of Environmental Protection.

- Exhibits (*See Section 4 for detailed instructions for preparing these Exhibits*):
- Exhibit A: a written legal description of the parcel of land that contains the area subject to the AUL,
- Exhibit A-1 (*only needed when the AUL applies to a portion of the property*): a written legal description of that portion to which the AUL applies;
- Exhibit A-2 (*only needed when the AUL applies to a portion of registered land*): a plan of the portion prepared by a Massachusetts Registered Land Surveyor;
- Exhibit B: a sketch plan showing the boundaries of the area subject to the Notice in relation to the boundaries of the disposal site. (This plan does not need to be prepared by a Registered Land Surveyor);
- Exhibit C: an AUL Opinion , in narrative form, written, dated, signed, and sealed by an LSP; and
- Exhibit D: AUL Opinion Form BWSC-114.

A certified Registry copy of the Grant must be submitted to DEP using transmittal form

A Grant may also involve one or more subordination agreements. A subordination agreement is an agreement by which a holder of a prior interest in the property voluntarily subjects his or her interest to the terms of the AUL. Subordination agreements are provided using Form 1072B as set forth in 310 CMR 40.1099. (See Section 4.13 for more on subordination agreements).

See Section 5 for specific instructions for obtaining DEP's approval of a proposed Grant and for recording it at the Registry of Deeds or Land Registration Office.

3.5 Notice of Activity and Use Limitation ("Notice")

Unlike a Grant or a Private Well Grant, a Notice does not convey property interests from the property owner(s) to the Department. Since the Department is not a party to the Notice, Department review and the Commissioner's signature are not required. No fee is required because there is no Department review of a Notice.

A Notice describes activities and uses that are inconsistent with maintaining a condition of No Significant Risk at a property. As with a Grant and Private Well Grant, a Notice is not "implemented" until it is recorded and/or registered by the property owner(s) in the appropriate Registry of Deeds and/or Land Registration Office. The requirements for a Notice are set forth at 310 CMR 40.1074. The applicable Form 1075 is set forth at 310 CMR 40.1099. As mentioned above, a Notice **may not** be used to restrict the installation of a private drinking water well pursuant to 310 CMR 40.0932(5)(d). Only the Grant and Private Well Grant may be used to restrict access to contaminated groundwater in this situation. In accordance with 310 CMR 40.1012(3)(h), a Notice **may** be used *optionally* as a notice of record at the Registry of Deeds of the existence of groundwater contamination at disposal site where a Permanent or Temporary Solution has been achieved. In such instances, it is recommended that the AUL Opinion specify that the Notice is being implemented for that specific purpose and its use is not required by the MCP.

3.5.1 Elements of a Notice of Activity and Use Limitation

Many elements of the Notice are similar to those of a Grant, as described in Section 3.4.2. Since a Notice does not grant property interests to DEP, it does not include terms relating to the conveyance of such interests. Consequently, a Notice is significantly shorter. Like the Grant, the first part of the Notice identifies the disposal site (by Release Tracking Number and site name), the name and address of the property owner, the location of the property, a description of the property, and if applicable, a description of the portion of the property subject to the AUL. The references to recorded survey plans, attached legal descriptions, and AUL Opinion are the same as those for the Grant.

The Notice also sets forth the lists of activities and uses, based on the AUL Opinion, which may or may not occur in the area subject to the AUL and conditions and obligations related to maintaining the area. Those lists appear as: "1. Permitted Activities and Uses Set Forth in the AUL Opinion," "2. Activities and Uses Inconsistent with the AUL Opinion," and "3. Obligations and Conditions Set Forth in the AUL Opinion."

"4. Proposed Changes in Activities and Uses," specifies that any proposed changes in activities and uses at the area subject to the AUL that may result in higher levels of exposure to OHM require an evaluation by an LSP in accordance with 310 CMR 40.1080 *et seq.* (See Section 6.1 on "Changes in Land Uses or Activities After an AUL Has Been Implemented").

"5. Violation of a Response Action Outcome," specifies that activities and uses upon which the Notice is based may not "change at any time to cause a significant risk" without prior evaluation by an LSP and any necessary response action. This paragraph references the requirement in 310 CMR 40.0020 that the owner or operator of a property notify DEP in the event of any such change of activity or use that occurs without prior LSP evaluation and necessary response actions.

"6. Incorporation Into Deeds, Mortgages, Leases and Instruments of Transfer," is similar to the Grant and requires that the Notice be referenced or incorporated into any subsequent "deeds, easements, mortgages, leases, licenses, occupancy agreements" or other instruments that transfer an interest in or a

right to use the area subject to the AUL.

The remainder of the Notice provides for the notarized signature of the property owner and the notarized signature and seal of the LSP. The Notice must also include the same exhibits described in Section 3.4.2 above for the Grant. A certified Registry copy of the Notice must be submitted to DEP using transmittal form BWSC-113.

See Section 4 for specific instructions for completing Form 1075, Appendix C, "Step By Step Through Form 1075," and Appendix J, "Sample Notice".

3.6 Rationale for the AUL Requirements

In establishing the requirements of an AUL, the Department's objective was to create a document that is accurate and clear as to what can and cannot happen at a property in order for a condition of No Significant Risk to exist. Since AULs are legal real estate instruments, it was necessary for the Department to take into account applicable real estate law and practice standards. This approach has been reinforced by the Brownfields Act referenced earlier in Section 3.1. The legal terms and format of the AUL forms, therefore, are similar to other real estate instruments and the requirements for AULs are consistent with current real estate practice.

The MCP reflects the legal requirements and practice standards by requiring that the property owner sign the AUL, that surveys be prepared by a Massachusetts land surveyor and recorded as plans with the Registry of Deeds, that legal descriptions be provided defining the property and the area subject to the AUL, and that what can and cannot happen at the property and the obligations and conditions for maintaining a condition of No Significant Risk at the property be clearly identified.

SECTION 4: PREPARING AN AUL

This section discusses important legal considerations and identifies the necessary steps in preparing an AUL for recording or registration. *See also Appendix C, "Step By Step through Form 1075"; Appendix H, "Activity and Use Limitation Checklist;" and Appendix J, "Sample Notice of AUL."*

As a general note, it is important that both the property owner who is considering using an AUL and his or her LSP understand that **an AUL is a legal document** that functions as a component of a cleanup remedy in accordance with MCP requirements. Since an AUL effectively limits what activities and uses can occur at a property, the property owner needs to be clear about those limits, that is, the area subject to the AUL, the list of prohibited/permitted activities, and conditions and obligations necessary to maintain a condition of No Significant Risk. In this regard, the Department strongly advises the preparer of an AUL to discuss specifically with the property owner the AUL requirements, the consequences of the restrictions under consideration, and the consequences of violating of the AUL. This investment of time up front will help to avoid the time and expense of amending an AUL or terminating and redrafting a new one to provide for uses not included in the original AUL.

This section begins with a discussion of the difference between registered and unregistered land. In drafting an AUL, it is important to recognize whether the property is registered or unregistered land as plan requirements and property descriptions differ between the two.

4.1 **The Difference between Registered and Unregistered Land**

Registered land is real property, the title and boundaries of which have been created by a decree of the Massachusetts Land Court (MGL c. 185). The benefit of such a judicial determination is certainty, as the title and boundaries of a registered parcel of land cannot be challenged (unless it can be proven that fraud was involved in filing the registration petition). With registered land, title vests in the property owner by means of a certificate of title issued in his or her name. The certificate of title, along with the registration plan issued by the Land Court, identify the boundaries of the subject parcel. The certificate also identifies outstanding encumbrances (with a few exceptions). The Land Registration Office in each Registry of Deeds handles the filings for registered land.

The majority of parcels in the Commonwealth of Massachusetts are unregistered. Most transfers of land are recorded in the Registry of Deeds where a deed typically conveys ownership of property from one party to another. There is no judicial determination of title and boundaries with unregistered land. In order to determine the status of title to a parcel of unregistered land, it is necessary to obtain a title examination. Documents affecting unregistered land are recorded at the appropriate Registry of Deeds. You can immediately recognize whether a property is registered by the source of the owner's title. If the owner has obtained title to the property through a certificate of title, then the property is registered. If the owner has acquired title through a deed, then the property is unregistered.

Documents affecting registered land are stamped with a "document" number at the time of their filing. They do not receive "instrument" numbers or book and page numbers. Documents dealing with unregistered land are stamped with an "instrument" number at the time of recording, and ultimately receive a book and page number. Depending upon the particular registry, an unregistered document may receive a book and page number at the time of recording or at a later time. In summary, registered land documents are identified by document numbers while unregistered land documents are identified by instrument/book and page numbers.

Please note that it is not necessary to have a book and page number assigned by the registry at the time of recording to submit the implemented AUL to DEP. Some registries do not provide book and page numbers at the time of recording, but all registries assign an instrument number at that time. A certified Registry copy of the AUL with the instrument number is sufficient for submittal to DEP.

When the Registry of Deeds returns the original of the recorded AUL to the property owner, the original will include the book and page number. DEP requests that the property owner forward the book and page number to the appropriate DEP regional office upon receiving this information.

If the land is registered, the Land Registration Office will keep the signed original AUL. The property owner will only receive a copy of the original.

4.2 Description of the Area Covered by the AUL

An AUL must describe the parcel of land that contains the area subject to the AUL. A written legal description of this parcel of land must be attached to the AUL as Exhibit A. Please note that this requirement can be satisfied by obtaining the description from a survey plan that has already been recorded with the Registry of Deeds, or attaching a copy of the property owner's deed to the AUL as Exhibit A (as long as the deed references a survey plan that was recorded at the Registry of Deeds prior to recording the AUL). If the property is registered land, a copy of the Owner's Certificate of Title may be attached as Exhibit A. An AUL must also include a description of the specific area that is subject to the AUL. The parcel of land and the specific area subject to the AUL may be one and the same. When the remaining contamination is limited to only a portion of the property and the property owner elects to apply the AUL just to that area, then it is necessary to provide a written legal description of that portion in Exhibit A-1 of the AUL. If the entire parcel is subject to the AUL, then the description provided by Exhibit A satisfies both legal description requirements.

Consequently, in crafting an AUL, the property owner needs to decide whether to restrict the entire parcel of land or only a portion of it. Why would a property owner decide to restrict the entire parcel? If a parcel is small in size and has a singular use, for example a service station, it may be less costly and less complicated for AUL compliance to restrict the entire parcel. If a portion of the parcel is to be restricted, an additional survey is necessary for the portion, unless one has been previously recorded at the registry. Depending upon the size of the lot and its versatility, the cost of a survey may be far less than the property value lost in restricting the entire parcel. It may make more sense to carve out restricted and unrestricted areas if the property owner wishes to preserve flexibility in use of the parcel, especially if the restricted area does not comprise a major portion of the property.

Unregistered Land. A "metes and bounds" description is used to describe both the perimeter of the parcel of land and the area subject to the AUL if the land is unregistered. Accordingly, Exhibit A and Exhibit A-1 should contain metes and bounds descriptions. A metes and bounds description uses compass directions and distances. An example of such a description is: "Beginning at a point on the northerly side of Main Street; thence turning and running N 20° 10' 30" W, one hundred (100) feet to ...". Such a description may be obtained from the property owner's deed as long as it is based on a survey plan that was recorded at the Registry of Deeds before the AUL was recorded.

Registered Land. If the land is registered land, it will have a "bounding description" of the parcel's perimeter in Exhibit A instead of a metes and bounds description. A bounding description reads as follows: "NORTHERLY by Old Boston Road, one hundred (100) feet...". Such a description may be obtained from the Owner's Certificate of Title. If the area subject to the AUL is a portion of a parcel of registered land, the portion needs to be described in terms of metes and bounds in Exhibit A-1.

4.3 Describing the Land Covered by an AUL

It is critical that AULs accurately describe the land to which they apply. Therefore, survey plans of the parcel containing the area subject to the AUL and the specific area subject to the AUL must be prepared by a Massachusetts Registered Land Surveyor. A signed and stamped survey prepared by a registered surveyor in accordance with professional land surveying standards is presumed to be accurate. Both the parcel of land containing the AUL area and the AUL area itself must be clearly and accurately defined for purposes of accurately locating the property, avoiding conflicts with abutters about the boundaries of the property and the AUL area, and complying with the terms of the AUL.

4.3.1 Survey of Parcel Containing Area Subject to the AUL

Unregistered Land. The AUL must reference a survey plan showing the boundaries of the parcel of land containing the area subject to the AUL. Check with the appropriate Registry of Deeds to determine whether a survey plan has been recorded. A survey plan that has already been recorded at the Registry of Deeds (i.e., it is “of record” at the registry) may be referenced to describe the parcel of land within which the area subject to the AUL is located. The title of this plan and its recording information (i.e., the Plan Book and Plan Number) should be referenced in the second “Whereas” clause of the AUL. A copy of the property owner’s deed may be used as Exhibit A as long as the deed is based upon a survey plan recorded at the Registry of Deeds.

If a survey plan of the parcel has not been recorded at the Registry of Deeds, then a perimeter survey of the parcel within which the area subject to the AUL is located must be prepared by a Massachusetts Registered Land Surveyor in accordance with the Registry of Deeds plan recording requirements. Plan recording requirements are established pursuant to M.G.L. Chapter 36, Section 13A, as amended. (*See Appendix F, “Requirements for Survey Plans,”* for plan recording requirements).

If it is necessary to prepare such a plan for recording, please note the proper recording sequence of the plan and AUL. The first item to be recorded at the Registry of Deeds is the plan, followed by recording of the AUL. Once the plan has been recorded, insert the recording information into the second “Whereas” clause of the AUL before recording the AUL. Once you have referenced the plan in the AUL, record the AUL. To satisfy the AUL survey requirement for the parcel of land, the survey plan must be recorded with the registry as a plan independently of the AUL, and not only as an exhibit to the AUL.

Registered Land. If the land is registered, then a plan of record already exists, namely the Land Court Plan. The Land Court Plan is referenced in the owner’s Certificate of Title and may be found at the Land Registration Office and/or the engineering department of the Land Court. Only a Land Court Plan can establish the boundaries of registered land. If the land is registered, then it is sufficient to include a reference in the AUL to the Land Court Plan. A copy of the Owner’s Certificate of Title may be attached as Exhibit A;

4.3.2 Survey of Area Subject to the AUL

Unregistered Land. If the AUL applies to a portion of a parcel of land, then a survey plan prepared by a Massachusetts Registered Land Surveyor meeting the plan recording requirements of the Registry of Deeds is also required for the portion of the parcel. It, like the perimeter survey of the parcel, must be recorded with the registry as a plan before the AUL is recorded. The recording information for this plan must be referenced in the third “Whereas” clause of the AUL before the AUL is presented for recording. The survey plan of the portion of the parcel which the AUL applies to should not be attached to the AUL as an exhibit.

If it is necessary to prepare a survey of the perimeter of the parcel because no such plan exists, and a portion of the parcel is subject to the AUL, then it is acceptable to delineate the area subject to the AUL on the perimeter plan. DEP recommends the consolidation of such information on one plan, as a cost saving measure.

Registered Land. If the parcel is registered land, and a portion of the parcel is subject to the AUL, then an 8 1/2" x 11" plan prepared by a Massachusetts Registered Land Surveyor delineating the area subject to the AUL should be attached to the AUL as Exhibit A-2. A survey plan of such area will not be accepted for filing by the Land Registration Office independently of the AUL.

4.3.3 Sketch Plan of Area Subject to AUL in Relation to Boundaries of Disposal Site

An AUL also requires an 8 1/2" x 11" sketch plan showing the boundaries of the area subject to the AUL in relation to the boundaries of the disposal site to the extent that the boundaries of the disposal site are known. This sketch plan is attached to the AUL as Exhibit B. This is the only plan that need not be prepared by a Massachusetts Registered Land Surveyor. Even so, it must contain accurate distances.

If the known boundaries of the disposal site extend beyond the boundaries of the parcel of land containing the area restricted by the AUL, it is recommended that the sketch plan show only that part of the disposal site that lies within the boundaries of the subject parcel as it has been suggested that including a neighbor's property within a disposal site on a plan of record could invite a slander of title claim by the neighbor. It would otherwise be prudent to first obtain an abutter's written consent before showing the abutter's property within a disposal site on a plan of record.

Exhibit B may take the form of an 8½" by 11" copy of the required survey plan of the parcel subject to the AUL (that has been or will be recorded), with a sketch plan showing the boundaries of the disposal site added. Or, Exhibit B can be a separate sketch plan showing the boundaries of the parcel subject to the AUL and the disposal site. Exhibit B does not have to be prepared by a Registered Land Surveyor (*See Appendix J, "Sample Notice of Activity and Use Limitations" for an example of the first approach*).

4.3.4 Summary of Legal Descriptions and Plan Requirements

The requirements for describing the land to which an AUL applies are summarized in Exhibit 4-1.

4.4 Description of Prohibited/Inconsistent Activities and Uses

When identifying prohibited/inconsistent activities and uses, be as specific as possible. Vague and broad prohibitions can result in an overly restrictive document that unnecessarily limits the uses of a property and potentially reduces the property's value.

For example, if the activity to be limited to ensure a condition of No Significant Risk is excavating below a depth of three feet, then that is what should be stated in the AUL. A general prohibition against excavation is unnecessary and overly restrictive. The result of such overly restrictive language is that any excavation is effectively prohibited, including the planting of a shrub.

Over-restricting activities can create additional work. If there is interest in implementing an activity or use that is prohibited by an AUL, then it is necessary to obtain an LSP Opinion stating that such activity is permissible (or that it can be implemented after additional response actions are performed). An amended AUL may be needed if the new activity or use will be a permanent feature of the site. You can avoid additional work and expense by thinking through what specific activities and uses are not appropriate in achieving and maintaining a condition of No Significant Risk. (*See Section 6 on procedures to address changes in use once an AUL has been implemented*).

4.5 Description of Permitted Activities and Uses

In identifying permitted activities and uses, thinking through such activities and uses with the property owner helps avoid inadvertent omission of an activity or use by drafting an

AUL too narrowly. Conversely, broad descriptions of uses and activities should be avoided, as they may create ambiguity. Either situation could result in the need to amend the AUL.
Permitted

EXHIBIT 4-1: HOW TO DESCRIBE THE LAND COVERED BY AN AUL

| LAND AREA | REGISTERED LAND | UNREGISTERED LAND |
|--|---|--|
| <p>1. Parcel containing AUL area (See Guidance Section 4.2)</p> <p>A. Survey Plan (See Guidance Appendix F for Plan Requirements)</p> <hr/> | <ul style="list-style-type: none"> Reference Land Court Plan Number in AUL's 2nd "Whereas" clause | <ul style="list-style-type: none"> If a survey plan has already been recorded, reference the Registry of Deeds' Plan Book / Plan Number in AUL's 2nd "Whereas" clause; OR If a survey plan has not been recorded, have one prepared by an MA Registered Land Surveyor and record it before the AUL is recorded. Reference Registry of Deeds' Plan Book / Plan Number in AUL's 2nd "Whereas" clause. |
| <p>B. Written Description</p> | <ul style="list-style-type: none"> Use bounding language from property owner's Certificate of Title issued by Land Court [attach to AUL as Exhibit A]; and | <ul style="list-style-type: none"> Copy metes and bounds from recorded survey plan [attach to AUL as Exhibit A]; OR Copy metes and bounds from deed referencing a survey plan recorded with Registry of Deeds [attach to AUL as Exhibit A] |
| <p>2. Area to which AUL applies (only needed if this area is a portion of the parcel) (See Guidance Section 4.3.1)</p> <p>A. Survey Plan (See Guidance Appendix F for Plan Requirements)</p> <hr/> | <ul style="list-style-type: none"> Have a survey plan of AUL area prepared by a MA Registered Land Surveyor [attach to AUL as Exhibit A-2] | <ul style="list-style-type: none"> If a survey plan of the AUL area has already been recorded, reference the Registry of Deeds' Plan Book / Plan Number in the AUL's 3rd "Whereas" clause If a survey plan of the AUL area has not been prepared, have one prepared by an MA Registered Land Surveyor. Record plan before the AUL is recorded and reference the Registry of Deeds' Plan Book / Plan Number in the AUL's 3rd "Whereas" clause (Plan does not get attached to AUL as an exhibit). If a survey plan of the parcel containing the AUL area is also being prepared, both the parcel and the AUL area can be shown on the same plan. |
| <p>B. Written Description</p> | <ul style="list-style-type: none"> Copy metes and bounds from survey plan [attach to AUL as Exhibit A-1] | <ul style="list-style-type: none"> Copy metes and bounds from recorded survey plan [attach to AUL as Exhibit A-1] |

| | | |
|---|--|--|
| <p>3.Relationships between AUL area and disposal site (contaminated area) (<i>See Guidance Section 4.3.3</i>)</p> <p>A. Sketch Plan</p> | <ul style="list-style-type: none"> • Prepare a sketch plan showing both the boundaries of the AUL area (from survey plan) and the boundaries of the oil or hazardous material release within the parcel (from site assessment) [attach to AUL as Exhibit B] | <ul style="list-style-type: none"> • Prepare a sketch plan showing both the boundaries of the AUL area (from survey plan) and the boundaries of the oil or hazardous material release within the parcel (from site assessment) [attach to AUL as Exhibit B] |
| <p>B. Written Description</p> | <ul style="list-style-type: none"> • None Needed | <ul style="list-style-type: none"> • None Needed |

Activities and Uses must be consistent with the risk characterization, i.e., these activities and uses can occur and still maintain a condition of No Significant Risk.

In each of the AUL forms, the last clause in the “permitted activities and uses” that follows the list specified for the subject parcel reads as follows: “Such other activities or uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this Paragraph.” This language is in the AUL forms to indicate that activities outside of those listed as permitted may be conducted (as long as they are not expressly prohibited by the AUL), provided that an LSP evaluates the activity or use and an LSP Opinion is submitted to DEP before the new activity or use occurs in accordance with the procedures specified in 310 CMR 40.1080 and described in Section 6 of this document.

4.6 Description of Obligations and Conditions

Clearly spell out obligations and conditions so that present and future interest holders (and anyone else who looks at the document) have a clear understanding of what needs to be undertaken and/or continued at the property in order to maintain a condition of No Significant Risk.

Detail is important when describing obligations and conditions necessary to maintain a condition of No Significant Risk. Identify exactly what needs to be undertaken or maintained so that anyone reading the document has a clear understanding of the responsibilities for ensuring that No Significant Risk is maintained. For example, if a cap is not to be disturbed, and is to be maintained in good repair, then such an obligation should be clearly stated.

In drafting an AUL, it is permissible and appropriate to require that any future excavation occurring accordance with a health and safety and/or soil management plan. The obligation to develop and adhere to such plans should be included in the AUL. In addition, the purpose and elements of these plans should be described in the narrative AUL Opinion. Please note that a health and safety plan and/or soil management plan cannot be used in lieu of an AUL. *For more discussion on referencing health and safety procedures in an AUL, See Section 2.4.*

4.7 AUL Opinion

A narrative AUL Opinion must be prepared by an LSP and attached to the AUL form (1072, 1072C, or 1075) as Exhibit C. This Opinion should provide sufficient detail so that the reader can understand what has occurred at the property requiring the implementation of an AUL. DEP recommends that the Opinion include a brief summary of the incident that resulted in the release. For example, if the release is the result of a leaking underground storage tank, then the Opinion should describe details such as: the size and contents of the tank; the date on which the release was discovered and manner of discovery; the general extent of the release (impact soil and/or groundwater/indoor air/surface water, etc.), and the response actions taken to address the release. The Opinion should also describe the nature of the contamination remaining at the site that is the subject of the AUL (type of contamination, media affected, vertical and horizontal extent, concentrations, exposures of concern).

In drafting his or her Opinion, the LSP should explain why an AUL is necessary to maintain a condition of No Significant Risk. The Opinion should fully identify permitted and prohibited/inconsistent activities and uses as well as obligations and conditions necessary to maintain a condition of No Significant Risk. The lists of permitted, prohibited/inconsistent activities and uses, and conditions and obligations in the AUL Opinion should mirror the contents of the AUL form. Otherwise any discrepancy between the two raises a question as to which is correct. In instances where the MCP does not require the use of an AUL, the Department recommends that the AUL Opinion state that the AUL is not required.

BWSC-114, which is a transmittal form for the narrative Opinion (and not a substitute

for this Opinion), should be attached as Exhibit D.

4.8 Deleting or Changing Language of AUL Forms

The language of the AUL forms cannot be deleted or changed. As the forms are codified in the MCP, they cannot be edited. Changing the language of an AUL form, except to eliminate inapplicable bracketed language or to add a clarifying notation as described in Section 4.9, will invalidate the AUL and any RAO that relies upon it.

4.9 Adding Language to AUL Forms

Language may be added to AUL forms so long as the purpose of it is to provide greater detail and clarity. For instance, it is advisable to include a title reference in the AUL prior to the last paragraph that reads “owner hereby consents to...”. A title reference may include a deed, certificate of title or probate reference. Language may not be added which contradicts or qualifies the standard form language.

4.10 AUL Transmittal Forms

As part of the Grant application, the applicant must file three transmittal forms:
1. a Transmittal Form for Application and Payment (Form 50); 2. an Activity and Use Limitation (AUL) Transmittal Form BWSC-113; and 3. an Activity and Use Limitation (AUL) Opinion Form BWSC-114. (*See Appendix G* for a list of AUL-related forms.) It is important to obtain and submit as part of your Grant package the Application and Payment Transmittal Form in order to ensure proper crediting of your application fee. In implementing a Notice, two transmittal forms are necessary: 1. Transmittal Form BWSC-113; and 2. Transmittal Form BWSC-114.

Note: DEP is currently reviewing the AUL transmittal forms for consolidation.

4.11 Requirement for a Certified Registry Copy of the AUL

A certified registry copy of an AUL, as required under 310 CMR 40.1070, is a copy of an AUL which is issued by the Registry of Deeds or the Land Registration Office and is signed and/or stamped by the registrar stating it is a true copy of the AUL as recorded and/or registered. Any other type of copy is insufficient (i.e., the RAO submittal will not be considered complete).

4.12 Necessary Signatories for Property Owner

The property owner must sign an AUL. The property owner is the party who holds the fee simple interest in the property. If an individual owns the property, then that individual's signature is necessary. If the property is owned by more than one individual (e.g., husband and wife, siblings, etc.), then all owners must sign the AUL.

A ground lessee, that is a lessee whose lease term is ninety-nine years or fewer, may not sign an AUL. No form of restriction signed by a ground lessee will satisfy MCP requirements. (*See also Section 1.5.*)

The following signatures are necessary when the property owner is not an individual, but is one of the following entities:

Corporation. It is necessary to obtain a corporate vote authorizing the signatory to sign the AUL on behalf of the corporation unless the signatory(ies) holds both an executive and fiscal office. Specifically, the president or vice-president (executive) and the treasurer or assistant treasurer (fiscal) must sign it: one person may hold both types of offices (*See MGL c. 155, section 8*). Also, a clerk's certificate of incumbency is necessary to confirm that the signatory holds his or her respective office as identified. The notary's acknowledgement for the property owner's signature may be modified to reflect the capacity in which the property owner is signing (e.g., as

a corporate officer, a trustee, a partner, etc.). The language in the AUL forms is most appropriate for parties who hold a fee simple interest in the property.

Limited Partnership. It is necessary that the general partner sign the AUL, unless the limited partnership agreement authorizes another party to sign. If so, the agreement should be submitted with the AUL.

Limited Liability Corporation ("LLC"). It is necessary to obtain the signature of the person(s) named in the Certificate of Organization as authorized to execute real estate documents.

Limited Liability Partnership ("LLP"). It is necessary to obtain the signature of the person authorized in the partnership agreement registration to execute real estate documents.

Condominium - Necessary Signatures when Area Subject to AUL is Common Area. If documents are of record at the Registry of Deeds authorizing trustees or directors of a condominium to execute documents which affect common area on behalf of the unit owners, then an AUL may be signed by those authorized individuals. If no such document exists of record, then it will be necessary to obtain the signatures of all unit owners.

Trusts. If title to the property is held by the trustee(s) of a trust, then it is necessary that the AUL be signed by the trustee(s) authorized under the declaration of trust to execute real estate instruments. If the trust is not recorded in full, the relevant language of the trust should be submitted with the AUL.

Municipality. If it is a town, then the Board of Selectmen should sign. If it is a city, depending upon the type of charter held by the city, then the Mayor or City Manager may sign.

Please note that when any of the above entities own the property subject to the AUL, it is recommended that a copy of the documentation indicating who is authorized to sign the AUL be submitted to DEP along with the certified copy of the AUL. If this documentation is not provided, it should be made available to DEP upon request.

LSP Signing on Behalf of Property Owner

An LSP may not sign an AUL on behalf of the property owner without first obtaining a power of attorney authorizing him or her to do so. The power of attorney must be recorded with the AUL.

4.13 Subordination Agreements

A subordination agreement is an agreement under which a prior interest holder (e.g., mortgagee, easement holder, or lessee) agrees to subordinate his or her interest to a subsequently created interest (*See Section 3.3* above). If the prior interest holder does not subordinate his or her interest, then he or she is not obligated to recognize or comply with the terms of the subsequently created interest.

Grants: If there are existing record interests in an area restricted by a Grant, then subordination agreements from the holder(s) of these interests must be obtained by the property owner and submitted to DEP as part of the Grant application package. Form 1072B must be used for subordination agreements. If the Restricted Area is a portion of a parcel, then subordination agreements must also be obtained from any holders of interests in the parcel whose activities could be affected by the Grant (e.g., a utility easement on the larger parcel but not in the AUL area may allow utility workers to move equipment over the AUL area to reach the easement).

A subordination agreement should be recorded and/or registered immediately after the recording or registering of the Grant. Without subordination agreements, existing interest holders are not legally obligated to recognize or comply with the terms of the AUL. If the land is unregistered, then the signed original Subordination Agreement should be returned to the

Department after it has been recorded. If the land is registered, the signed original Subordination Agreement will be retained by the Land Registration Office, and a certified copy should be forwarded to the Department

There are instances when the AUL clearly does not affect the interests of a prior interest holder. For example, a Private Well Grant restricting the installation of a drinking water well does not affect a utility easement holder's right to access the property and install or maintain utility lines so long as the terms of the easement do not affect the closed well. A subordination agreement, therefore, is not do necessary in this case.

Notices of AUL: Currently, there is no requirement for subordination agreements where a Notice of Activity and Use Limitation is being implemented. It is recommended, however, that the property owner provide written notice of the AUL to any existing interest holder by certified mail, return receipt requested, and if possible, obtain agreements from such interest holders that they will comply with the terms of the AUL if these interests could be affected by the AUL (e.g., by conditions placed on access or excavation).

SECTION 5: AUL RECORDING AND PROCESSING REQUIREMENTS

This section addresses the procedural requirements for implementing an AUL after it has been properly prepared and signed by the property owner and the LSP.

Exhibit 5-1 describes the steps required to implement a Notice of Activity and Use Limitation. Once the Notice form has been filled out (with all the relevant exhibits) and signed, the next step is recording or registering the Notice with the appropriate Registry of Deeds or Land Registration Office. For a Grant of Environmental Restriction, the next step is DEP's review of the Grant. After the Grant has been reviewed by the Department and signed by the Commissioner, the Grant is recorded and/or registered in the same manner as the Notice.

5.1 DEP Review of a Grant or Private Well Grant

Once a Grant or Private Well Grant has been prepared, it must be submitted to the Department for review, accompanied by a title certification, copies of outstanding encumbrances, plans of record, and the applicable permit application fee (*See Section 5.2 below*). The review performed by DEP (*See DEP's Fee Regulations, 310 CMR 4.04(10)*) has two steps:

5.1.1 Grant Application Requirements

The requirements of a Grant application apply to both the Grant of Environmental Restriction (Form 1072A) and the Grant of Environmental Restriction for Closed Private Drinking Water Well(s) (Form 1072C) and are set forth in 310 CMR 40.1072. The application must include:

1. A completed Form 1072A or Form 1072C (both forms are set forth at 310 CMR 40.1099), including the exhibits described in Sections 4.3 and 4.7 above.
2. Any necessary subordination agreements using Form 1072B set forth at 310 CMR 40.1099;
3. A title certification and copies of outstanding record encumbrances (e.g., mortgages, easements, liens) and any plans of record. (*See Appendix D, "Sample Title Certification"*) and;
4. A check in payment of the permit application fee submitted with a "Transmittal Form for Application and Payment," (available from DEP offices). The permit code for this transmittal form is BWSC 40.

A complete Grant Application must be submitted to DEP using transmittal form BWSC-113.

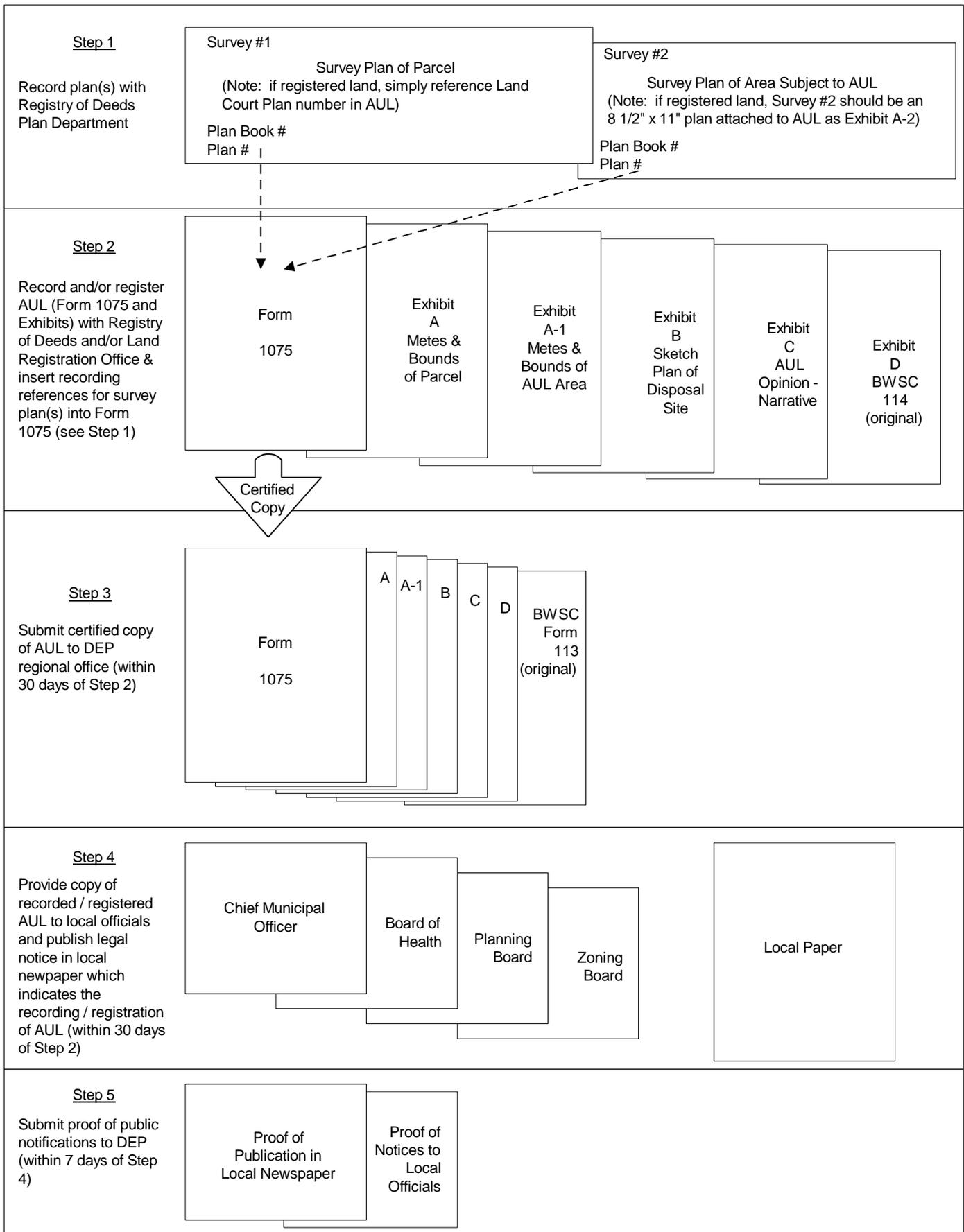
5.1.2 DEP's Review Process

DEP uses a two-step process to review applications for Grants and Private Well Grants:

Step 1: Administrative Completeness

The initial review determines whether the application is complete; that is, whether all necessary documents have been submitted to DEP. Such documents include the signed original of the Grant and any associated documents, such as subordination agreements, survey plans, title certification, title documents and any corporate votes and certificates of incumbency. The Department must conduct this review within 30 days after it receives the submittal. If the submittal is incomplete, DEP provides the party filing the Grant application with a written notice of deficiencies and 15 days within which to provide the missing information. Failure to provide this missing information within this time frame is considered a withdrawal of the application. (Note: These time frames may be changed by mutual written consent of DEP and the applicant.)

A second administrative completeness review is conducted for the supplementary material in which DEP determines that all necessary material has been submitted. DEP will not review or process an incomplete application.



Step 2: Technical Review

This stage involves a review of the Grant documents, survey plans and title certification to determine whether they are correct as to substance and form. DEP has 75 days in which to conduct this review. If the submittals are found to be satisfactory, then DEP will approve the Grant application. If there are technical deficiencies, DEP will send a written notice of the deficiencies to the party filing the Grant application. A second technical review takes place upon submission of the supplementary material. DEP has 45 days from the day after receipt of the supplementary material to complete the review. This review is limited to the sufficiency of documents and not the sufficiency of the response action. A decision to approve or not approve the Grant is made upon completion of the second technical review (or the first if no supplemental information was needed). DEP then sends a written statement indicating whether the Grant has or has not been approved to the applicant. (Note: These time frames may be changed by mutual, written consent of DEP and the applicant.)

Once DEP staff decides that the Grant can be approved, the Grant is forwarded to the DEP Commissioner for approval and signature. Once the Commissioner has signed the Grant, DEP will return it and any other associated documents, plans and subordination agreements to the applicant so that they may be recorded and/or registered. The Grant does not become effective until it has been recorded or registered.

5.2 Grant Fee Requirements

Permit Application Fee. The permit application fee for DEP's review of the Grant is set forth in DEP's fee regulations at 310 CMR 4.04(10)(4)(g). The permit application fee is **\$1050** [See 310 CMR 4.10(10)(g)]. A permit applicant may apply for consolidated review of multiple Grant or Private Well Grant applications and a special fee if the application meets the following criteria [See 310 CMR 4.10(10)(g)(4)(b)]:

1. the application covers Grants for 6 or more separate parcels which comprise, in whole or part, a single disposal site or 6 or more Private Well Grants that are related to a single disposal site;
2. each of the proposed Grants references a single AUL Opinion in accordance with 310 CMR 40.1071(2)(f); and
3. the prohibited and permitted activities and uses, and the obligations and conditions stated in the respective Grants are identical for each of the parcels.

With respect to consolidated Grant applications, DEP must refund any portion of a permit application fee that exceeds the agency's actual costs for review and approval. DEP's costs are calculated by applying the method used to calculate Response Action Costs in 310 CMR 40.1220(1) and the Indirect Rate set forth in 310 CMR 40.1221(2). Regardless of DEP's actual review costs, the fee for reviewing a consolidated application for multiple Grants cannot be less than \$1050, and cannot exceed \$6,000.

DEP's review is also necessary to amend, release, or terminate a Grant of Environmental Restriction (*See Section 6* for information on amending or releasing/terminating AULs). The process for these reviews is generally the same as the grant review above. The permit application fee for DEP's review of an Amendment of Environmental Restriction is **\$850**; and the permit application fee for a Release of Environmental Restriction is **\$650**.

5.3 Recording and/or Registration Requirements for All AULs

Within thirty days of recording and/or registering an AUL with the appropriate Registry of Deeds and/or Land Registration Office, the property owner must submit to the Department a certified Registry copy of the AUL. The certified Registry copy is necessary to verify that the document submitted to DEP is an exact copy of the AUL as recorded/registered. It is insufficient to submit an uncertified photocopy of the AUL. It must be a certified Registry copy, which is stamped by the Registrar of the Registry of Deeds.

If the land is registered land, the certified Registry copy will include a document number. If the land is unregistered land, the certified copy will include an instrument number and/or book and page number.

Pursuant to 310 CMR 40.1070(3), an AUL is not fully implemented or effective until it has been recorded and/or registered with the appropriate Registry of Deeds or Land Registration Office. An RAO Statement that relies upon the implementation of an AUL is not complete or effective until DEP has received a certified Registry copy of the AUL, as specified in 310 CMR 40.1056(2)(g) and 40.1070(3).

5.4 Public Notice Requirements

AULs are subject to public involvement requirements set forth at 310 CMR 40.1403(7). These requirements establish that within thirty days of recording and/or registering an AUL, a copy of the recorded and/or registered AUL must be provided to the following four officials in the community(ies) in which the property subject to the AUL is located:

- the Chief Municipal Officer;
- the Board of Health;
- the Zoning Official; and
- the Building Code Enforcement Official

A legal notice must also be published in a newspaper that circulates in the community in which the property subject to the AUL is located, indicating that the AUL has been recorded and/or registered. A copy of the legal notice must be submitted to the Department within seven days of its publication. It is recommended that the actual newspaper clipping, showing the date of publication, be submitted to DEP to confirm its publication. (*See Appendix E, Legal Notice of an Activity and Use Limitation*, for the legal notice format.)

SECTION 6: AFTER AN AUL HAS BEEN IMPLEMENTED

After an AUL has been recorded and/or registered, changes in circumstances at the disposal site or errors in the original AUL may result in the need to correct, amend or terminate the original AUL. This section addresses issues and procedures that apply once an AUL has been implemented, including: evaluating changes in site uses and activities with respect to an existing AUL; correcting and amending AULs; terminating AULs; referencing AULs in lease agreements; and DEP audits of disposal sites with AULs.

6.1 Changes in Land Uses, Activities or Other Conditions after an AUL has been Implemented

To remain in compliance with the MCP, the owner of a property for which an AUL has been recorded or registered has an ongoing obligation to comply with the terms of the AUL. If an activity or change in the use of the area subject to the AUL is being considered and the new activity or change is not within the uses or activities specifically permitted by the AUL, then an LSP must evaluate the new activities and/or uses using the MCP risk characterization process to determine whether a condition of No Significant Risk would be maintained with the new use or activity or whether additional response actions would be needed [310 CMR 40.1080(1)] to ensure a level of No Significant Risk. An LSP Opinion based on this evaluation must be submitted to DEP **before** the activity or change in use takes place.^{11,12} This Opinion should be submitted with documentation of the supporting risk characterization.

The regulations take a conservative approach by requiring an evaluation of any activity or use that is not identified as permitted in the AUL. In cases where the AUL does not clearly include an activity or use, an evaluation by an LSP is necessary. This requirement underscores the importance of developing an AUL that addresses the likely range of future activities and uses at a site. “Specifically permitted” does not mean, however, that the exact type of business needs to be listed in the AUL in order for a contemplated use to be considered permitted under the AUL. For example, if the AUL permits “any commercial and industrial uses of the site that do not involve excavation,” then a change of use from a shoe store to a drug store would be considered consistent or “specifically permitted.” However, where an AUL allows for “commercial and industrial use” and the addition of on-site day care at an industrial facility is being considered, the day care is not clearly included within the broad “commercial and industrial use” description. Consequently, an LSP must evaluate such use using the MCP risk characterization process to determine whether allowing day care on the site would be consistent with maintaining a condition of No Significant Risk.

If, after an evaluation of a change of use and/or activity, a property owner abandons his or her plan to proceed with the change, it is not necessary to file an LSP Opinion. That is, the Opinion is only required if the change is to occur.

Keep in mind that activities and/or uses that are not within those listed in the AUL must be evaluated by an LSP. For example, a property owner is not proposing to change the use of the property as a marina, but is proposing to build a warehouse for boat storage. If the AUL for the property does not identify the excavation and construction necessary to build the new structure as permitted activities, then an LSP must evaluate these activities. Other situations will require an evaluation of both a change in use and the activities that are needed to prepare for the new use. For example, where the only permitted use of the area subject to the AUL is a paved parking lot, the property owner wishing to landscape a corner of the area for use as an employee picnic area, must have an LSP evaluate both the use of the area for picnicking and the activities (asphalt removal and soil excavation related to landscaping) needed to prepare for the change in use.

¹¹ 310 CMR 40.1080(2) indicates that this Opinion should be provided “on a form prescribed by the Department”. To date, however, DEP has not developed such a form. This LSP Opinion, therefore, should be submitted to DEP in narrative form (it can be in the form of a letter), and dated, signed and sealed by the LSP. This submittal should reference that the Opinion is being provided pursuant to 310 CMR 40.1080.

¹² 310 CMR 40.1080(2) incorrectly states that the LSP Opinion should indicate “whether the proposed changes in Site Activities and Uses **will exceed a reporting threshold pursuant to 310 CMR 40.0300**”[emphasis added]. The LSP Opinion should instead indicate whether, based on an evaluation of the proposed activity or use using the MCP risk characterization process, a condition of No Significant Risk will continue to exist. DEP intends to correct this language accordingly.

For activities that involve response actions (e.g., excavation of contaminated soil, treatment or containment measures, or additional testing to better define contaminant levels), follow the procedures outlined in Section 6.1.1 below.

6.1.1 If the Contemplated Change in Activities or Uses Involves Response Actions

If the LSP concludes that the new activity and/or use is inconsistent with maintaining a condition of No Significant Risk and additional response actions are needed before the level of cleanup at the site is sufficient to allow the new use, then, in accordance with 310 CMR 40.1080(3), the procedure below must be followed before undertaking the new use or activity. In this situation, the new use or activity could create a new exposure to contamination remaining at the site; without additional response actions, the site would no longer have a level of No Significant Risk. Plans for any response actions required to maintain a condition of No Significant Risk need to be submitted to DEP as follows:

1. The LSP Opinion submitted in accordance with 310 CMR 40.1080 should specify what additional response actions are necessary;
- Tier I and Tier II sites - In accordance with 310 CMR 40.0581 and 40.0582, for any classified disposal sites with an AUL, parties must have an effective permit (Tier I) or effective Tier II Classification prior to commencing response actions to allow for a change in site use or activity or the termination of the AUL. If the additional response actions will be undertaken and completed while the permit or classification remains in effect (i.e., within 5 years from the effective date of a Tier I permit or an initial Tier II Classification), then there is no requirement to apply for a permit extension or classification [See 310 CMR 40.0550 and 310 CMR 40.0560]. According to 310 CMR 40.0581(2) and 310 CMR 40.0582(3), parties with an effective permit or classification, respectively, must provide DEP with written notice prior to performing response actions.

If the permit/classification has expired, a permit/classification extension must be obtained before the response actions are performed. The permit/classification extension should be submitted with the LSP Opinion.

In addition to providing written notice or obtaining a permit/classification extension, either a Release Abatement Measure Plan or Remedy Implementation Plan for the additional response actions should be submitted. Except at Tier IA sites, these plans are not subject to DEP approval for Tier I or Tier II sites. Please note that the public notice(s) required for these actions should be provided as appropriate (See 310 CMR 40.1403). If the site was designated as a PIP site, then the provisions of the Public Involvement Plan for public review and comment on the plans should be followed.

- Disposal sites that have not been classified - For disposal sites where an RAO Statement was submitted with an AUL before Tier Classification and an activity or use is proposed that requires a remedial action to support a change in use, the LSP Opinion should be accompanied by a Release Abatement Measure Plan (RAM) and a RAM fee (if the proposed actions fall within the allowable scope of a RAM in terms of their scale, complexity, or the time necessary to complete the work); [See 310 CMR 40.0442]. This plan is subject to presumptive approval by the Department. If the scope of the response actions needed to restore the site to a condition of No Significant Risk are outside of the allowable scope of a RAM in terms of their scale and/or complexity then a Tier Classification and Remedy Implementation Plan should be submitted to DEP before response actions can be performed;
2. The AUL must be amended to include the proposed Site Activities or Uses; and
 3. A revised RAO Statement must be submitted to DEP along with supporting documentation to reflect any changes from the previous RAO.

6.1.2 If the Contemplated Change in Activities or Uses Does Not Involve Response Actions

If an LSP evaluates a contemplated change in use and concludes that no further cleanup is needed to provide for the new use, it is recommended that the AUL be amended to add the contemplated use to the list of permitted uses particularly if the duration of the activity is longer than a few months or is likely to reoccur (i.e., not a one time event). By doing so, both DEP files and the AUL itself will be current, and confusion as to whether the terms of the AUL are being met can be avoided.

The occurrence of an activity/use that is not within the uses or activities specifically permitted by an AUL, without prior evaluation by an LSP and the performance of necessary response actions to restore or maintain a condition of No Significant Risk, is a violation of the MCP and is subject to enforcement by the Department. See 310 CMR 40.0019, “Violations of Environmental Restrictions” and 310 CMR 40.0020, “Violations of Response Action Outcomes”.

6.2 **Correcting Errors in an Implemented AUL**

If an AUL that has been recorded and/or registered contains errors, steps must be taken to correct the errors. The mechanism used to correct the AUL depends upon the nature of the error. The different mechanisms include recording a “Confirmatory” AUL or terminating/releasing the AUL and recording a new, corrected AUL.

6.2.1 **Non-Substantive Errors**

A **Confirmatory AUL** may be used to correct minor errors and omissions in the original AUL, or in any Amendment or Termination. A Confirmatory AUL may not be used, however, if the AUL applies to registered land. The Land Registration Offices do not accept confirmatory documents. In such cases, errors will have to be corrected by terminating the AUL and filing a new one.

Examples of non-substantive errors include misspelled names, missing lines in the legal description of the property and inadvertent omission of exhibits. A Confirmatory AUL is also appropriate in the instance where a permitted or restricted use, or an obligation or condition mentioned in the AUL Opinion attached to the AUL, is inadvertently omitted in the AUL form in the respective category.

A Confirmatory AUL cannot be used to add or delete activities or uses that are not supported by the AUL Opinion; an amendment must be used instead.

The word “Confirmatory” should be typed next to the title of the AUL so that it reads “Confirmatory Notice of Activity and Use Limitation,” “Confirmatory Amendment to Notice of Activity and Use Limitation,” etc.. A Confirmatory AUL should repeat word for word the language of the original AUL, but should not repeat the error. The error should be deleted and the correct information substituted. A paragraph should be added at the end of the confirmatory AUL Amendment, or Termination (before the signatures), stating that the document is a confirmatory document executed to correct an error made in the original instrument, and the error should be specifically identified.

The Confirmatory AUL must be recorded with the Registry of Deeds by requesting that the Registry marginally reference the Confirmatory AUL on the original AUL Amendment or Termination. A marginal reference is a note placed on a recorded document that indicates that the document is affected by another document and where that document can be located by book and page numbers. A certified Registry copy of the Confirmatory AUL as recorded must be forwarded to the Department within thirty days of recording.

6.2.2 **Substantive Errors**

If substantive errors are discovered in an implemented AUL, it is necessary to terminate the defective AUL through a **Statement of Termination of Notice of Activity and Use Limitation**. Substantive errors include, but are not limited to: the wrong party named as the property owner, the AUL was not signed by all property owners; the property description is for the wrong parcel; the survey and sketch plan requirements were not met; and other errors of this nature.

The Statement of Termination is set forth in *Appendix I*, along with a Fact Sheet stating DEP’s position regarding its use. An LSP Opinion is not necessary to implement a Statement of Termination. Also, there are no public notice requirements. A new AUL must be recorded immediately after recording the Statement of Termination. A certified Registry copy of the Statement of Termination should be forwarded to DEP. Also, the Statement of Termination and the

new AUL should be marginally referenced on the terminated AUL.

Amendments to AULs cannot be used to correct substantive errors in implemented AULs.

6.3 Amendments

An amendment of an AUL is required where an LSP determines that the terms of the original AUL (i.e., permitted activities, restricted/inconsistent activities, or obligations and conditions) need additions or modifications to ensure maintenance of a condition of No Significant Risk. An AUL may only be amended on the basis of an LSP Opinion. In situations where additional remedial actions are necessary (as described in Section 6.1.1), remedial actions must be completed prior to recording the amendment.

Amendments to AULs may be used to increase the area restricted under the AUL when the additional area is located within the same parcel as the area identified in the original AUL. An amendment to an AUL may not be used to decrease the size of the area subject to the AUL. In order to decrease the size of the restricted area, it will be necessary to release or terminate the AUL and record and/or register a new AUL for the decreased area.

The procedures for amending an AUL are set forth at 310 CMR 40.1081 and are described below. Amending a Grant or Private Well Grant requires DEP review and approval, and payment of a fee. The amendment of a Notice does not require the Commissioner's signature or payment of a fee.

How to Amend Grants and Private Well Grants

Amending a Grant requires the use of the Amendment to Grant of Environmental Restriction Form 1082A set forth at 310 CMR 40.1099. The amendment must be reviewed and approved by DEP. It is necessary to attach to Form 1082A: a written legal description of the property (Exhibit A); an AUL Opinion (Exhibit B) explaining the proposed changes in Site Activities and Uses and how those changes are consistent with the requirement to maintain No Significant Risk; and BWSC-114. The AUL Opinion must be prepared, signed and sealed by an LSP in accordance with 310 CMR 40.1082. The amendment application must also include a title certification, copies of pertinent instruments and plans, and payment of an application fee. If applicable, subordination agreements must be obtained using Form 1072B set forth at 310 CMR 40.1099. It is also necessary to include in the application a Transmittal Form for Application and Payment and BWSC Forms 113. The fee for amending a Grant is \$850.

The amendment must be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of the amendment, including instrument and/or book and page number, and/or document number must be submitted to the Department within thirty days of its recordation and/or registration. As with the Grant and the Private Well Grant, it is necessary to comply with public involvement requirements set forth at 310 CMR 40.1403(7); (*See Section 5.4 above*).

How to Amend Notices

Amending a Notice requires the use of Form 1082B set forth at 310 CMR 40.1099. As with the Notice itself, the amendment does not require Department review or the signature of the Commissioner. It is necessary to attach to the Amendment to Notice of Activity and Use Limitation: a written legal description of the property (Exhibit A); an AUL Opinion prepared, signed and sealed by an LSP in accordance with 310 CMR 40.1081 explaining the proposed changes in Site Activities and Uses and how those changes are consistent with the requirement to maintain No Significant Risk (Exhibit B); and BWSC-114. The amendment must be filed for recording and/or registration with the appropriate Registry of Deeds and/or Land Registration Office. Within thirty days of recordation and/or registration, a certified Registry copy of the same including the instrument and/or book and page number, and/or document number, must be submitted to the Department using transmittal form BWSC-113. As with the Notice, it is necessary to comply with the public notice requirements set forth at 310 CMR 40.1403(7); (*See Section 5.4 above*).

6.4 Releasing or Terminating AULs

Based upon an AUL Opinion prepared by an LSP, a property owner can release or terminate an AUL that is no longer necessary to maintain a condition of No Significant Risk or No Substantial Hazard.

This scenario is most likely to occur where additional cleanup or other response actions eliminate the need for the AUL. Grants and Private Well Grants can be released only by the Department. A Notice is terminated by the property owner.

If additional remedial actions are necessary to achieve a level of cleanup that would allow for the release or termination of an AUL, such remedial actions must be undertaken in accordance with the MCP. As outlined in Section 6.1.1, step 1, response actions must be performed under an effective permit/Tier II Classification or in accordance with an approved RAM plan. This remedial work must be completed prior to recording a release or termination of the AUL. A revised RAO Statement must be submitted to DEP along with supporting documentation to reflect any changes from the previous RAO.

How to Release a Grant (Including Private Well Grant)

Releasing a Grant requires the use of Form 1084A that is set forth at 310 CMR 40.1099. Because the Department is the party signing the Release, DEP must first review the Release before signing it. A written legal description of the property (Exhibit A), an AUL Opinion prepared by an LSP (Exhibit B), and BWSC-114 must be attached to the Release and the applicable fee must be submitted in accordance with 310 CMR 40.1083 and 310 CMR 4.10(i). The Transmittal Form for Application and Payment and BWSC-113 must be used to submit the application to DEP. The fee for this application is \$650.

The Release must be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of the same, including an instrument number and/or book and page number, and/or document number, must be submitted to the Department within thirty days of recordation and/or registration. As with the original Grant, it is necessary to comply with the public notice requirements set forth at 310 CMR 40.1403(7); (*See Section 5.4 above*).

How to Terminate a Notice

Terminating a Notice requires the use of Form 1084B set forth at 310 CMR 40.1099. A written legal description of the property (Exhibit A), an AUL Opinion developed by an LSP (Exhibit B), and BWSC-114 must be attached to the Termination. BWSC-113 must be used to submit the Termination to DEP. No DEP approval is required.

The Termination must be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of the same, including the instrument and/or book and page number, and/or document number, must be submitted to the Department within thirty (30) days of recordation and/or registration. As with the Notice, it is necessary to comply with the public notice requirements set forth at 310 CMR 40.1403(7); (*See Section 5.4 above*).

See Section 6.2.2 above on terminating a Notice that contains substantive errors and replacing such defective Notice with a new AUL.

6.5 Incorporation of AUL into Deeds, Leases and Other Instruments of Transfer

Both the Grant and the Notice require that any “deeds, easements, mortgages, leases, licenses, occupancy agreements, or other instruments of transfer” of an interest in the property or right to use the property incorporate the AUL in full or by reference. Accordingly, any lease, easement, etc. that is created after an AUL has been recorded or registered must either include a copy of the AUL or reference the AUL (by date, Registry, and instrument/Plan Book and Page Number or document number). This requirement is intended to ensure that people with legal rights to use the property other than the owner are aware of the existence of the AUL, the specific limitations placed on the use of the property, and conditions and obligations necessary to maintain No Significant Risk.

6.6 Maintenance Contracts and Property Managers

While not required by the MCP, where the area subject to the AUL is maintained by a contractor (e.g., landscaper), the maintenance contract/agreement should reference the AUL, and its terms should be discussed with the contractor to ensure that he/she understands the limitations. By providing this information to the contractor, the property owner helps to ensure that the maintenance workers are aware of and protected from exposure to the remaining contamination. Likewise, any employee of a

company located on a site with an AUL who is responsible for managing or maintaining the property should also be familiar with the terms of the AUL.

6.7 DEP Audits of Disposal Sites with AULs

The Brownfields Act (Chapter 206 of the Acts of 1998, Section 43) requires that DEP conduct targeted audits of all sites for which an AUL has been recorded or registered. In an audit of response actions at a disposal site with an AUL, the Department may evaluate whether the AUL has been properly implemented and whether the activities and uses occurring in the area subject to the AUL are consistent with the terms of the AUL as recorded. The MCP currently allows DEP to initiate a random audit of a site with an AUL at any time (prior to and beyond the date of the RAO) to determine whether the AUL was properly implemented and whether the activities and uses comply with the AUL (*See* 310 CMR 40.1110(2).) Please note that DEP is currently embarking on an initiative to conduct targeted audits of all sites for which AULs have been filed to support a Class A or B Response Action Outcome. In addition, the agency is currently considering a number of revisions in its audit program to enhance its efficiency and effectiveness.

SECTION 7: HYPOTHETICAL AUL CASE STUDIES

The following hypothetical case studies present common examples of disposal site conditions that require the application of an AUL to support an RAO Statement. The case studies which concern disposal sites where an AUL is **required** (Case Studies 1 through 6) are structured as AUL Opinions (Exhibit C) with accompanying AUL language for Form 1075 (Notice) or Form 1072A (Grant). The case studies which discuss disposal sites where use of an AUL is **recommended** (Case Studies 7 and 8) provide a narrative description of site conditions and recommended AUL language for Form 1075.

The AUL Opinions illustrate the type of information DEP recommends including and a format for presenting it. The MCP requires that an AUL Opinion specify why the AUL “is appropriate to achieve and/or maintain a level of No Significant Risk....” In order to effectively communicate why the AUL is needed, the AUL Opinion should describe:

- the events/site use which resulted in the contamination and any remedial actions taken to remove sources/OHM;
- site conditions (types, concentrations, and approximate depth/area extent of remaining OHM);
- the Method of Risk Characterization used; and
- the underlying rationale for the need to implement an AUL at the particular disposal site.

With respect to the AUL forms, **recommended language** is provided for: (1) permitted activities and uses; (2) activities and uses inconsistent with the AUL Opinion (i.e., restricted and/or prohibited); and (3) obligations and conditions necessary to maintain a level of No Significant Risk at the disposal site. Examples of problematic language, drawn from AULs reviewed by DEP, are also provided and identified as language that is **not recommended**.

As discussed in Section 4.7, the narrative AUL Opinion and the language in the AUL forms should be readily understandable to a reader who is unfamiliar with the disposal site history and conditions, or with the purpose and requirements of the MCP. When a MCP term is used, the meaning of the term in the context of how it is used should be explained. The AUL Opinion should also provide sufficient information such that another LSP, perhaps hired by a prospective purchaser, can understand the connection between the MCP risk characterization and the AUL Opinion.

When reviewing these case studies, it is critical to realize that the listed permitted and inconsistent activities and uses, as well as the obligations and conditions of the AUL, stem from the risk characterization method used (i.e., Method 1, 2 or 3), the assumptions made regarding the exposure pathways at the given disposal site, and the findings of the Risk Characterization. Also note that these case studies describe scenarios at the point in the response action process where a decision has been made to implement an AUL. It is assumed that for those scenarios where remedial actions were performed, a feasibility evaluation has been conducted and has determined that the achievement of background conditions at the site is not feasible. Furthermore, it is also assumed that parties have completed a thorough process of selecting the most appropriate remedy for the disposal site and have selected a remedy that includes an AUL. In presenting these scenarios, DEP is not advocating the implementation of AULs as the best alternative for similar disposal sites. Rather, the case studies merely provide guidance on how to craft an AUL for these situations, should a party elect to use one.

Each case study is strictly hypothetical and focuses upon particular contamination issues and risk characterization approaches commonly associated with disposal sites where AULs have been implemented. The case studies are not intended to provide comprehensive discussions of environmental concerns and/or risk characterization issues that could exist for the hypotheticals presented.

Appendix J provides an example of a complete Notice of Activity and Use Limitation package which includes: AUL Transmittal Forms BWSC-113 and BWSC-114, Notice of AUL Form 1075, Exhibits A, A-1, B, and C, a legal newspaper notice, and a notification letter to local officials.

CASE STUDY 1: Soil Contamination at Depth, Unpaved

***Preface:** In general, DEP believes the complete prohibition of excavation in a designated AUL Area is impractical, particularly at locations where utility lines are present or where their installation or the performance of construction work is reasonably foreseeable. Nevertheless, the presence of soil contamination which does not meet a condition of No Significant Risk for future foreseeable activities and uses creates the need to implement an AUL to restrict certain activities and uses, such as excavation, which could result in exposure to contaminated soil.*

To a large extent, the need to install and/or maintain some type of physical barrier to prevent exposure to contaminated soil located at depth is based upon the accessibility of the soil, the current and reasonably foreseeable site activities and uses, and the level of control desired at the site. At sites where soil contamination remains at some currently inaccessible location, the primary intent of the AUL should be to maintain the current soil category and related exposure assumptions by restricting activities which could disturb the zone of contamination and/or make it more accessible (i.e., moving contaminated soil to a more accessible location, thereby changing the soil category).

In Case Study #1, since contamination is below the Method 1, S-3 Soil Standards, is located at depth, and is not readily accessible, specifying the continued maintenance of existing physical barriers (e.g., landscaping, buildings) and/or the installation of additional barriers as obligations of the AUL may not be necessary to maintain a level of No Significant Risk at the site. Rather, the AUL would simply state that contaminated soil located at depths of 5 to 10 feet below grade is not to be disturbed; and restrict site activities and uses consistent with the S-1 soil category and uncontrolled subsurface activities which are likely to disturb the contaminated soil, render it more accessible, and/or result in a child's and/or an adult's exposure to contaminated soil through ingestion and/or dermal contact.

The necessary restrictions/requirements for conducting subsurface activities which may disturb contaminated soil should be clearly identified in the both the AUL Opinion and the AUL. In particular, the development of a Health and Safety Plan and a Soil Management Plan prior to the performance of planned/future excavation is strongly recommended as an obligation of the AUL to ensure that: 1. workers are informed of the presence of site-specific soil contaminants; 2. workers are aware of appropriate personal protective equipment and/or engineering controls to prevent exposure(s); and 3. contaminated soil is managed in accordance with the MCP at 310 CMR 40.0030 et seq. The AUL Opinion should provide a detailed discussion of the basis for this Obligation and should specify the required elements of both plans.

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the requirements of 310 CMR 40.1074, this Activity and Use Limitation Opinion has been prepared for the property located at 123 Main Street, Anytown, Massachusetts. As of the date of the recording of the Notice of Activity and Use Limitation ("Notice") with the Middlesex County Registry of Deeds, the subject 0.5 acre property is zoned for commercial use. A one-story building, landscaped areas, and a small parking lot occupy the property. A legal metes and bounds description of the property is provided in Exhibit A.

Site History

A 1992 release of #2 fuel oil from an underground storage tank required notification to the Department of Environmental Protection (DEP). The notification triggered an investigation to determine the extent of petroleum contamination at the site. Cleanup activities included removal of the tank, excavation, and off-site disposal of approximately 100 cubic yards of contaminated soil. Although the tank and soil have been removed, there remains soil contamination that could not be removed because of the proximity of the on-site building and its footings that prevented further excavation. Average concentrations of Extractable Petroleum Hydrocarbons remaining in soils are 800 mg/kg C9-C18 aliphatics, 3500 mg/kg C19-C36 aliphatics, and 1000 mg/kg C11-C22 aromatics. Other contaminants of concern are below laboratory method detection limits, and groundwater has not been significantly affected.

Reason for Activity and Use Limitation

The contaminated soil remaining at the site is currently located at 5 to 10 feet below surface grade near the northwest corner of the building in an area identified on **Exhibit B**. No utilities are present at this depth; landscaped areas overlie the contaminated soil, which is considered potentially accessible for current site use.

A risk characterization by Method 1, which compares contaminant levels to DEP's cleanup standards, was conducted to support an RAO for the site. Concentrations of petroleum in soil meet the Method 1, S-2 and S-3 soil standards for current site use, but exceed the most stringent Method 1, S-1 soil standards for unrestricted future use.

[Note: The "Method 1 Cleanup Standards" refer to numerical standards for chemical contaminants in soil and groundwater published in the Massachusetts Contingency Plan or "MCP." The MCP contains the Commonwealth of Massachusetts' regulations for the notification, assessment, and cleanup of disposal sites where a release of oil and/or hazardous materials has occurred. The soil standards are broken into three soil categories: S-1, S-2, and S-3. The S-1 Soil Standards are the most strict, or lowest, numerical values since they were derived to be protective of a residential exposure scenario by considering a receptor's incidental ingestion and dermal contact exposures to soil while gardening and playing. The S-2 and S-3 standards are less strict and therefore higher, since they were derived considering passive recreational and construction-related exposure scenarios, respectively. A Response Action Outcome is the regulatory endpoint of the disposal site assessment and cleanup process.]

The site poses No Significant Risk to health, safety, public welfare or the environment for current commercial uses of the property, as contaminant concentrations remaining in soil meet the Method 1, S-2 and S-3 Cleanup Standards. However, since levels of petroleum hydrocarbons remaining in the soil at the site exceed Method 1 S-1 Standards, a greater risk exists if future activities and uses of the property were to result in human exposure to contaminated soil. Therefore, in order to maintain a condition of No Significant Risk for future activities and uses, an Activity and Use Limitation is required to prohibit certain future uses of the property and to restrict activities in the AUL Area such that any disruption of soil is controlled and does not render contaminated soil more accessible for direct contact or ingestion by people at or near the disposal site.

Permitted Uses and Activities

- (i) Commercial and industrial activities and uses including but not limited to, landscaping and routine maintenance of landscaped areas which do not cause and/or result in direct contact with, disturbance of, and/or relocation of, the petroleum-contaminated soil currently located at depths of 5 to 10 feet below surface grade;
- (ii) Excavation associated with short-term (three months or less)¹³ underground utility and/or construction which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade provided that it is conducted in accordance with a Soil Management Plan and a Health a Safety Plan prepared and implemented in accordance with Obligations (i) and (ii) of this Opinion prior to the commencement of such activity;
- (iii) Activities and uses which are not identified by this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and
- (iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.¹⁴

Restricted Uses and Activities

¹³ The terms "short-term" and "long-term" are defined throughout the case studies as "less than three months" and "greater than three months", respectively, to reflect the 92-day exposure duration for a construction worker assumed by DEP in the development of the MCP Method 1, S-3 Soil Standards. The intent of the recommended AUL language is to convey that the Method 1, S-3 Soil Standards (and similarly derived Method 2, S-3 Standards) may not be protective for exposure periods exceeding 92 days.

¹⁴ The language in clause (iv) is part of Form 1075. The Department has received both internal and external comments that this language should be removed because it is not explicit. Since this language is part of the MCP form, however, it may not be altered. The intent of this language is to provide for any future activities and uses that were not identified by the LSP at the time the AUL was implemented. The language also reinforces the requirement that, under such future circumstances, an LSP must evaluate such activities and render an Opinion prior before the activities may be conducted.

- (i) Use of the property as a residence, school, nursery, daycare, recreational area, and/or other such use at which a child's presence is likely;
- (ii) Any short-term (three months or less) activity including, but not limited to, excavation which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade without the prior development and implementation of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Opinion;
- (iii) Any long-term (greater than three months) activity which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade; and
- (iv) Relocation of petroleum-contaminated soil currently located at 5 to 10 feet below surface grade to a shallower depth, unless such activity is first evaluated by an LSP who renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk.

Obligations and Conditions

- (i) A Soil Management Plan must be prepared by an LSP and implemented prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade within the AUL Area. The Soil Management Plan should describe appropriate soil excavation, handling, storage, transport, and disposal procedures and include a description of the engineering controls and air monitoring procedures necessary to ensure that workers and receptors in the vicinity are not affected by fugitive dust or particulates. On-site workers must be informed of the requirements of the Soil Management Plan, and the plan must be available on-site throughout the course of the project;
- (ii) A Health and Safety Plan must be prepared by a certified Industrial Hygienist or other qualified individual sufficiently trained in worker health and safety requirements and implemented prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at depths of 5 to 10 feet below surface grade within the AUL Area. The Health and Safety Plan should specify the type of personal protection (i.e., clothing, respirators), engineering controls, and environmental monitoring necessary to prevent worker exposures to petroleum-contaminated soil through dermal contact, ingestion, and/or inhalation. Workers must be informed of the requirements of the Health and Safety Plan, and the plan must be available on-site throughout the course of the project; and
- (iii) The petroleum-contaminated soil located at 5 to 10 feet below surface grade within the AUL Area must remain at depth and may not be relocated, unless such activity is first appropriately evaluated by an LSP who renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk.

A Notice of AUL Form 1075 for this type of site should contain language consistent with the AUL Opinion, as follows:

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Commercial and industrial activities and uses including but not limited to, landscaping and routine maintenance of landscaped areas which do not cause and/or result in direct contact with, disturbance of, and/or relocation of, the petroleum-contaminated soil currently located at depths of 5 to 10 feet below surface grade;
- (ii) Excavation associated with short-term (three months or less) underground utility and/or construction which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade provided that it is conducted in accordance with a Soil Management Plan and a Health a Safety Plan prepared and implemented in accordance with Obligations (i) and (ii) of this Notice prior to the commencement of such activity;
- (iii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a conditions of No Significant Risk; and
- (iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Use of the property as a residence, school, nursery, daycare, recreational area, and/or other such use at which a child's presence is likely;
- (ii) Any short-term (three months of less) activity including, but not limited to, excavation which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade without the prior development and implementation of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Notice;
- (iii) Any long-term (greater than three months) which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade; and
- (iv) Relocation of petroleum-contaminated soil currently located at 5 to 10 feet below surface grade to a shallower depth, unless such activity is first evaluated by an LSP who renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) A Soil Management Plan must be prepared by an LSP and implemented prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at 5 to 10 feet below surface grade within the AUL Area. The Soil Management Plan must be prepared in accordance with the guidelines discussed in the Activity and Use Limitation Opinion attached hereto as **Exhibit C**; and
- (ii) A Health and Safety Plan must be prepared and implemented prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at depths of 5 to 10 feet below surface grade within the AUL Area. The Health and Safety Plan must be prepared in accordance with the guidelines discussed in the Activity and Use Limitation Opinion attached hereto as **Exhibit C**; and
- (iii) The petroleum-contaminated soil located at 5 to 10 feet below surface grade within the AUL Area must remain at depth and may not be relocated, unless such activity is first appropriately evaluated by an LSP who renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk.

CASE STUDY 2: Soil Contamination beneath Existing Pavement

Preface: At sites where contamination is present in the vicinity of existing utility lines, emergency utility work cannot be restricted with an AUL since AULs cannot be used to restrict current activities and uses (See Risk Characterization discussion, Section 2.3).

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the requirements of 310 CMR 40.1074, this Activity and Use Limitation Opinion has been prepared to support a Notice of Activity and Use Limitation for the Green Acres property located at 345 Main Street, Siteville, Massachusetts. At the time of the recording of this AUL, the subject one-acre parcel and the surrounding vicinity are zoned for commercial and industrial uses. As illustrated by **Exhibit B** attached hereto, a small paved parking area occupies the southernmost portion of the property; the remainder of the property is unpaved. A City water line runs along the westerly property line, passing beneath the paved parking area. The City has easement rights to the water line.

Site History

A 21E investigation conducted at the property in 1990 identified elevated levels of lead in soil, likely attributable to past releases from industrial processes. The Department of Environmental Protection was subsequently notified of the release, and Phase I and Phase II site investigations were completed at the site to define the extent of contamination.

Lead concentrations from 30 mg/kg to 200 mg/kg were measured in surface and subsurface soil (from 0 to 15 feet in depth) throughout the unpaved portion of the property. Higher levels of lead were found in soil samples collected from beneath the paved parking lot at depths of 4 to 6 feet below surface grade at concentrations ranging from 310 to 460 mg/kg. No other contamination was identified at the site, and groundwater monitoring has adequately demonstrated that the release has not affected groundwater.

Reason for Activity and Use Limitation

A Method 1 Risk Characterization was prepared to support a Response Action Outcome for the site. Lead levels in soil within the paved portion of the property meet the applicable Method 1, S-2 and S-3 Cleanup Standard of 600 mg/kg while lead levels in soil in the unpaved portion of the property meet the more restrictive Method 1, S-1 Soil Standard of 300 mg/kg. Therefore, the site currently poses No Significant Risk to human health, safety, public welfare, and the environment for activities and uses consistent with current commercial and/or industrial uses of the property including emergency utility work and/or short-term (three months or less) construction projects.

However, since the lead levels measured in soil located beneath the paved parking lot exceed the more restrictive Method 1, S-1 Cleanup Standard of 300 mg/kg, a level of No Significant Risk is not supported for future unrestricted activities and uses of this portion of the property, such as those which may result in a child's exposure through direct contact and/or ingestion of the lead-contaminated soil. In order to achieve a level of No Significant Risk for future foreseeable site activities and uses, an Activity and Use Limitation is necessary to ensure that the soil located beneath the pavement remains inaccessible and the exposure pathways incomplete. Activities which may result in the disturbance of the pavement and the underlying soil must also be restricted in order to prevent exposures which may pose a Significant Risk to sensitive receptors.

Permitted Uses and Activities

- (i) Activities and uses including, but not limited to, vehicular parking, pedestrian and vehicular traffic which do not compromise the structural integrity of the pavement and/or disturb lead-contaminated soil located directly beneath the pavement;
- (ii) Excavation associated with emergency or short term (three months or less) underground utility and/or construction work, provided it is conducted in accordance with a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Opinion; and involves the repair and/or replacement of the pavement with a comparable barrier immediately following the completion of the project;

- (iii) Activities and uses which are not identified by this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and
- (iv) Such other activities and uses which , in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Restricted Uses and Activities

- (i) Activities and/or uses which are likely to involve the removal and/or disturbance of the pavement in the AUL Area and/or the disturbance of the lead-contaminated soil located beneath the pavement without prior development of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Opinion;
- (ii) Relocation of the lead-contaminated soil from beneath the pavement in the AUL Area unless an LSP renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk; and
- (iii) Activities and/or uses which may cause physical or chemical deterioration, breakage, or structural damage to the pavement.

Obligations and Conditions

- (i) A Soil Management Plan must be prepared by an LSP and implemented prior to the commencement of any activity that is likely to disturb the lead-contaminated soil located immediately beneath the pavement. The Soil Management Plan should describe appropriate soil excavation, handling, storage, transport, and disposal procedures and include a description of the engineering controls and air monitoring procedures necessary to ensure that workers and receptors in the vicinity are not affected by fugitive dust or particulates. On-site workers must be informed of the requirements of the Soil Management Plan, and the plan must be available on-site throughout the course of the project;
- (ii) A Health and Safety Plan must be prepared by a Certified Industrial Hygienist or other qualified individual sufficiently trained in worker health and safety requirements and implemented prior to the commencement of any activity which involves the removal and/or disturbance of the pavement and/or is likely to disturb the underlying lead-contaminated soil, rendering it more accessible. The plan should clearly describe the location of the lead-contaminated soil and specifically identify the types of personal protective equipment, monitoring devices, and engineering controls necessary to ensure that workers are not exposed to lead through dermal contact, ingestion, and/or the inhalation of particulate dusts. Workers who may come in contact with lead-contaminated soil within the designated AUL area must be informed of the location of the contamination and all requirements of the Health and Safety Plan. The plan must be available on-site throughout the course of the project;
- (iii) The pavement within the AUL Area must be repaired and/or replaced with a comparable barrier to prevent future exposures to underlying lead-contaminated soil immediately following the completion of any activity which involves its removal and/or disturbance;
- (iv) The pavement must be maintained within the designated AUL area to ensure that the lead-contaminated soil located beneath the pavement remains inaccessible; and
- (v) Semi-annual inspections and associated record-keeping activities must be performed to confirm that the pavement is being properly maintained to prevent exposure(s) to lead-contaminated soil located immediately beneath the pavement.

Form 1075 for this type of site SHOULD contain language consistent with the AUL Opinion as follows:

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Activities and uses including, but not limited to, vehicular parking, pedestrian and vehicular traffic which do not compromise the structural integrity of the pavement and/or disturb lead-contaminated soil located directly beneath the pavement;
- (ii) Excavation associated with emergency or short term (three months or less) underground utility and/or construction work, provided it is conducted in accordance with a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Notice; and involves the repair and/or replacement of the pavement with a comparable barrier immediately following the completion of the project;
- (iii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and
- (iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Activities and/or uses which are likely to involve the removal and/or disturbance of the pavement in the AUL Area and/or the disturbance of the lead-contaminated soil located immediately beneath the pavement without prior development of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (i) and (ii) of this Notice;
- (ii) Relocation of the lead-contaminated soil from beneath the pavement in the AUL Area unless an LSP renders an Opinion which states that such relocation is consistent with maintaining a condition of No Significant Risk; and
- (iii) Activities and/or uses which may cause physical or chemical deterioration, breakage, or structural damage to the pavement.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) A Soil Management Plan must be prepared by an LSP and implemented prior to the commencement of any activity that is likely to disturb the lead-contaminated soil located immediately beneath the pavement. The Soil Management Plan must be prepared in accordance the guidelines discussed in the Activity and Use Limitation opinion attached hereto as **Exhibit C**;
- (ii) A Health and Safety Plan must be prepared and implemented in accordance with the guidelines discussed in the Activity and Use Limitation Opinion attached hereto as **Exhibit C** prior to the commencement of any activity which involves the removal and/or disturbance of the pavement and/or is likely to disturb the underlying lead-contaminated soil within the AUL Area,;
- (iii) The pavement within the AUL Area must be repaired and/or replaced with a comparable barrier to prevent future exposures to underlying lead-contaminated soil immediately following the completion of any activity which involves its removal and/or disturbance;
- (iv) The pavement must be maintained within the designated AUL area to ensure that the lead-contaminated soil located beneath the pavement remains inaccessible; and
- (v) Semi-annual inspections and associated record-keeping activities must be performed to confirm that the pavement is being properly maintained to prevent exposure(s) to lead-contaminated soil located immediately beneath the pavement.

CASE STUDY 3: Soil Covered by an Impermeable Cap

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the requirements of 310 CMR 40.1074, this Activity and Use Limitation Opinion has been prepared to support a Notice of Activity and Use Limitation (AUL) for the property located at 789 Main Street, Anytown, Massachusetts. The subject two-acre property was formerly operated as an electroplating facility and is located within 100 feet of an elementary school and playground.

Site History

A 21E site investigation conducted at the property in 1995 identified a potential Imminent Hazard condition associated with the presence of 12,000 mg/kg chromium (VI) in the top six inches of soil. The Department of Environmental Protection was notified of the Imminent Hazard condition, and an Immediate Response Action was performed to remove the contaminated soil that could pose an Imminent Hazard. No utility lines are present in the vicinity of the chromium-contaminated soil.

Following the removal of a large volume of surficial soil from the disposal site depicted in **Exhibit B** attached hereto, soil samples were collected from the limits of the excavation to determine the level of chromium remaining in soil at the site. Additional soil borings and groundwater monitoring wells were also installed to define the extent of contamination and complete a Phase II Comprehensive Site Investigation. The results of the soil analyses indicate that concentrations of chromium in soil located at 2 to 3 feet below surface grade range from 150 mg/kg to 320 mg/kg, with an arithmetic average Exposure Point Concentration of 280 mg/kg. Groundwater shows no evidence of contamination.

Reason for Activity and Use Limitation

A Method 3 Risk Characterization was conducted to characterize the risk posed by the levels of chromium remaining in soil at the site. The Risk Characterization concluded that a condition of Significant Risk exists for a child, utility worker, and construction workers by means of exposure to residual chromium-contaminated soil through dermal contact, ingestion, and particulate inhalation.

[Note: The Massachusetts Contingency Plan allows a risk characterization for a disposal site to be performed by one of three methods: Method 1, which involves comparison of soil and groundwater contaminant levels measured at a site to existing numerical standards; Method 2, which involves comparison of soil and groundwater contaminant levels measured at a site to more site-specific numerical standards derived for a particular site; and Method 3, which involves a quantification of total site risk considering on-site receptors, assumed exposure scenarios, and contaminant levels measured at the site.]

A comprehensive Phase III remedial alternatives feasibility evaluation was performed to determine the most feasible response action to eliminate the risk of exposure posed by the levels of chromium remaining in soil at the site. The Phase III evaluation concluded that the application of an impermeable cap was the most appropriate remedial alternative to eliminate the exposure pathways (i.e., further excavation, treatment of the soil, and other remedial measures have been determined to be infeasible).

An impermeable cap consisting of three feet of clean fill overlain by a high density polyethylene liner, a drainage layer, and asphalt pavement was subsequently installed at the subject property in the area of the release (i.e., the disposal site). An Activity and Use Limitation is required to maintain a level of No Significant Risk by ensuring the maintenance of the impermeable cap and the restriction of certain activities and uses which could result in exposure to chromium-contaminated soil located beneath the impermeable cap.

Permitted Uses and Activities

- (i) Activities and uses which do not disturb the impermeable cap and the underlying chromium-contaminated soil;
- (ii) Activities and uses which are not identified by this Opinion as being inconsistent with maintaining a condition of no Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Restricted Site Uses and Activities

- (i) Any activities and uses which may damage the impermeable cap and/or disturb the underlying chromium-contaminated soil in the AUL area.

Obligations and Conditions

- (i) The impermeable cap located within the AUL Area must be maintained and must be routinely inspected on at least a semi-annual basis to confirm its ability to effectively prevent exposure(s) to underlying chromium-contaminated soil through direct contact, ingestion, and/or inhalation; and
- (ii) The chromium-contaminated soil must remain beneath the impermeable cap within the AUL Area to prevent exposures via direct, contact, ingestion, and/or inhalation.

Form 1075 should contain language consistent with the AUL Opinion as follows *(recall that a Method 3 Risk Characterization concluded that the direct contact, ingestion, and inhalation exposure pathways pose a Significant Risk to children, utility workers, and construction workers):*

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Activities and uses which do not disturb the impermeable cap and the underlying chromium-contaminated soil;
- (ii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Any activities and uses which may damage the impermeable cap and/or disturb the underlying chromium-contaminated soil in the AUL area.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) The impermeable cap located within the AUL Area must be maintained and must be routinely inspected on at least a semi-annual basis to confirm its ability to effectively prevent exposure(s) to underlying chromium-contaminated soil through direct contact, ingestion, and/or inhalation; and
- (ii) The chromium-contaminated soil must remain beneath the impermeable cap within the AUL Area to prevent exposures via direct, contact, ingestion, and/or inhalation.

CASE STUDY 4: Soil Contamination beneath a Building

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the Massachusetts Contingency Plan at 310 CMR 40.01074, this Activity and Use Limitation Opinion has been prepared to support a Notice of Activity and Use Limitation (AUL) for the subject industrial property located at 123 Main Street, Everytown, Massachusetts. At the time of the recording of the Notice of Activity and Use Limitation, the property is zoned for industrial use.

Site History

In 1995, a leaking underground storage tank (UST) containing #2 fuel oil was discovered near the Power Plant building located on the subject property during tank upgrade activities. **Exhibit B** attached hereto indicates the location of the disposal site relative to the subject property. The UST and petroleum-contaminated soil were subsequently removed from the site; the excavation extended to a depth of ten feet below surface grade. The water table was not encountered, but is believed to be located at a depth of approximately 20 feet below surface grade, based upon groundwater elevation data collected during previous site investigations on the property.

All of the petroleum-contaminated soil could not be removed from beneath the building because further excavation threatened the structural integrity of the building. Soil below the building foundation located at depths of 10 to 15 feet below grade exhibits total petroleum hydrocarbon (TPH) concentrations that exceed the Method 1, S-3 Standard of 5,000 mg/Kg. Elevated levels of volatile organic compounds were not detected in the soil samples, or in air samples collected inside the building's basement.

Reason for Activity and Use Limitation

Based on a Method 3 Risk Characterization, the site poses No Significant Risk for activities and uses consistent with its current commercial/industrial use. However, a risk of exposure was found to exist for a future construction worker exposed through direct contact with petroleum-contaminated soil remaining beneath the building. Future use of the site as a residence, school, daycare, or recreational area was not considered in the Risk Characterization.

In order to ensure that a level of No Significant Risk is maintained at the site, an AUL is necessary to "lock in" the assumptions and restrictions of the Risk Characterization regarding future site activities and uses.

Permitted Uses and Activities

- (i) Commercial and industrial uses of the property and activities consistent therewith which do not involve the disturbance of soil located at 10 to 15 feet below surface grade within the AUL Area;
- (ii) Activities and uses which are not identified by this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Restricted Uses and Activities

- (i) Any activity, such as excavation, which may disturb the petroleum-contaminated soil located at 10 to 15 feet below surface grade within the AUL Area without the prior development and implementation of a Health and Safety Plan and a Soil Management Plan in accordance with Obligation (i) as set forth below; and
- (ii) Use of the property as a residence, school, daycare facility and/or other use at which a child's presence is likely.

Obligations and Conditions

- (i) A Health and Safety Plan and a Soil Management Plan must be prepared and implemented prior to the

commencement of any subsurface activities which may disturb petroleum-contaminated soil located at depths of 10 to 15 feet below surface grade within the AUL area. The Health and Safety and the Soil Management plans must be developed and implemented in accordance with the following guidelines:

- (a) The Soil Management Plan must be prepared by an LSP and should describe appropriate soil excavation, handling, storage, transport, and disposal procedures and include a description of the engineering controls and air monitoring procedures necessary to ensure that workers and receptors in the vicinity are not affected by fugitive dust or particulates. On-site workers must be informed of the requirements of the Soil Management Plan, and the plan must be available on-site throughout the course of the project;
- (b) A Certified Industrial Hygienist or other qualified individual sufficiently trained in worker health and safety requirements must prepare the Health and Safety Plan. The plan should clearly identify the location of the petroleum-contaminated soil and specifically identify the types of personal protective equipment, monitoring devices, and engineering controls necessary to ensure that workers are not exposed to lead through dermal contact, ingestion, and/or the inhalation of particulate dusts. Workers who may come in contact with the contaminated soil must be trained in the requirements of the Health and Safety Plan, and the plan must be available on-site throughout the course of the project;
- (ii) The petroleum-contaminated soil currently located at depths of 10 to 15 feet below surface grade within the AUL Area must remain inaccessible and may not be relocated to shallower depths unless an LSP renders an Opinion that such relocation is consistent with maintaining a condition of No Significant Risk.

Form 1075 for this type of site should include language consistent with the AUL Opinion as follows:

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Commercial and industrial uses of the property and activities consistent therewith which do not involve the disturbance of soil located at 10 to 15 feet below surface grade within the AUL Area;
- (ii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Any activity, such as excavation, which may disturb the petroleum-contaminated soil located at 10 to 15 feet below surface grade within the AUL Area without the prior development and implementation of a Health and Safety Plan and a Soil Management Plan in accordance with Obligation (i) as set forth below; and
- (ii) Use of the property as a residence, school, daycare facility or other use at which a child's presence is likely.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) A Health and Safety Plan and a Soil Management Plan must be prepared and implemented prior to the commencement of any subsurface activities which may disturb petroleum-contaminated soil located at depths of 10 to 15 feet below surface grade within the AUL area. The Health and Safety and the Soil Management plans must be developed and implemented in accordance with the guidelines provided by the AUL Opinion attached hereto as **Exhibit C** to this Notice of AUL; and
- (ii) The petroleum-contaminated soil currently located at depths of 10 to 15 feet below surface grade within the AUL Area must remain inaccessible and may not be relocated to shallower depths, unless an LSP renders an Opinion that such relocation is consistent with maintaining a condition of No Significant Risk.

CASE STUDY 5: Residential Site with a Private Well

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the requirements of 310 CMR 40.1072, this Activity and Use Limitation Opinion has been prepared to support a **Grant of Environmental Restriction** for the property located at 456 Main Street, Everytown, Massachusetts. The subject one-acre property is zoned for residential use and is unpaved.

Site History

During removal of an underground storage tank (UST) from the property in 1996, a release of gasoline affecting soil and groundwater was discovered. The UST and gasoline contaminated soil were subsequently removed, and Phase I and Phase II site investigations were completed to define the extent of contamination at the site.

Reason for Activity and Use Limitation

Following the excavation and removal of the UST and a large volume of contaminated soil, Exposure Point Concentrations for benzene and xylenes remaining in soil at 3 to 5 feet below surface grade were determined to meet the applicable Method 1, S-1 Soil Standards.

Groundwater monitoring conducted in the UST source area and at the downgradient limits of the plume has provided sufficient temporal and spatial data to demonstrate that groundwater contamination does not exceed the Method 1 GW-2 and GW-3 Standards. However, a concentration of 400 ug/l of benzene was measured in a groundwater sample collected from a private drinking water supply well located on the property 70 feet downgradient of the UST source area. The GW-1 groundwater standards apply to the site solely due to the location of a private drinking water supply well within 500 feet of the disposal site area.

[Note: The MCP defines three potential groundwater categories for disposal sites: GW-1, which applies to drinking water source areas; GW-2, which applies to groundwater within 30 feet of an occupied building where the average annual depth to the water table is less than 15 feet below surface grade; and GW-3, which applies to all groundwater in the Commonwealth.]

In accordance with the MCP requirements, the property has been connected to the Town's public water supply, the private well has been properly abandoned, and this Grant of Environmental Restriction has been implemented to restrict the use of the groundwater at the property as a drinking water source.¹⁵

¹⁵ A Grant of Environmental Restriction may also be used to abandon a private well that is within 500 feet of the disposal site boundary (i.e., not currently affected by the release), and on a non-site property. In this case, Form 1072C rather than Form 1072A should be used.

The Grant of Environmental Restriction, Form 1072A for a closed private drinking water well should state:

Restricted Uses and Activities: Grantor shall not perform, suffer, allow, or cause any person to perform any of the following activities in, on, upon, through, over and under Property:

- (i) Use of the Property's private water supply well;
- (ii) Installation of new private water supplies within the Property; and
- (iii) Removal of the sealant used in closing the private water supply well located within the Property.

Permitted Uses and Activities: Grantor expressly reserves the right to perform, suffer, allow, or cause any person to perform any activities in, on, through, over, or under the Property other than those certain activities prohibited herein; and

Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Obligations and Conditions: Grantor affirmatively agrees to maintain the private water supply well located within the Property in its closed and abandoned condition.

CASE STUDY 6: Site with Current GW-2 Classification (Building Currently On-Site)

EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the Massachusetts Contingency Plan at 310 CMR 40.01074, this Activity and Use Opinion has been prepared to support a Notice of Activity and Use Limitation (“Notice”) for the commercial property located at 789 Main Street, Everytown, Massachusetts. At the time of the recording of this Notice the subject three-acre parcel is occupied by a three-story office building surrounded by a paved parking lot with some landscaping.

Site History

The property is located in a highly developed commercial area adjacent to an interstate highway. Former operators at the property include a circuit board manufacturer and a laboratory device manufacturer. Elevated concentrations of trichloroethene (TCE) have been measured in groundwater within thirty feet of the on-site office building since 1983. The annual average depth to the water table is eight feet below surface grade.

Note: Two approaches are presented in this Case Study for the given site conditions.

Approach #1

Reason for Activity and Use Limitation

A Method 3 Risk Characterization was prepared to support a Response Action Outcome for the site. Although the concentrations of TCE measured in groundwater near the building exceed its respective Method 1, GW-2 Standard, several rounds of groundwater, soil gas, and indoor air data collected from the site have adequately demonstrated that the existing vapor barrier and passive sub-slab venting system that were installed to prevent the migration of TCE vapors into the building.

Since these engineering controls have effectively eliminated this exposure pathway, the site currently poses No Significant Risk to building occupants. However, because the exposure pathway must remain incomplete to ensure that a level of No Significant Risk continues to exist for future foreseeable site activities and uses, an Activity and Use Limitation is required to ensure continued maintenance of the vapor barrier and the passive sub-slab venting system.

Form 1075 for this type of site SHOULD contain language consistent with the AUL Opinion as follows:

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Any use of the existing building located within the designated AUL area of the site, so long as the vapor barrier and passive sub-slab venting system are maintained;
- (ii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Removal of the vapor barrier and/or passive sub-slab venting system;
- (ii) Any activities which damage and/or compromise the effectiveness of the vapor barrier and passive sub-slab venting system in preventing migration of volatile organic compounds into the existing building; and
- (iii) Construction of any building at the site without the installation of a vapor barrier and a passive sub-slab venting system and subsequent indoor air sampling to confirm their effectiveness in preventing vapor intrusion into the building.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) The vapor barrier and passive sub-slab venting system of the existing building must be properly maintained to effectively prevent vapor intrusion into the building; and
- (ii) Any future building construction at the site must include the installation of a vapor barrier and a sub-slab venting system to prevent the migration of volatile organic compounds into the building. Follow-up indoor air sampling must be conducted to confirm the effectiveness of these engineering controls in eliminating this exposure pathway.

Approach #2

Reason for Activity and Use Limitation

A Method 3 Risk Characterization was prepared to support a Response Action Outcome for the site. To evaluate exposures associated with inhalation exposures, the Johnson and Ettinger Heuristic Model was modified using site-specific soil and building parameter values to derive a site-specific attenuation coefficient for TCE. The maximum concentration of TCE measured in groundwater at the site and the derived attenuation coefficient were then used to predict an indoor air concentration of TCE within the building.

Since the Excess Lifetime Cancer Risks and Hazard Indices for a commercial office worker associated with inhalation of the predicted indoor air concentrations of TCE were below the risk limits of the MCP, the Risk Characterization concluded that the site poses No Significant Risk for current building occupants. However, because the risk characterization and attenuation coefficient for TCE were based upon limited and specific modeling assumptions pertaining to the soil at the site (e.g., soil permeability, soil moisture content) and the characteristics of the existing on-site building and its use (e.g., volumetric air exchange rates, uses of the building, amount of time occupants spend in the building, migration pathways into the building), future building occupants may be at risk should building uses, receptors, and/or exposures change.

DISCUSSION: DEP has received a number of RAOs supported by Method 2 and Method 3 Risk Characterizations that are very similar to the Case Study provided. In these cases, the supporting risk characterizations rely upon very “narrow” model input parameters and exposure assumptions that typically focus only on the current use of the on-site building and its specific characteristics. Consequently, the AUL must be very “narrow” and specific in order to document the assumptions and use-limiting restrictions built into the risk characterization and its accompanying model.

In general, DEP believes it impractical and inadvisable to use an AUL to identify and “enforce” narrow modeling and risk characterization assumptions regarding building operations and construction and soil input parameters. That is, models should not incorporate limited assumptions about the use of the building or the operations of its ventilation system if such assumptions reflect conditions that are difficult to adhere to, or verify. Rather, DEP recommends that risk characterizations that rely upon such models examine broad and relatively conservative ranges of input parameter values. In so doing, the resulting models and risk characterizations may be more protective of a variety of exposures at face value and a higher level of confidence may be achieved regarding specific future building uses which may indeed pose a risk of exposure.

Form 1075 for this type of site SHOULD contain language consistent with the AUL Opinion as follows:

| | |
|---|---|
| <u>Permitted Activities and Uses Set Forth in the AUL Opinion</u> | |
| (i) | Commercial and/or industrial use of the on-site building as shown located on the survey plan, provided that building conditions and the operating parameters of the heating and ventilation systems are maintained; and |
| (ii) | Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and |
| (iii) | Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph. |
| <u>Activities and Uses Inconsistent with the AUL Opinion</u> | |
| (i) | Use of the on-site building as a residential home, condominium, school, daycare, or other use which was not considered within the risk characterization and demonstrated to pose No Significant Risk of harm to human health, safety, public welfare, and the environment; and |
| (ii) | Construction of other buildings on-site without the installation of a passive venting system and vapor barrier and/or the performance of indoor air monitoring which adequately demonstrates that chlorinated volatile organics are not migrating into the building. |
| <u>Obligations and Conditions Set Forth in the AUL Opinion</u> | |
| (i) | Maintenance of the parameters of the heating and ventilation system to prevent potential vapor migration into the building; |
| (ii) | Performance of groundwater monitoring, indoor air monitoring, and/or soil gas sampling for any future building constructed at the site to determine whether chlorinated volatile organics present in the groundwater may pose a potential risk of exposure to building occupants; and |
| (iii) | Performance of response actions in accordance with the Massachusetts Contingency Plan, should site conditions and/or environmental monitoring conducted pursuant to Obligation (ii) indicate that groundwater contaminants are migrating into the building. |

**SITES WHERE AN AUL IS RECOMMENDED,
ALTHOUGH NOT CURRENTLY REQUIRED BY THE MCP**

Case Studies 7 and 8 present common site conditions where a property owner may choose to implement an AUL, although the MCP does not currently require an AUL for these situations. Should an owner implement an AUL in such a case, DEP recommends that the AUL Opinion state that the AUL is not required by the MCP, but is being used at the option of the property owner.

Case Study 7: Site with Active Groundwater Treatment System

A Class C RAO is filed for a site located in the Zone II of a public drinking water supply well. An active groundwater recovery and treatment system is currently in operation at the site to prevent the migration of small recurring levels of NAPL (above the Upper Concentration Limit - UCL) and dissolved concentrations of TPH and benzo (a) pyrene (above its published Maximum Contaminant Level (MCL)) towards the public water supply well. Because the operation of the groundwater recovery and treatment system is necessary to support the elimination of all substantial hazards at the site, an AUL may be implemented to provide Notice of the presence of levels of contamination remaining in groundwater which exceed the applicable UCL and MCL, and the necessity for the continued operation of the groundwater treatment system.

Form 1075 for this type of site should be consistent with the AUL Opinion and contain language as follows:

| |
|--|
| <p><u>Permitted Activities and Uses Set Forth in the AUL Opinion</u></p> <ul style="list-style-type: none">(i) Continued operation and monitoring of the groundwater treatment system at the site;(ii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and(iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph. <p><u>Activities and Uses Inconsistent with the AUL Opinion</u></p> <ul style="list-style-type: none">(i) Termination of the groundwater treatment system prior to the achievement of groundwater concentrations at the site which are below the applicable cleanup standards of the Massachusetts Contingency Plan and the suitably analogous standards (i.e., Maximum Contaminant Levels (MCLs) required for a GW-1 area. <p><u>Obligations and Conditions Set Forth in the AUL Opinion</u></p> <ul style="list-style-type: none">(i) The continued operation of the groundwater recovery and treatment system to prevent the migration of site contaminants towards the public drinking water supply well until sufficient temporal and spatial groundwater data adequately demonstrates the achievement of a Permanent Solution pursuant to the performance standards for Response Action Outcomes specified at 310 CMR 40.1004; and(ii) Routine operation and maintenance of the groundwater recovery and treatment system. |
|--|

Case Study 8: Future Building Construction Scenario

The chlorinated solvents trichloroethene (TCE) and tetrachloroethene (PCE) are present at the disposal site at concentrations that exceed the Method 1, GW-2 Standards, but meet the Method 1, GW-3 Standards. While the average annual depth to the water table is less than 15 feet below grade, there is currently not a building located at the site. Therefore, since the complete exposure pathway between groundwater and indoor air does not exist, the site poses No Significant Risk for current site activities and uses.

Because future construction is planned at the site, however, a hypothetical commercial exposure scenario is evaluated for the site using a Method 3 Risk Characterization. The Johnson and Ettinger Model is used to derive site-specific attenuation factors (i.e., the ratio of the concentration of a contaminant in indoor air to the concentration of the same contaminant in soil gas beneath the building foundation) for TCE and PCE. The model assumes that an office building will be constructed in the area of site where the highest levels of TCE and PCE have been measured in groundwater and assigns certain parameter values relating to the building's predicted dimensions, foundation thickness, number of indoor air exchanges, per hour etc. The resulting attenuation coefficients are used to predict indoor air concentrations of TCE and PCE which are then carried through the risk characterization and determined to pose No Significant Risk to a future building occupant.

Although the MCP does not require that future foreseeable GW-2 uses of a property be considered to support a Response Action Outcome for a site such as this which does not currently meet the GW-2 criteria, the implementation of an AUL at such sites may be prudent in order to "lock in" the assumptions of the risk characterization and supporting vapor intrusion model. In the case described, it may prove to be in the best interests of a property owner to provide future occupants, owners, or interested parties with notice that the model used to demonstrate the achievement of No Significant Risk for future use at the property is based upon an assumed commercial office building of specific construction, dimensions, and ventilation characteristics. The AUL could be used to indicate that, should another type of building be constructed at the property (e.g., residential home, daycare, school), a level of No Significant Risk may not be supported since the site conditions upon which the original RAO and risk characterization are based may not hold true and, at the minimum, require further evaluation on the part of a LSP to confirm their validity.

[Note: Vapor barriers and/or passive sub-slab venting systems have been installed in a number of buildings during construction at disposal sites similar to the case study described, where high levels of volatile organics remain in groundwater.]

Form 1075 for this type of site should be consistent with the AUL Opinion and contain language as follows:

Permitted Activities and Uses Set Forth in the AUL Opinion

- (i) Activities and uses consistent with the construction and use of a commercial office building at the site [assumed to be a 3-story structure, measuring 200 feet by 200 feet];
- (ii) Activities and uses which are not identified by this Notice as being inconsistent with maintaining a condition of No Significant Risk; and
- (iii) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this paragraph.

Activities and Uses Inconsistent with the AUL Opinion

- (i) Construction of any building at the site which does not meet the commercial office building assumptions of the vapor intrusion model and risk characterization used to support the Response Action Outcome for the site without prior evaluation by a LSP who renders an Opinion which states that the use of such building is consistent with maintaining a condition of No Significant Risk.

Obligations and Conditions Set Forth in the AUL Opinion

- (i) Specifications for future buildings to be constructed at the site must be compared to the assumptions of the vapor intrusion model and risk characterization used to support the Response Action Outcome for the site and re-evaluated by an LSP who must render an Opinion as to whether site conditions, activities, and/or uses associated with the future building potentially pose a significant risk of harm to human health; and
- (ii) Response actions must be conducted in accordance with the Massachusetts Contingency Plan, 310 CMR 40.0000, should an LSP Opinion rendered pursuant to Obligation (i) conclude that future site uses and activities, including exposures associated with future building construction, are inconsistent with maintaining a condition of No Significant Risk.

SECTION 8: INAPPROPRIATE AUL LANGUAGE

As noted in Sections 2.10 and 4.7 above, AUL terms need to be as clear and as enforceable as possible. In this section, examples that do not meet these standards are discussed.

- (A) The following language is **INAPPROPRIATE** because the permitted and prohibited activities and uses, and the stated obligations and conditions are not readily understandable by individuals who are not familiar with the terminology of the Massachusetts Contingency Plan (MCP). Although the MCP refers to the frequency and intensity of activities and uses at a disposal site to determine the appropriate soil category, it is not reasonable to assume, for example, that a child's behavior can be controlled and/or limited to an "acceptable" level. In addition, the language fails to provide any indication of the type and location of contamination present at the disposal site, and does not identify the specific activities that pose a Significant Risk of exposure to receptors.

| |
|--|
| <p><u>Permitted Activities and Uses</u></p> <p>(1) High frequency and low intensity S-2 activities and uses by a child;</p> <p>(2) Low frequency and high or low intensity S-2/S-3 activities and uses by a child;</p> <p>(3) High frequency and high or low intensity S-2/S-3 activities and uses by an adult; and</p> <p>(4) Low frequency and high or low intensity S-3 activities and uses by an adult.</p> <p><u>Restricted Activities and Uses</u></p> <p>(1) High frequency and high intensity S-1 activities and uses by a child.</p> <p><u>Obligations and Conditions</u></p> <p>(1) Maintain current site conditions as potentially accessible with respect to S-2 and S-3 soil.</p> |
|--|

- (B) The following language is **INAPPRPRIATE** because it lacks specificity and fails to provide the reader with any indication of the fundamental obligations necessary to prevent exposures and maintain a condition of No Significant Risk at the site. "Limited excavation" does not provide information regarding the depth of excavation or the location of the contaminated soil. "Chronic exposure" is not defined and is too vague a term for describing exposure duration. Moreover, the restriction of "chronic exposures" for children and teenagers implies that an acute or short-term exposure would be permitted, which may not be accurate if one assumes that the AUL is based on a Method 1 or Method 2 Risk Characterization, or if a Method 3 Risk Characterization did not consider these exposures to support a level of No Significant Risk. Lastly, the obligations and conditions do not provide an indication of what "current site uses and conditions" are.

Permitted Activities and Uses

- (1) The use of the site for public or private water supplies;
- (2) Recreational use typically associated with a residential area;
- (3) Current site use; and
- (4) Limited excavation.

Restricted Activities and Uses

- (1) Any activities involving chronic exposure of children and teenagers to contaminated soil;
- (2) Subsurface soil should not be re-used within three feet of the ground surface.

Obligations and Conditions

- (1) Current site uses; and
- (2) Current site conditions.

- (C) The following language is **INAPPROPRIATE** because it is confusing and unnecessarily complicated. Specifically, the location and depth of the "impacted" and "isolated" soil is not clearly identified; the descriptions of permitted "low frequency" and "low intensity" excavation activities and time limits are not likely to be enforceable without the direct oversight of an LSP; and the "applicable environmental regulations, safety requirements, and testing" references provide no definitive guidelines for excavation, disposal, or confirmatory analyses. Moreover, the fundamental obligation of the AUL is not articulated - namely, to ensure that a level of No Significant Risk is maintained at the site by preventing access and direct contact exposure to contaminated soil located beneath the building foundation.

Permitted Activities and Uses

- (1) The building foundation may be removed or altered so long as the underlying soil is not disturbed. The entire structure or portion thereof may also be removed, so long as the impacted soil remains isolated after demolition and/or reconstruction is complete;
- (2) Work or activities of any nature in the area of impacted soil which is "isolated;" and
- (3) Excavation or other activities which may render certain soils accessible, although no impacted soil is presently accessible. Work or activities of any nature in the area of accessible impacted soil of low frequency and low intensity are permitted involving adults engaged in full 8-hour shifts on a sporadic basis or 2-hour shifts on a permanent basis, provided that the activities do not have the potential to disturb impacted soil and thus result in either direct contact with the soil itself or inhalation of soil-derived dust. No health and safety plan is required for this permitted work.

Restricted Activities and Uses

- (1) Excavation of impacted soils, absent consideration of whether special handling and disposal consistent with the provisions of the MCP;
- (2) Permanent removal of the foundation, unless the depth of clean fill between the impacted soil and the resulting earthen floor is at least 3 feet, the impacted soil beneath the foundation is removed, or the soil is otherwise isolated. The foundation may be repaired or replaced with other impermeable structures. The foundation may be removed, so long as the impacted soil remains isolated; and
- (3) The site configuration may not be changed so as to render impacted soil permanently "accessible" or "potentially accessible". However, construction, repair, and maintenance activities may proceed in accessible or potentially accessible soil as specified by the permitted activities of this AUL.

Obligations and Conditions

- (1) If subsurface excavation or disturbance of the building foundation is initiated, encountered soil contamination must be excavated and properly disposed of in accordance with applicable environmental regulations and safety requirements; and
- (2) Applicable testing to verify that the completeness of remediation efforts has been satisfied.

(D) The following AUL language is **INAPPROPRIATE**, as it is too vague and needs more definition and focus. "Prolonged human exposure, periods, and contact," for example, imply that some level of exposure is acceptable but fails to provide concrete examples of permitted and prohibited activities and uses. The reference to OSHA training also provides no information regarding the type of personal protection actually required for a worker exposed to specific subsurface contamination. The exposure pathways that could pose a Significant Risk are not identified, nor is the actual location of the contaminated soil.

Permitted Activities and Uses

- (1) Non-residential uses that do not result in prolonged human exposure to soil-borne contaminants.

Restricted Activities and Uses

- (1) Soil excavation without appropriate OSHA training for workers likely to come in contact with contaminated soil;
- (2) Removal of pavement and exposing contaminated soils for prolonged periods to human contact; and
- (3) Residential or commercial use that would be likely to result in prolonged human contact with soil-borne contaminants.

Obligations and Conditions

- (1) When contractors, construction workers, utility maintenance personnel or others intend to perform work inconsistent with the permitted uses identified or work that may result in significant risk of harm to health, safety, public welfare, or the environment, or in a substantial hazard, those persons should be informed of the presence of chromium compounds and advised as to whether an appropriate Health and Safety Plan should be developed and whether other activities consistent with the provisions of the MCP should be conducted. Work inconsistent with the permitted uses is not prohibited as long as this obligation is satisfied.

***Note:** The above obligation effectively invalidates the RAO and the achievement of a Permanent Solution at the site by allowing activities to be conducted at the site which could pose a Significant Risk of harm to health, safety, public welfare, and the environment. Additionally, the language does not identify the individual responsible for determining whether a Health and Safety Plan should be developed and the need to perform other activities consistent with the MCP. Such determination should be made by an LSP and the AUL should state this clearly to prevent a site worker, for example, from deciding to waive the need for a Health and Safety Plan.*

With respect to the development of a Health and Safety Plan and the performance of "other activities consistent with the MCP," if excavation in the AUL area is prohibited (i.e., already shown to pose a Significant Risk by Risk Characterization), then the AUL should clearly state what plans and activities are required should excavation be necessary. In this case, the need for an LSP to develop Health and Safety and Soil Management plans should already be listed as an obligation of the AUL.

APPENDICES

- APPENDIX A: TABLE OF REQUIREMENTS FOR AUL SUBMITTALS**
- APPENDIX B: AUL IMPLEMENTATION FLOW CHART**
- APPENDIX C: STEP BY STEP THROUGH FORM 1075**
- APPENDIX D: SAMPLE TITLE CERTIFICATION**
- APPENDIX E: LEGAL NOTICE OF AN ACTIVITY AND USE LIMITATIONS**
- APPENDIX F: REQUIREMENTS FOR SURVEY PLANS**
- APPENDIX G: LIST OF AUL RELATED FORMS**
- APPENDIX H: ACTIVITY AND LIMITATION CHECKLIST**
- APPENDIX I: STATEMENT OF TERMINATION FACT SHEET AND FORM**
- APPENDIX J: SAMPLE NOTICE OF ACTIVITY AND USE LIMITATIONS**

APPENDIX A:

TABLE OF REQUIREMENTS FOR AUL SUBMITTALS

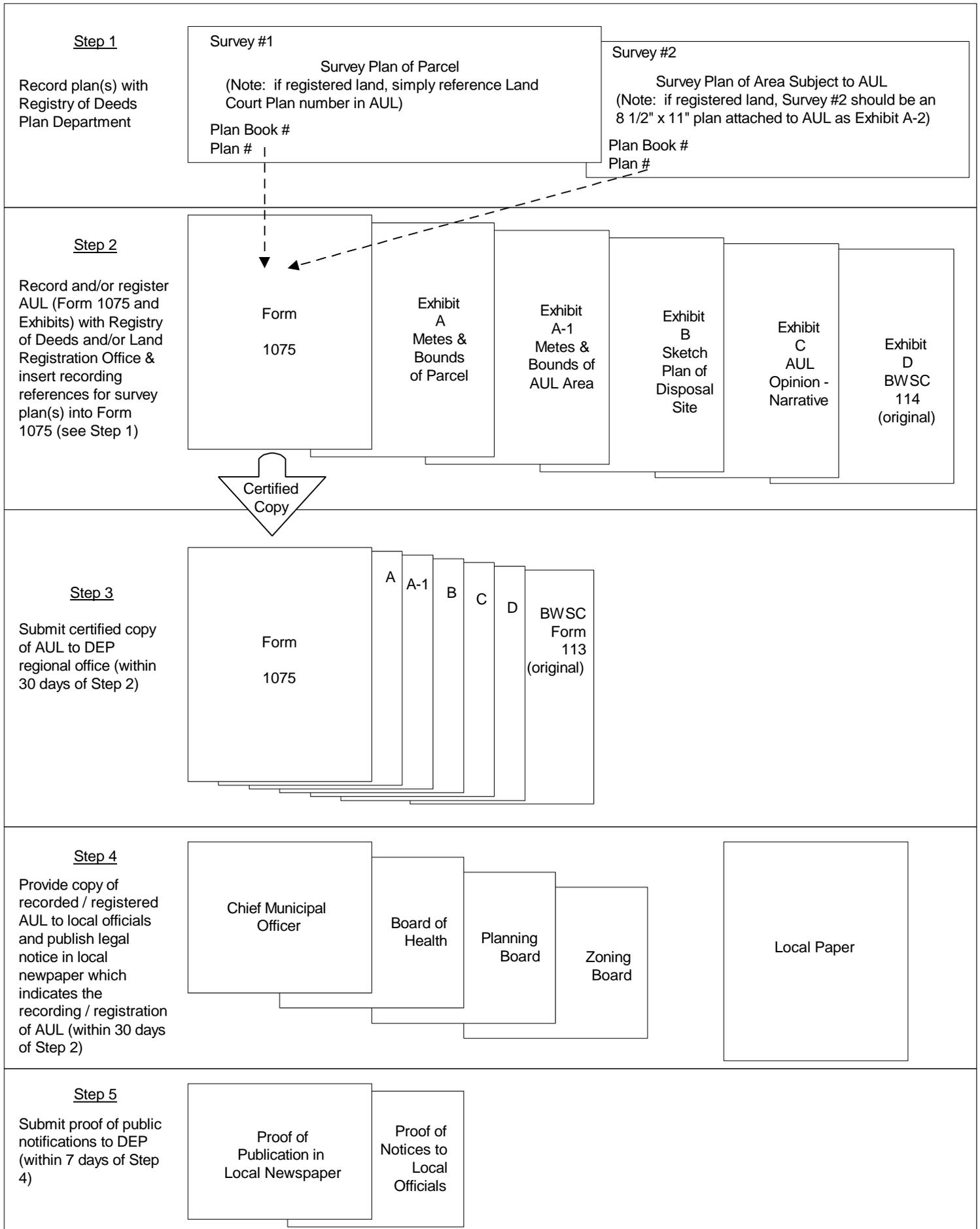
Table of Requirements for AUL Submittals

| Requirement | Grant of Environmental Restriction | Notice of Activity and Use Limitation | “Private Well Grant” |
|---|---|--|-----------------------------|
| AUL Form | 1072A | 1075 | 1072C |
| BWSC Transmittal Form 113 | ✓ | ✓ | ✓ |
| Exhibit A - Legal description of parcel of land containing area subject to AUL | ✓ | ✓ | ✓ |
| Exhibit A-1 - Legal description of area subject to AUL | ✓ | ✓ | ✓ |
| Exhibit B - Sketch plan showing boundaries of area subject to AUL in relation to boundaries of disposal site | ✓ | ✓ | ✓ |
| Exhibit C - AUL Opinion in narrative form | ✓ | ✓ | ✓ |
| Exhibit D - BWSC AUL Transmittal Form 114 | ✓ | ✓ | ✓ |
| Title Certification (<i>See Appendix D</i>) | ✓ | | ✓ |
| Subordination Agreement(s) (Form 1072B) | ✓ | | ✓ |
| Transmittal Form for Application and Payment (Permit Code - BWSC 40) | ✓ | | ✓ |

APPENDIX B:

AUL IMPLEMENTATION FLOW CHART

APPENDIX B



APPENDIX C:
STEP BY STEP THROUGH FORM 1075

NOTICE OF ACTIVITY AND USE LIMITATION

M.G.L. c. 21E, §6 and 310 CMR 40.0000

Disposal Site Name: _____
DEP Release Tracking No.(s): _____

This Notice of Activity and Use Limitation ("Notice") is made as of this ____ day of _____, 19____, by [Name and address of current property owner(s)], together with his/her/its/their successors and assigns (collectively "Owner").

WITNESSETH:

WHEREAS, _____ (Name of Owner), of _____ (Town/City), _____ County, _____ (State) [is][are] the owner(s) in fee simple of [that][those] certain parcel(s) of [vacant] land located in _____ (Town/City), _____ County, Massachusetts, with the buildings and improvements thereon ("Property");

WHEREAS, said parcel(s) of land, which is more particularly bounded and described in Exhibit A, attached hereto and made a part hereof ("Property") is subject to this Notice of Activity and Use Limitation. The Property is shown on a plan [recorded and/or registered herewith][recorded and/or registered in _____ County Registry of Deeds/Land Registration Office in Plan Book _____, Plan _____, or as Land Court Plan No. _____];

[WHEREAS, a portion of the Property ("Portion of the Property") is subject to this [Notice of Activity and Use Limitation]. The Portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. The Portion of the Property is shown [on a plan to be recorded herewith][on a plan recorded with County Registry of Deeds in Plan Book _____ Plan _____] and/or [on a sketch plan attached hereto and filed herewith for registration];

WHEREAS, the Property [Portion of the Property] comprises [all][part of] a disposal site as the result of a release of oil and/or hazardous material. Exhibit B is a sketch plan showing the relationship of the [Property][Portion of the Property] subject to this Notice of Activity and Use Limitation to the boundaries of said disposal site (to the extent such boundaries have been established). Exhibit B is attached hereto and made a part hereof.]; and

WHEREAS, one or more response actions have been selected for [the Disposal Site][Portion of the Disposal Site] in accordance with M.G.L. c.21E ("Chapter 21E") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"). Said response actions are based upon (a) the restriction of human access to and contact with oil and/or hazardous material in soil [and/or groundwater] and/or (b) the restriction of certain activities occurring in, on, through, over or under the [Property] [Portion of the Property]. The basis for such restrictions is set forth in an Activity and Use Limitation Opinion ("AUL Opinion"), dated _____, (which is attached hereto as Exhibit C and made a part hereof);

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Permitted Activities and Uses Set Forth in the AUL Opinion. The AUL Opinion provides that (select one) [a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time] [no substantial hazards remain] (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the [Property][Portion of the Property]:

- (i) _____ ; _____
- (ii) _____ ; and
- (iii) Such other activities or uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this Paragraph.

Provide date property owner is signing Notice and name of property owner.

Provide name and address of property owner(s). Name should match signature at end of form (including middle initial, if any).

Attach, as Exhibit A, the legal description of the parcel of land containing area subject to AUL.

Reference survey plan of parcel of land described in Exhibit A in AUL. For registered land, provide Land Court Plan # ; for unregistered land, provide plan book and plan #s. If plan for unregistered land is to be recorded at time of recording of AUL, so indicate.

Attach, as Exhibit A-1, legal description of portion of property subject to AUL. Reference survey plan of portion of property subject to AUL. If registered land, attach as Exhibit A-2, a 8 1/2" by 11" plan of portion of property subject to AUL.

Attach, as Exhibit B, a sketch plan showing the relationship of the area subject to the AUL to the boundaries of the disposal site.

The AUL Opinion should be in narrative form and attached as Exhibit C. Note: Form 114 cannot be substituted for AUL Opinion. Form 114 is attached as Exhibit D to AUL.

Tip: If a survey plan for the entire parcel of land is also being prepared, the two plans can be combined into one.

Guidance: LSP Opinion should mirror what is identified in Permitted, Prohibited, and Obligations and Conditions sections below.

Guidance: Be careful not to inadvertently omit a permitted activity. Omissions may result in the need to amend the AUL.

Guidance: Be as specific as possible when identifying Activities and Uses Inconsistent with the AUL Opinion. Vague descriptions may unintentionally result in over restricting the property.

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the [Property] [Portion of the Property], may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

- (i) ;
- (ii) ; and
- (iii) .

Guidance: Obligations and Conditions should be clearly spelled out so that current and future interest holders clearly understand what needs to be done to maintain a condition of No Significant Risk.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the [Property] [Portion of the Property] to (select one) [maintain a condition of No Significant Risk] [eliminate a substantial hazard] as set forth in the AUL Opinion shall include the following:

- (i) ;
- (ii) ; and
- (iii) .

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the [Property] [Portion of the Property] which may result in higher levels of exposure to oil and/or hazardous material than currently exist shall be evaluated by an LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 *et seq.*, as to whether the proposed changes will (select one) [present a significant risk of harm to health, safety, public welfare or the environment] [will invalidate the conclusion that no substantial hazards remain]. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment or to create substantial hazards due to exposure to oil and/or hazardous material without the prior evaluation by an LSP in accordance with 310 CMR 40.1080 *et seq.*, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by an LSP in accordance with 310 CMR 40.1080 *et seq.*, the owner or operator of the [Property] [Portion of the Property] subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and recorded and/or registered with the appropriate Registry(ies) of Deeds and/or Land Registration Office(s).

WITNESS the execution hereof under seal this _____ day of _____, 19____.

Guidance: AUL must be signed by all property owners. An LSP may not sign on the property owner's behalf unless he or she has power of attorney from the owner. See Section 4.16 for instructions on signatures from corporations, partnerships, etc.

Owner

Owner signs first, then the LSP.

COMMONWEALTH OF MASSACHUSETTS

_____, ss

_____, 19__

Then personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed before me,

Notary Public:
My Commission Expires:

The undersigned LSP hereby certifies that he/she executed the aforesaid Activity and Use Limitation Opinion attached hereto as Exhibit C and made a part hereof and that in his/her Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Use Limitation Opinion.

Date: _____

LSP
[LSP SEAL]

COMMONWEALTH OF MASSACHUSETTS

_____, ss

_____, 19__

Then personally appeared the above named _____ and acknowledged the foregoing to be his/her free act and deed before me,

Notary Public:
My Commission Expires:

Upon recording, return to:

(Name and Address of Owner)

APPENDIX D:
SAMPLE TITLE CERTIFICATION

[FIRM LETTERHEAD]

_____, 19____

Commonwealth of Massachusetts, Acting by
and through its Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: [BRIEF DESCRIPTION OF PROPERTY TOGETHER WITH DEED REFERENCE]

Ladies/Gentlemen:

We have examined the records of the _____ Registry of Deeds with respect to the above-described premises for a period of at least fifty (50) years through [DATE], at [TIME], [INSTRUMENT NO.]. We certify, that at such time, [NAME OF PARTY HOLDING TITLE], held good, clear, record and marketable title to the above premises, free from all encumbrances which would materially affect the title, except the following matters which are not covered by our title examination and which may materially affect the title:

NOTE: We do not certify as to violations of subdivision controls or planning board regulations; conservation commission and environmental control questions, if any; zoning; bankruptcy and creditors' rights; accuracy of descriptions of surveys; rights of parties in possession; any matters which would be disclosed by an accurate survey and inspection; whether or not restrictions have been violated; disposition agreements of any Redevelopment Authority; pending federal liens not of record; usurious provisions, variable rates repayment or rewrite provisions of mortgages; Indian tribal land claims; validity of corporate or other type entity existence; errors or omissions in indexing at the Registries of Deeds and probate (including computer errors or omissions); unpaid taxes, municipal assessments or any other matters not of record at the Registry of Deeds or Registry of Probate or to subsequent owners. Liability is limited to matters appearing of record during the period of the examination, and only to the parties to whom the certificate is issued. This certificate does not cover Chapter 963 Acts of 1973 (re: abandoned railroad beds) or provisions of M.G.L. Chapter 21E (Superfund Statute). No liability is assumed for obtaining releases, discharges or any other instruments noted below.

ENCUMBRANCES:

[PLEASE LIST ALL MATTERS AFFECTING TITLE - THE DESCRIPTION OF THE ENCUMBRANCE SHOULD INCLUDE THE DATE OF THE DOCUMENT OR PLAN AS WELL AS A BOOK AND PAGE REFERENCE. ADDITIONALLY, COPIES OF ALL DOCUMENTS SHOULD BE INCLUDED WITH CERTIFICATION]

This certification relies upon [DESCRIPTION OF PLAN, INCLUDING RECORDING INFORMATION] for the accuracy of the description.

The certifications set forth above are solely for your benefit in connection with an application for a Grant of Environmental Restriction and are issued pursuant to the provisions of 310 CMR 40.1072(2)(c). These certifications may not be furnished to any other person or entity or relied upon by you for any other matter, nor by any other person or entity in any manner.

Very truly yours,

[NAME OF LAW FIRM OR TITLE
COMPANY CERTIFYING TITLE]

APPENDIX E:

LEGAL NOTICE OF AN ACTIVITY AND USE LIMITATIONS

NOTICE OF AN ACTIVITY AND USE LIMITATION

**SITE NAME
SITE ADDRESS
RELEASE TRACKING NUMBER**

Pursuant to the Massachusetts Contingency Plan (310 CMR 40.1073), a **[GRANT OF ENVIRONMENTAL RESTRICTION or NOTICE OF ACTIVITY AND USE LIMITATION]** on the above disposal site has been recorded and/or registered with the **[ENTITY]** on **[DATE]**.

The **[GRANT OR ENVIRONMENTAL RESTRICTION or NOTICE OF ACTIVITY AND USE LIMITATION]** will limit the following site activities and uses on the above property:

-
-
-

Any person interested in obtaining additional information or reviewing the **[GRANT OF ENVIRONMENTAL RESTRICTION or NOTICE OF ACTIVITY AND USE LIMITATION]** and the disposal site file may contact **[PROPERTY OWNER/PRP, ADDRESS]** at **[TELEPHONE NUMBER]**.

**APPENDIX F:
REQUIREMENTS FOR SURVEY PLANS**

Requirements for Survey Plans

Amendments under the General Laws, Chapter 36, Section 13A, approved by the Attorney General are as follows:

1. Plan sizes shall be a minimum of 8 1/2" by 11" and a maximum of 24" by 36".
2. Plans being presented for recording shall be on linen or polyester film, single matte with a thickness of 0.004 mils, and must have an opacity so as to allow consistent diazo and microfilm reproduction.
3. All plans shall be prepared using a compatible ink with excellent cohesiveness which will produce a permanent bond and result in a plan with long term durability.
4. Linen or polyester reproductions shall be accepted for recording provided they contain original signatures and comply with the other requirements for the recording of plans.
5. Each plan shall have 3/4" borders.
6. The minimum letter size on plans presented for recording shall be 1/8".
7. Each plan presented for recording shall include a graphic scale.
8. Each plan shall have an area reserved to receive planning board recitation or contain a surveyor's certification as per Chapter 380, Acts of 1966.
9. Each plan shall have a 3 1/2" square reserved for Registry use.
10. Each plan must contain a certification clause signed by the preparer stating that he/she has conformed with the rules and regulations of the Registers of Deeds in preparing the plan.

**APPENDIX G:
LIST OF AUL RELATED FORMS**

List of AUL-Related Forms

BWSC Transmittal Forms:

- BWSC-113: Activity and Use Limitation (AUL) Transmittal Form
- BWSC-114: Activity and Use Limitation (AUL) Opinion Form
Transmittal Form for Application and Payment (For Grants only)

MCP Forms for Activity and Use Limitations:

- 1072A: Grant of Environmental Restriction
- 1072B: Subordination Agreement
- 1072C: Grant of Environmental Restriction for Closed Private Drinking Water Well(s)
- 1075: Notice of Activity and Use Limitations
- 1082A: Amendment to Grant of Environmental Restriction
- 1082B: Amendment to Notice of Activity and Use Limitations
- 1084A: Release of Environmental Restriction
- 1084B: Termination of Notice of Activity and Use Limitations

NOTE: The AUL forms that appear in the MCP have been revised since the MCP was first issued in 1993. Please make sure that you use the most current version of these forms when preparing an AUL.

**APPENDIX H:
ACTIVITY AND USE LIMITATION CHECKLIST**

Activity and Use Limitation Checklist

The following is a checklist for use in preparation of an Activity and Use Limitation.

1. Select the Appropriate AUL form as provided in the MCP _____
Note: The language of the form may not be altered. Check to see that you are using a form from current regulations.
 - Grant of Environmental Restriction - Use Form 1072A _____
[this form is used to prevent exposure to soil contamination and to close a private drinking water well located within site property]
 - Grant of Environmental Restriction for Closed Private Drinking Water Well(s) - Use Form 1072C _____
[this form is used for closure of private drinking water well located within non-site property]
 - Notice of Activity and Use Limitation - Use Form 1075 _____
 - Amendment to Grant of Environmental Restriction - Use Form 1082A _____
 - Amendment to Notice of Activity and Use Limitation - Use Form 1082B _____
 - Termination of Notice of Activity and Use Limitation - Use Form 1084A _____
 - Release of Environmental Restriction - Use Form 1084B _____
 - Statement of Termination of Notice of Activity and Use Limitation _____
2. Obtain Subordination Agreement(s) - Use Form 1072B _____
(Required for Grant of Environmental Restriction and any amendments if prior record interests exist in area subject to Grant)
3. Locate and/or Prepare Survey Plan(s) _____

For unregistered land- If a survey plan of the property containing the area subject to the AUL is not of record at the Registry, have MA Registered Land Surveyors prepare a plan in accordance with plan recording requirements. If the AUL is to be implemented on a portion of the property, a survey of the portion must also be prepared. Both surveys may be represented on a single plan.

For registered land - A Land Court Plan will exist for the property. Reference the Land Court Plan in the AUL. A survey plan will need to be prepared if the AUL is to be implemented on a portion of the registered property and attached as Exhibit A-2 to the AUL.
4. Record survey plan independently from the AUL at the appropriate Registry of Deeds prior to recording the AUL. _____
5. Prepare a written AUL Opinion, in narrative form. The AUL Opinion is prepared, signed and stamped by an LSP, and **attached as Exhibit C** to Notice and Grant and as Exhibit B to an Amendment, Release or _____

Termination.

Activity and Use Limitation Checklist, page 2 of 3

6. Complete the appropriate AUL form (*See Step 1.*) by including the following information: _____

- DEP Disposal Site Name (if one exists) _____
- DEP Release Tracking Number(s) _____
- Name of Property Owner [person(s) or legal entity] _____
- Address of Property Owner(s) _____
- Select bracketed language that applies with respect to whether the AUL applies to the property or “portion of the property”. Delete bracketed language that does not apply. _____
- Reference to survey plan of record (or plan recorded prior to recording the AUL) of parcel containing area subject to the AUL (*See Steps 3 and 4*) _____

Note: If parcel is registered land, then a reference to the Land Court Plan number is sufficient.

- If AUL is being implemented on a portion of the property, reference to plan of record or plan to be recorded prior to recording the AUL. _____

Note: If land is registered, the plan should be 8 1/2” x 11” in size and attached as Exhibit A-2 to the Notice or Grant. If land is unregistered, the plan should be recorded as plan with Registry of Deeds, and the recording reference is sufficient..

- Description of Permitted Activities and Uses (should reflect contents of the AUL Opinion) _____
- Description of Restricted Activities and/or Uses Inconsistent with AUL Opinion (should reflect contents of AUL Opinion) _____
- Description of Obligations and Conditions (should reflect contents of AUL Opinion) _____

7. Prepare and attach appropriate AUL Exhibits, which include: _____

- Exhibit A - written, legal description of parcel containing area subject to the AUL _____
- Exhibit A-1 (when AUL is being implemented on a portion of the property) - written, legal description of portion of parcel subject to the AUL _____
- Exhibit A-2 (a survey plan, only needed when AUL is being implemented on a portion of property which is registered land) _____
- Exhibit B - sketch plan showing area subject to AUL in relation to boundaries of disposal site _____
- Exhibit C - narrative AUL Opinion, as prepared in Step 5. _____
- Transmittal Form 114, attached as Exhibit D to the AUL and as Exhibit C to Amendment, Release and Termination _____

Note: Transmittal Form 114 may not be used as a substitute for the AUL Opinion.

8. Obtain signatures of owner(s) on the AUL form _____

Note: If owner is a corporation, need authorized signatory, a vote (if officer(s) are not president or vice president AND treasurer or assistant treasurer, (See AUL Guidance Section 4.12) and a certificate of incumbency for the officer(s) signing; if trust, LLC or LLP, need signatures of those authorized to sign. LSP may sign for property owner with a power of attorney from owner which must be recorded with AUL.

9. Date owner's signature _____

10. Owner's signature properly notarized _____

11. LSP signs and seals AUL form _____

Note: LSP must sign the AUL form after the owner (i.e., LSP's signature may not pre-date owner's).

12. Date LSP's signature _____

13. LSP's signature properly notarized _____

14. If unregistered land and AUL is a Notice, Amendment to Notice or Termination of Notice, stamp or write on back of instrument, "Return to _____ (owner)" and include mailing address _____

Note: If registered land, this step is unnecessary as the Land Registration Office will keep the original AUL.

15. If unregistered land and AUL is Grant, Amendment to Grant, or Subordination Agreement, stamp or write on back of instrument, "Return to: Department of Environmental Protection Attn: _____ (Name of DEP AUL contact) One Winter Street Boston, MA 02108" _____

If Release of Grant, return address would be that of owner

Note: If registered land, this step is unnecessary as the Land Registration Office will keep original of instrument.

16. Request that Registry of Deeds marginally reference AUL onto deed of owner, and marginally reference Amendment, Termination, or Release, or any other confirmatory AUL on the AUL to which it relates _____

17. Forward a certified Registry copy of AUL to appropriate DEP regional office within 30 days of recording and/or registering the AUL _____

18. Forward a copy of the recorded and/or registered AUL, within 30 days of its recordation and/or registration, to the following local officials: _____

- 1. Chief Municipal Officer
- 2. Board of Health
- 3. Zoning Official
- 4. Building Code Enforcement Official

19. Publish legal notice indicating the recording and/or registration of the AUL (Notice, Grant, Amendment, Release or Termination) in a newspaper circulating in the community(ies) in which the property subject to the AUL is located in the form prescribed by DEP within 30 days of the recording and/or registration of the AUL. _____

20. Send a copy of legal notice as it appeared in the newspaper to DEP within
7 days of newspaper publication.

**APPENDIX I:
STATEMENT OF TERMINATION
FACT SHEET AND FORM**

**Statement of Termination
of Notice of Activity and Use Limitation**

Bureau of Waste Site Cleanup
FACT SHEET

Attached is a form for a Statement of Termination of Notice of Activity and Use Limitation ("Statement") prepared by the Department of Environmental Protection. This form should be used where a Notice of Activity and Use Limitation is being terminated AND replaced by a new Notice of Activity and Use Limitation. Please be advised that the language of the enclosed form should not be changed other than to provide information to fill in the appropriate blanks.

While a termination of a Notice of Activity and Use Limitation must meet the requirements established by the Massachusetts Contingency Plan ("MCP" at 310 CMR 40.1083), the Department recognizes that implementation of the enclosed Statement does not meet all of the MCP's current requirements. The Department will not consider the use of the attached form to be a violation of the MCP so long as the Statement is properly implemented and the new Notice of Activity and Use Limitation is recorded and/or registered immediately after the recordation and/or registration of the Statement. The Department plans to incorporate this Statement into the MCP in the next package of revisions (which are expected to be published in draft in Winter 1999).

Please note that this Fact Sheet should be separated from the Statement and that the Statement alone should be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office. Also, please note that, to implement this Statement, it is necessary to request of the Registry of Deeds that the Statement be marginally referenced on the Notice of Activity and Use Limitation that is being terminated.

June 1, 1998

STATEMENT OF TERMINATION OF
NOTICE OF ACTIVITY AND USE LIMITATION
M.G.L. c.21E, §6 and 310 CMR 40.0000

Disposal Site Name: _____
DEP Release Tracking No.(s): _____

I/WE, _____,
of _____ (City/Town), _____ County,
_____ (State), being the owner(s) of that certain parcel(s) of [vacant] land located
in _____ (City/Town), _____ County, Massachusetts, [with the
buildings and improvements situated thereon], said land being more particularly bounded and described in
Exhibit A, attached hereto and made a part hereof ("Property"), do hereby terminate that certain Notice of
Activity and Use Limitation dated _____, and recorded with the
_____ County Registry of Deeds in Book _____, Page _____, and/or registered
with the Land Registration Office of the _____ County Registry District as Document No.
_____ (said Notice of Activity and Use Limitation and any amendments thereto hereinafter being
collectively referred to as "Notice") affecting said Property or portion thereof, so that said Notice may be
substituted by the Notice of Activity and Use Limitation given by the undersigned, dated
_____, and recorded and/or registered immediately hereafter.

This Statement of Termination of Notice of Activity and Use Limitation to become effective upon its
recording and/or registration with the appropriate Registry of Deeds and/or Land Registration Office.

WITNESS the execution hereof under seal this ____ day of _____, 19__.

Owner

COMMONWEALTH OF MASSACHUSETTS

_____, ss _____, 19__

Then personally appeared the above named _____ and
acknowledged the foregoing instrument to be his/her/their free act and deed before me,

Notary Public:

My Commission Expires: _____

**APPENDIX J:
SAMPLE NOTICE OF ACTIVITY AND USE LIMITATIONS**



ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Release Tracking Number

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

3 - 0000

A. LOCATION OF DISPOSAL SITE AND PROPERTY SUBJECT TO AUL:

Disposal Site Name: Titan Tool Company
Street: 345 Main Street Location Aid: near intersection of New Hope St.
City/Town: Siteville ZIP Code: 99999
Address of property subject to AUL, if different than above. Street: _____
City/Town: _____ ZIP Code: _____

Check here if this Disposal Site is Tier Classified.
If the Disposal Site subject to the AUL is also subject to a Tier I Permit, provide the Permit Number: _____

Related Release Tracking Numbers affected by this AUL: _____

B. THIS FORM IS BEING USED TO: (check one)

- Submit a certified copy of a Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1074 (complete all sections of this form).
- Submit a certified copy of an Amended Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1081(4) (complete all sections of this form).
- Submit a certified copy of a Termination of a Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1083(3) (complete all sections of this form).
- Submit a certified copy of a Grant of Environmental Restriction, pursuant to 310 CMR 40.1071, (complete all sections of this form).
- Submit a certified copy of an Amendment of Environmental Restriction, pursuant to 310 CMR 40.1081(3) (complete all sections of this form).
- Submit a certified copy of a Release of Environmental Restriction, pursuant to 310 CMR 40.1083(2) (complete all sections of this form).

You must attach all supporting documentation for the use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

C. AUL INFORMATION:

Date AUL was recorded and/or registered with Registry of Deeds and/or Land Registration Office: 7-3-97
Name of Registry of Deeds and/or Land Registration Office where AUL was recorded and/or registered: Essex Co. Reg. of Deeds (Southern District)
Book and Page Number and/or Document Number of recorded and/or registered AUL: Book 200, Page 28

D. PERSON SUBMITTING AUL TRANSMITTAL FORM:

Name of Organization: Titan Tool Company, Inc.
Name of Contact: Ernest C. Greene Title: President and Treasurer
Street: 345 Main Street
City/Town: Siteville State: MA ZIP Code: 99999
Telephone: (978) 555-1111 Ext.: 100 FAX: (optional) _____

E. OWNER OF PROPERTY, IF NOT PERSON SUBMITTING AUL TRANSMITTAL FORM:

Provide a mailing address for the owner of the property if that person is not submitting the AUL Transmittal Form. Provide addresses for additional owners on an attachment.

Name of Organization: _____
Name of Contact: _____ Title: _____
Street: _____
City/Town: _____ State: _____ ZIP Code: _____
Telephone: _____ Ext.: _____ FAX: (optional) _____



ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

3 - 0000

F. RELATIONSHIP TO DISPOSAL SITE OF PERSON SUBMITTING AUL TRANSMITTAL FORM:

(check one)

- RP or PRP Specify: Owner Operator Generator Transporter Other RP or PRP: _____
- Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- Any Other Person Submitting AUL Specify Relationship: _____

G. CERTIFICATION OF PERSON SUBMITTING AUL TRANSMITTAL FORM:

I, Ernest C. Greene, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: Ernest C. Greene Title: President and Treasurer
(signature)

For: Titan Tool Company, Inc. Date: 7-7-97
(print name of person or entity recorded in Section D)

Enter address of person providing certification, if different from address recorded in Section D:

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone: _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE, AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES.

NOTICE OF ACTIVITY AND USE LIMITATION
M.G.L. c. 21E, §6 and 310 CMR 40.0000

Disposal Site Name: Titan Tool Company
DEP Release Tracking No.(s): 3-0000

This Notice of Activity and Use Limitation ("Notice") is made as of this 3rd day of July, 19 97, by Titan Tool Company, Inc., a Massachusetts corporation having a principal place of business at 345 Main Street, Siteville, Massachusetts 99999, together with its successors and assigns (collectively, "Owner").

W I T N E S S E T H:

WHEREAS, Titan Tool Company, Inc., of Siteville, Essex County, Massachusetts, is the owner in fee simple of that certain parcel of land located in Siteville, Essex County, Massachusetts, with the buildings and improvements thereon ("Property");

WHEREAS, said parcel of land, which is more particularly bounded and described in Exhibit A, attached hereto and made a part hereof ("Property") is subject to this Notice of Activity and Use Limitation. The property is shown on a plan recorded with Essex County Registry of Deeds (Southern District) in Plan Book 150, Plan 10.

WHEREAS, a portion of the Property ("Portion of the Property") is subject to this Notice of Activity and Use Limitation. The Portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. The Portion of the Property is shown as the "AUL Area" on the aforementioned plan recorded with said Deeds in Plan Book 150, Plan 10;

WHEREAS, the Portion of the Property comprises part of a disposal site as the result of a release of oil and/or hazardous material. Exhibit B is a sketch plan showing the relationship of the Portion of the Property subject to this Notice of Activity and Use Limitation to the boundaries of said disposal site (to the extent such boundaries have been established). Exhibit B is attached hereto and made a part hereof; and

WHEREAS, one or more response actions have been selected for the Portion of the Disposal Site in accordance with M.G.L. c.21E ("Chapter 21E") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"). Said response actions are based upon (a) the restriction of human access to and contact with oil and/or hazardous material in soil and/or (b) the restriction of certain activities occurring in, on, through, over or under the Portion of the Property. The basis for such restrictions is set forth in an Activity and Use Limitation Opinion ("AUL Opinion"), dated July 2, 1997, (which is attached hereto as Exhibit C and made a part hereof);

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Permitted Activities and Uses Set Forth in the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Portion of the Property:
 - (i) Commercial and/or industrial uses and activities associated therewith, including, but not limited to, pedestrian and/or vehicular traffic, landscaping, and routine maintenance of

landscaped areas, which do not cause and/or result in the disturbance and/or the re-location of petroleum-contaminated soil located at 4 to 8 feet below surface grade;

- (ii) Short-term (three months or less) underground utility and/or construction activities including, but not limited to, excavation (including emergency repair of underground utility lines), which are likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade, provided that such activities are conducted in accordance with Obligations/Conditions (i) and (ii) in Section 3 of this Activity and Use Limitation Opinion (“Opinion”), the soil management procedures of the MCP cited at 310 CMR 40.0030, and all applicable worker health and safety practices pursuant to 310 CMR 40.0018;
- (iii) Activities and uses which are not identified in this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and
- (iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this Paragraph.

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice, and which, if implemented at the Portion of the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

- (i) Use of the portion of the property as a residence, school (with the exception of adult education), daycare, nursery, recreational area (such as a park or athletic fields), and/or any other use at which a child’s presence is likely;
- (ii) Any activity including, but not limited to, excavation, which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade associated with underground utility and/or construction work, without prior development and implementation of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (I) and (ii) of Section 3 of the AUL;
- (iii) Any activity which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade for a period of time greater than three months, unless such activity is first evaluated by an LSP who renders an Opinion stating that such activity is consistent with maintaining a condition of No Significant Risk and that such activity is conducted in accordance with Obligations (i) and (ii) of Section 3 of this AUL;and
- (iv) Relocation of petroleum-contaminated soil located at 4 to 8 feet below surface grade, unless such relocation is first evaluated by an LSP who renders an Opinion stating that such relocation is consistent with maintaining a condition of No Significant Risk.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the Portion of the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

- (i) A Soil Management Plan must be prepared by a Licensed Site Professional (LSP) prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade. The Soil Management Plan should describe appropriate soil management, characterization, storage, transport and disposal procedures in accordance with the provisions of the MCP cited at 310 CMR 40.0030 et seq. Workers who may come in contact with the petroleum-contaminated soil should be appropriately trained on the

requirements of the Plan, and the Plan must remain available on-site throughout the course of the project;

J-2

- (ii) A Health and Safety Plan must be prepared and implemented prior to the commencement of any activity which may result in the disturbance of petroleum-contaminated soil located at 4 to 8 feet below surface grade. The Health and Safety Plan should be prepared by a Certified Industrial Hygienist or other qualified individual appropriately trained in worker health and safety procedures and requirements. The Plan should specify the type personal protection, engineering controls, and environmental monitoring necessary to prevent worker and other potential receptor exposures to petroleum-contaminated soil through ingestion, dermal contact, and inhalation. Workers who may come in contact with the petroleum-contaminated soil should be appropriately trained on the requirements of the Plan , and the Plan must remain available on-site throughout the course of the project; and
- (iii) The petroleum-contaminated soil located at 4 to 8 feet below surface grade must remain at depth and may not be relocated, unless such activity is first evaluated by an LSP who renders an Opinion which states that such activity poses no greater risk of harm to health, safety, public welfare, or the environment and ensures that a condition of No Significant Risk is maintained.

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the Portion of the Property which may result in higher levels of exposure to oil and/or hazardous material than currently exist shall be evaluated by an LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 *et seq.*, as to whether the proposed changes will present a significant risk of harm to health, safety, public welfare or the environment. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment or to create substantial hazards due to exposure to oil and/or hazardous material without the prior evaluation by an LSP in accordance with 310 CMR 40.1080 *et seq.*, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by an LSP in accordance with 310 CMR 40.1080 *et seq.*, the owner or operator of the Portion of the Property subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and

recorded and/or registered with the appropriate Registry(ies) of Deeds and/or Land Registration Office(s).

J-3

I-3

WITNESS the execution hereof under seal this 3rd day of July, 1997.

Titan Tool Company, Inc.

Owner
By: Ernest C. Greene
Its: President and Treasurer

COMMONWEALTH OF MASSACHUSETTS

Essex, ss

July 3, 1997

Then personally appeared the above named Ernest C. Greene in his respective capacities as President and Treasurer of the Titan Tool Company, Inc., and acknowledged the foregoing to be his free act and deed in his aforesaid respective capacities before me,

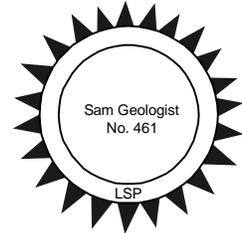


Notary Public: Marvin Notary
My Commission Expires December 12, 2000

The undersigned LSP hereby certifies that he executed the aforesaid Activity and Use Limitation Opinion attached hereto as Exhibit C and made a part hereof and that in his Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Use Limitation Opinion.

Date: July 3, 1997

LSP – Sam Geologist



COMMONWEALTH OF MASSACHUSETTS

Essex, ss

July 3, 1997

Then personally appeared the above named Sam Geologist and acknowledged the foregoing to be his free act and deed before me,



Notary Public: Marvin Notary
My Commission Expires December 12, 2000

Titan Tool Company, Inc.,
345 Main Street,
Siteville, MA 99999
Attn.: Ernest C. Greene

Upon recording, return to:

EXHIBIT A

(Description of Parcel of Land Containing Area Subject to AUL)

A certain parcel of land situated in Siteville, Essex County, Massachusetts, shown as Lot 1 on a plan entitled, "Plan of, Lot 1, AUL Area and Disposal Site Land in Siteville, Massachusetts, Owned by Titan Tool Company, Inc., of 345 Main Street, Siteville, Massachusetts 99999", dated March 1, 1981, Scale 1" = 80', prepared by Mass Survey Company, Inc., Boston, Massachusetts, and recorded with Essex County Registry of Deeds (Southern District) in Plan Book 150, Plan 10, and being more particularly bounded and described as follows:

| | |
|-----------------|---|
| BEGINNING | at a point on the northerly side of New Hope Street at the southwest corner of land now or formerly of Titan Tool Company; and thence running |
| N 85°23' 15"W | along the northerly side line of New Hope Street, one hundred sixty-six and 87/100 (166.87) feet; thence continuing |
| NORTHWESTERLY | by a curve to the right having a radius of twenty and 00/100 (20.00) feet, a distance of thirty-one and 39/100 (31.39) feet to the easterly side line of Main Street; thence turning and running |
| N 04° 32' 15" E | along the easterly side line of Main Street, four hundred seventy-four and 85/100 (474.85) feet; thence turning and running |
| S 78° 53' 59" E | by land now or formerly of City of Siteville two hundred sixty-eight and 75/100 (286.57) feet; thence turning and running |
| S 16° 29' 15" W | by land now or formerly of Titan Tool Company, four hundred seventy-two and 65/100 (472.56) feet to the point of beginning, containing 113,555 square feet of land, more or less, according to said plan. |

EXHIBIT A-1

(Description of Area Subject to AUL)

That certain portion of a parcel of land, said parcel of land being situated in Siteville, Essex County, Massachusetts, and being shown as Lot 1 on the aforementioned plan recorded with said Deeds in Plan Book 150, Plan 10, said portion being shown as the "AUL Area" on said plan, and being more particularly bounded and described as follows:

| | |
|-----------------|--|
| BEGINNING | at a point on the northerly side of New Hope Street at the southwest corner of land now or formerly of the Titan Tool Company; thence running |
| N 85° 23' 15" W | along the northerly side line of New Hope Street, one hundred sixty-six and 87/100 (166.87) feet; thence continuing |
| NORTHWESTERLY | by a curve to the right having a radius of twenty and 00/100 (20.00) feet, a distance of thirty-one and 39/100 (31.39) feet to the easterly side line of Main Street; thence turning and running |
| N 04° 32' 15" E | along the easterly side line of Main Street, sixty (60.00) feet; thence turning and running |
| S 75° 10' 05" W | one hundred eighty and 00/100 (180.00) feet to a point; thence turning and running |
| S 19° 53' 22" W | eighty and 00/100 (80.00) feet to the point of beginning, containing 12,140.45 square feet of land, more or less, according to said plan. |

Exhibit B: Sketch Plan

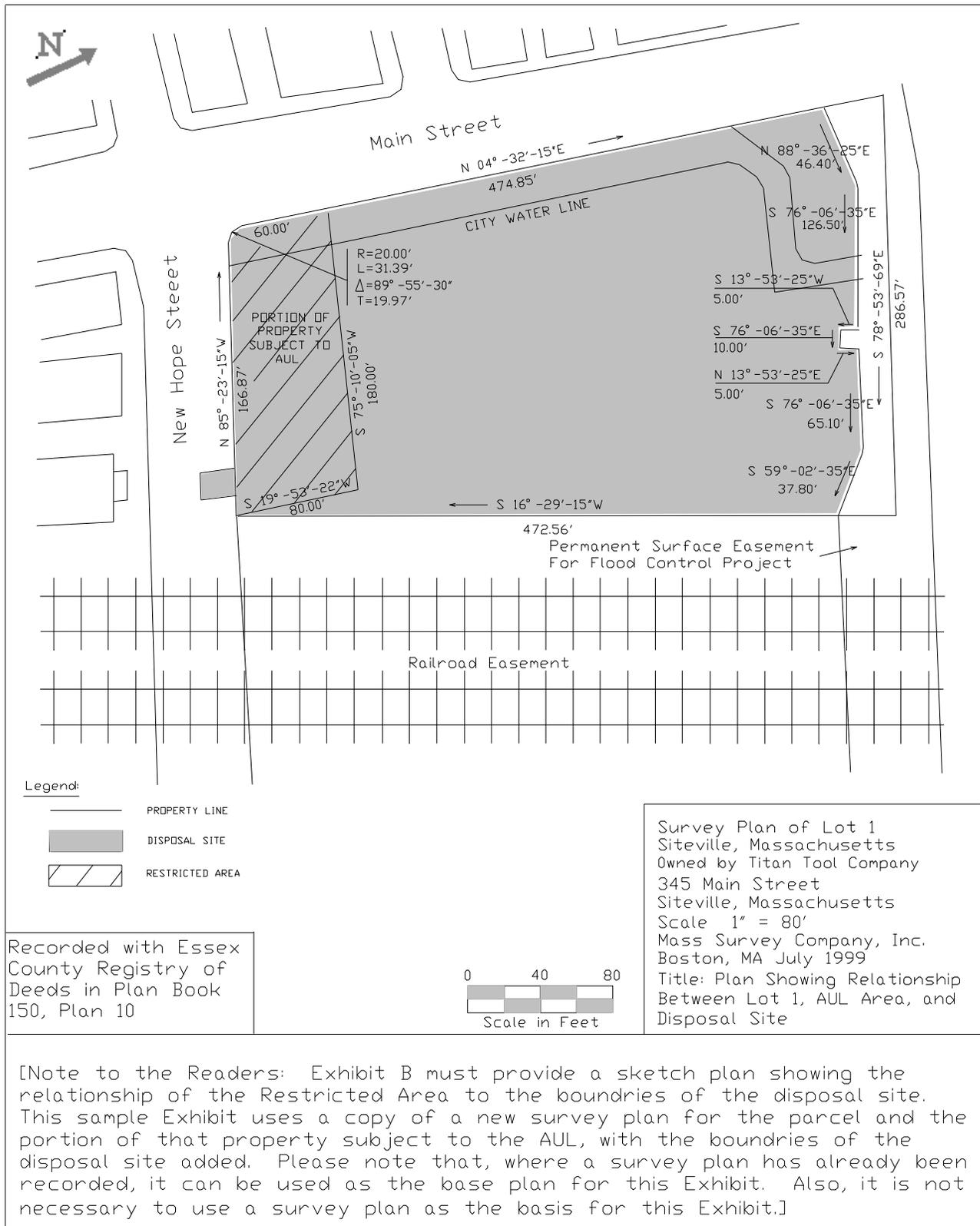


EXHIBIT C

ACTIVITY AND USE LIMITATION OPINION

In accordance with the requirements of 310 CMR 40.1074, this Activity and Use Limitation Opinion has been prepared for a portion of a parcel of land owned by the Titan Tool Company, Inc., located at 345 Main Street, Siteville, Essex County, Massachusetts 99999. As of the date of this Activity and Use Limitation Opinion, the property is zoned for commercial and industrial use. The property remains unpaved with no buildings or improvements thereon.

Site History

Titan Tool Company, Inc., manufactured tools at the subject property from 1940 through 1980. In 1993, the two-story manufacturing facility was demolished. Four underground storage tanks (USTs) containing #2 fuel oil and a large volume of petroleum-contaminated soil were removed from the southern portion of the property at that time.

In 1994, a 21E site investigation identified elevated levels of lead, arsenic, and petroleum hydrocarbons in soil samples collected from various surficial and subsurficial locations on the property. Titan Tool Company, Inc., notified the Massachusetts Department of Environmental Protection of these findings, as such findings triggered certain notification requirements of the Massachusetts Contingency Plan (the "MCP", 310 CMR 40.0000).

[Note: The "MCP" is the Commonwealth of Massachusetts' code of regulations for the notification, assessment, and cleanup of disposal sites where a release of oil and/or hazardous materials has occurred.]

A Phase II Comprehensive Site Investigation was conducted at the site in 1997. The results of the investigation indicate that lead and arsenic levels below the MCP Method 1, S-1 Soil Standards are present in surficial and subsurficial soil throughout the property. Concentrations of Extractable Petroleum Hydrocarbons (EPH) which exceed the MCP Method 1, S-1 Standards but meet the Method 1, S-3 Soil Standards exist in soil located at 4 to 8 feet below surface grade at the former location of the fuel oil USTs (See Exhibit B, Sketch Plan). EPH concentrations in soil at other locations on the property meet the Method 1, S-1 Soil Standards. Lead, arsenic, and petroleum hydrocarbons were not detected in groundwater samples collected from six on-site monitoring wells during four separate groundwater sampling events.

[Note: The "MCP Method 1 Cleanup Standards" refer to numerical standards for chemical contaminants in soil and groundwater which are published in the MCP. The soil standards are broken into three soil categories: S-1, S-2, and S-3. The S-1 Soil Standards are the most strict, or lowest, numerical values since they were derived to be protective of a residential exposure scenario by considering a receptor's incidental ingestion and dermal contact exposures to soil while gardening and playing. The S-2 and S-3 numerical standards are less strict and therefore higher, having been developed using passive recreational and construction-related exposure scenarios, respectively.]

Reason for Activity and Use Limitation

A Method 1 Risk Characterization was conducted to evaluate the risk posed by contamination remaining in soil at the site. Using the Method 1 approach, concentrations of lead, arsenic, and extractable petroleum hydrocarbons (EPH) remaining in soil were compared to the MCP Method 1 Soil Standards to determine if the site poses a risk for current and future activities and uses.

The Method 1 Risk Characterization concluded that the site poses No Significant Risk to health, safety, public welfare or the environment for current conditions of commercial and/or industrial uses of the property because contaminant concentrations remaining in soil met the applicable Method 1, S-2 and S-3 Soil Standards for the site. Levels of lead and arsenic measured in soil also met the lower Method 1, S-1 Soil Standards and pose No Significant Risk for unrestricted future site activities and uses.

However, since levels of extractable petroleum hydrocarbons in soil located at 4 to 8 feet below surface grade in the southern portion of the site exceeded their respective Method 1, S-1 Standards, an unacceptable risk exists should future activities and uses of this portion of the property result in unrestricted human exposure to the soil, such as those associated with a child's exposure through direct contact and/or ingestion. Therefore, in order to ensure that such exposures do not occur and that a condition of No Significant Risk be maintained for future activities and uses, an Activity and Use Limitation is required to restrict certain activities and uses of this portion of the property.

Permitted Activities and Uses

- (i) Commercial and/or industrial uses and activities associated therewith, including, but not limited to, pedestrian and/or vehicular traffic, landscaping, and routine maintenance of landscaped areas, which do not cause and/or result in the disturbance and/or the re-location of petroleum-contaminated soil located at 4 to 8 feet below surface grade;
- (ii) Short-term (three months or less) underground utility and/or construction activities including, but not limited to, excavation (including emergency repair of underground utility lines), which are likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade, provided that such activities are conducted in accordance with Obligations/Conditions (i) and (ii) in Section 3 of this Activity and Use Limitation Opinion (“Opinion”), the soil management procedures of the MCP cited at 310 CMR 40.0030, and all applicable worker health and safety practices pursuant to 310 CMR 40.0018;
- (iii) Activities and uses which are not identified in this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and
- (iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this Paragraph.

Activities and Uses Inconsistent with AUL Opinion

- (i) Use of the portion of the property as a residence, school (with the exception of adult education), daycare, nursery, recreational area (such as a park or athletic fields), and/or any other use at which a child’s presence is likely;
- (ii) Any activity including, but not limited to, excavation, which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade associated with underground utility and/or construction work, without prior development and implementation of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (I) and (ii) of Section 3 of the AUL;
- (iii) Any activity which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade for a period of time greater than three months, unless such activity is first evaluated by an LSP who renders an Opinion stating that such activity is consistent with maintaining a condition of No Significant Risk and that such activity is conducted in accordance with Obligations (i) and (ii) of Section 3 of this AUL;and
- (iv) Relocation of petroleum-contaminated soil located at 4 to 8 feet below surface grade, unless such relocation is first evaluated by an LSP who renders an Opinion stating that such relocation is consistent with maintaining a condition of No Significant Risk.

Obligations and Conditions

- (i) A Soil Management Plan must be prepared by a Licensed Site Professional (LSP) prior to the commencement of any activity which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade. The Soil Management Plan should describe appropriate soil management, characterization, storage, transport and disposal procedures in accordance with the provisions of the MCP cited at 310 CMR 40.0030 et seq. Workers who may come in contact with the petroleum-contaminated soil should be appropriately trained on the requirements of the Plan, and the Plan must remain available on-site throughout the course of the project;
- (ii) A Health and Safety Plan must be prepared and implemented prior to the commencement of any activity which may result in the disturbance of petroleum-contaminated soil located at 4 to 8 feet below surface grade. The Health and Safety Plan should be prepared by a Certified Industrial Hygienist or other qualified individual appropriately trained in worker health and safety procedures and requirements. The Plan should specify the type personal protection, engineering controls, and environmental monitoring necessary to prevent worker and other potential receptor exposures to petroleum-contaminated soil through ingestion,

dermal contact, and inhalation. Workers who may come in contact with the petroleum-contaminated soil should be appropriately trained on the requirements of the Plan , and the Plan must remain available on-site throughout the course of the project; and

- (iii) The petroleum-contaminated soil located at 4 to 8 feet below surface grade must remain at depth and may not be relocated, unless such activity is first evaluated by an LSP who renders an Opinion which states that such activity poses no greater risk of harm to health, safety, public welfare, or the environment and ensures that a condition of No Significant Risk is maintained.

LSP: _____
Sam Geologist, Licensed Site Professional

DATE: _____



Exhibit D

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Release Tracking Number

Pursuant to 310 CMR 40.1070 - 40.1084 (Subpart J)

3 - 0000

COMPLETE THIS FORM AND ATTACH AS AN EXHIBIT TO THE AUL DOCUMENT TO BE RECORDED AND/OR REGISTERED WITH THE REGISTRY OF DEEDS AND/OR LAND REGISTRATION OFFICE.

A. LOCATION OF DISPOSAL SITE AND PROPERTY SUBJECT TO AUL:

Disposal Site Name: Titan Tool Company
Street: 345 Main Street
City/Town: Sterville
Location Aid: near intersection of New High St.
ZIP Code: 99999
Address of property subject to AUL, if different than above. Street: _____
City/Town: _____ ZIP Code: _____

B. THIS FORM IS BEING USED TO: (check one)

- Provide the LSP Opinion for a Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1074 (complete all sections of this form).
- Provide the LSP Opinion for an Amended Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1081(4) (complete all sections of this form).
- Provide the LSP Opinion for a Termination of a Notice of Activity and Use Limitation, pursuant to 310 CMR 40.1083(3) (complete all sections of this form).
- Provide the LSP Opinion for a Grant of Environmental Restriction, pursuant to 310 CMR 40.1071, (complete all sections of this form).
- Provide the LSP Opinion for an Amendment of Environmental Restriction, pursuant to 310 CMR 40.1081(3) (complete all sections of this form).
- Provide the LSP Opinion for a Release of Environmental Restriction, pursuant to 310 CMR 40.1083(2) (complete all sections of this form).

C. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

- > if Section B indicates that a Notice of Activity and Use Limitation is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1074(1)(b);
- > if Section B indicates that an Amended Notice of Activity and Use Limitation is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080(1) and 40.1081(1);
- > if Section B indicates that a Termination of a Notice of Activity and Use Limitation is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083(3)(a);
- > if Section B indicates that a Grant of Environmental Restriction is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1071(1)(b);
- > if Section B indicates that an Amendment to a Grant of Environmental Restriction is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080(1) and 40.1081(1);
- > if Section B indicates that a Release of Grant of Environmental Restriction is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083(3)(a).

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

SECTION C IS CONTINUED ON THE NEXT PAGE.



ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Release Tracking Number

Pursuant to 310 CMR 40.1070 - 40.1084 (Subpart J)

3 - 0000

C. LSP OPINION: (continued)

LSP Name: Sam Geologist LSP #: 461 Stamp:
Telephone: (978) 555-1212 Ext.: 52
FAX: (978) 555-1200
LSP Signature: Sam Geologist
Date: 7-8-97



YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS
FORM OR DEP MAY FIND THE DOCUMENT TO BE INCOMPLETE.

Legal Notice of Notice of Activity and Use Limitation

(to be published in a newspaper which circulates in the community in which the property subject to the AUL is located within 30 days of recording the Notice of Activity and Use Limitation with the Registry of Deeds; copy of published Legal Notice to be provided to the appropriate regional office of MADEP within 7 days of publication)

NOTICE OF ACTIVITY AND USE LIMITATION

**Site Name: Titan Tool Company
Site Address: 345 Main Street, Siteville, MA 99999
MADEP Release Tracking Number 3-0000**

Pursuant to the Massachusetts Contingency Plan (310 CMR 40.1073(7)), a **NOTICE OF ACTIVITY AND USE LIMITATION** on the above disposal site has been recorded with the **ESSEX COUNTY REGISTRY OF DEEDS (Southern District)** on **JULY 3, 1997** in Book 200, Page 20 [*or Instrument Number if Book and Page numbers not yet assigned by Registry*].

The **NOTICE OF ACTIVITY AND USE LIMITATION** (“AUL”) limits the following activities and uses on that portion of the above property as identified in the AUL as the “AUL Area”:

- (i) Use of the portion of the property as a residence, school, daycare, nursery, recreational area, such as a park, and/or other use at which a child’s presence is likely;
- (ii) Any activity including but not limited to, excavation, which is likely to disturb of petroleum-contaminated soil located at 4 to 8 feet below surface grade within the AUL Area and which is not conducted in accordance with a Soil Management Plan and a Health and Safety Plan prepared and implemented prior to the commencement of such activity;
- (iii) Any activity which is likely to disturb petroleum-contaminated soil located at 4 to 8 feet below surface grade for a period of time greater than three months, unless such activity is first evaluated by an LSP who renders an Opinion stating that such activity is consistent with maintaining a condition of No Significant Risk; and
- (iv) Relocation of petroleum-contaminated soil located at 4 to 8 feet below surface grade, unless such activity is first evaluated by an LSP who renders an Opinion stating that such relocation is consistent with maintaining a condition of No Significant Risk.

Any person interested in obtaining additional information or reviewing the **NOTICE OF ACTIVITY AND USE LIMITATION** and the disposal site file may contact Joseph Smith, Senior Environmental Officer of the **TITAN TOOL COMPANY, Inc., 345 MAIN STREET, SITEVILLE, MA 99999** at **(978) 555-1111, extension 151**.

Notice to Public Officials of Recording of Notice of Activity and Use Limitation

(to be provided within 30 days of recording Notice of AUL)

22 July 1997

Chief Municipal Officer
Siteville City Hall
1234 Main Street
Siteville, MA 99999

Ladies and Gentlemen:

The purpose of this letter is to inform you that on July 3, 1997, a Notice of Activity and Use Limitation ("AUL"), a copy of which is enclosed, was recorded with the Essex County Registry of Deeds (Southern District) in Book 200, Page 20. The AUL affects a portion of the Titan Tool Company, Inc. property located at 345 Main Street in Siteville, Massachusetts 99999. It identifies certain activities and uses which are inconsistent with maintaining a condition of No Significant risk at the subject property. Such activities and uses are so identified in order to prevent exposures to residual petroleum-contaminated soil located in the southern portion of the property at 4 to 8 feet below surface grade. The AUL identifies those activities and uses which are consistent with maintaining a condition of No Significant Risk and those obligations and conditions necessary to ensure that a condition of No Significant Risk continues to exist at the property for the foreseeable future.

This public notification is being provided pursuant to the Massachusetts Contingency Plan, 310 CMR 40.1090 and 310 CMR 40.1403(7)(a). If you have any questions, please contact Joseph Smith, Senior Environmental Officer of the Titan Tool Company, Inc. at (978) 555-1111, extension 151.

Very truly yours,

Ernest C. Greene
President
Titan Tool Company, Inc.

CC: DEP
Northeast Regional Office

with Enc.

Note to Readers: The same letter should also be sent to the Siteville Health Officer, Building Code Enforcement Official, and Zoning Official.

CLERK'S CERTIFICATE

I, Mary E. Smith, DO HEREBY CERTIFY:

THAT I am the Clerk of Titan Tool Company, Inc., a Massachusetts corporation having a principal place of business at 345 Main Street, Siteville, Massachusetts ("Corporation") and that at a meeting of the Board of Directors of the Corporation duly called and held at the office of the Corporation at 345 Main Street, Siteville, Massachusetts, on the 5th day of June, 1995, all the directors being present and voting at all times, the following resolution was unanimously adopted:

VOTED: That the President, Treasurer or Clerk be, and any one of them is, hereby authorized and directed in the name and on behalf of the Corporation to purchase real or personal property for the Corporation in his or her discretion; to sell, mortgage or lease any and all real estate owned or which may hereafter be owned by the Corporation, as any one of them shall deem expedient and proper in carrying out the business of the Corporation, and in connection therewith to sign in the name and on behalf of the Corporation, seal with the corporate seal, acknowledge and deliver any mortgages, deeds, promissory notes, and other instruments of every nature, which may be necessary or proper in carrying on the business of the Corporation, and to do any and all acts necessary and proper for imposing restrictive covenants and agreements on any property now or hereafter owned by said Corporation. This vote shall remain in full force and effect until an instrument revoking the same shall have been recorded in the Essex County Registry of Deeds (Southern District).

I DO FURTHER CERTIFY that the above vote has not been altered, amended, rescinded or repealed.

I DO FURTHER CERTIFY THAT the Corporation is a duly organized corporation; that the foregoing vote is in accordance with the charter and by-laws of the Corporation; that Ernest C. Greene is the duly elected and qualified President and Treasurer of the Corporation, and that I am the duly elected and qualified Clerk of the Corporation.

Dated this 2nd day of July, 1997.

ATTEST: _____

A true copy
Mary E. Smith, Clerk

ATTEST: _____

Ernest C. Greene
President and Treasurer

For more information:

- ❖ Copies of AUL forms and BWSC transmittal forms are available from DEP's Service Centers in each Regional Office.

DEP Central Region
627 Main Street
Worcester, MA 01605
(508) 792-7650

DEP Northeast Region
205A Lowell Street
Wilmington, MA 01887
(978) 661-7600

DEP Southeast Region
20 Riverside Drive
Lakeville, MA 02347
(508) 947-6557

DEP Western Region
436 Dwight Street
Suite 402
Springfield, MA 01103
(413) 784-1149

- ❖ For information about the LSP Program, a list of currently licensed LSPs and information about disciplinary actions by the Board of Registration of Hazardous Waste Site Cleanup Professionals, please check the Board's Web site (www.state.ma.us/lsp) or call the Board's Office (617/556-1091).
- ❖ The MCP is available at the State House Bookstore in Boston and the Western Office of the Secretary of State in Springfield. To order, please call either 617-727-2834 in Boston or 413-784-1378 in Springfield for exact prices and postage charges.
- ❖ Electronic copies of the MCP, this document, and many other DEP publications are available on the World Wide Web at <http://www.state.ma.us/dep>.