

**Release Abatement Measure (RAM) Plan  
for the  
Former Test Range Berm Area and the Cold Waste Area**

**NATIONAL FIREWORKS SITE  
RTN 4-0000090  
HANOVER, MA**

*Prepared for:*  
**The Fireworks Site Joint Defense Group**

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## **ABBREVIATIONS AND ACRONYMS**

bgs	below ground surface
BIP	blow-in-place
BMP	best management practice
BOL	bill of lading
CAM	Compendium of Analytical Methods
CC	Town of Hanover Conservation Commission
CFR	Code of Federal Regulations
CMR	Code of Massachusetts Regulation
COC	chain of custody
CWA	Cold Waste Area
CY	cubic yards
DPW	Town of Hanover Department of Public Works
DU	decision unit
EDD	Electronic Data Deliverable
EMI	electromagnetic induction
EP	Extraction Procedure
EPA	U.S. Environmental Protection Agency
ESS	Environmental Safety Supervisor
FP	fixed price
FSJDG	Fireworks Site Joint Defense Group
FTRBA	Former Test Range Berm Area
FUR	fixed unit rate
HASP	Health and Safety Plan
HO	Home Office
IDW	investigation-derived waste
IRA	Immediate Response Action
ISM	incremental sampling methodology
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MPPEH	material potentially presenting an explosive hazard
NOI	Notice of Intent
NOR	Notice of Responsibility
NPDES	National Pollutant Discharge Elimination System
OOC	Order of Conditions (Hanover Wetlands Protection By-Law #6-14)
PDA	personal digital assistant
PPE	personal protective equipment
QA/QC	quality assurance/quality control
RAM	Release Abatement Measure
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RTN	Release Tracking Number
SCCA	Southern Conservation Commission Area
SDG	sample delivery group



Site	Fireworks Site
SOP	Standard Operating Procedure
SOW	Scope of Work
SVOC	semi-volatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
T&D	transport and disposal
TAL	Target Analyte List
TAT	turnaround time
TBD	To Be Determined
TCLP	Toxicity Characteristic Leaching Procedure
UCL	Upper Concentration Limit
UXO	unexploded ordnance
VOC	volatile organic compound
WPA	Wetlands Protection Act
WSC	MassDEP Waste Site Cleanup
XRF	x-ray fluorescence

## **1.0 INTRODUCTION**

This Release Abatement Measure (RAM) Plan describes proposed risk reduction activities to be performed at two areas at the Fireworks Site (Site) (RTN #4-0090 Tier IA #100223). The Site is located in Hanover, Massachusetts, and is comprised of approximately 240 acres, portions of which have a history of use, storage, and disposal of potentially hazardous materials associated with the manufacture and development of munitions and pyrotechnics.

This RAM Plan describes the excavation and off-site removal of metallic debris, construction debris, and contaminated soil associated with historical operations at the Fireworks facility. This work focuses on the Former Test Range Berm Area (FTRBA) and the Cold Waste Area (CWA) of the Site (see Figure 1-1 for the overall Site layout and Figure 1-2 for more details on the two areas addressed in this RAM Plan). Both Areas are in the portion of the Site referred to as the Southern Conservation Commission Area (SCCA). The risk reduction activities proposed for these Areas were originally contemplated as two separate RAMs. The initial reasoning for this planning was because work in the CWA will be performed within a Wetland Resource Area and associated buffer zone, while the work in the FTRBA (with the exception of stormwater management) is located outside any Wetland Resource Area or buffer zone. Because efficiencies in planning and performance will arise from conducting the work in both Areas concurrently and there is a need to address stormwater management during activities in both Areas, this single RAM Plan describes the work in both the FTRBA and CWA. The Scope of Work (SOW) for the RAMs was submitted to the Massachusetts Department of Environmental Protection (MassDEP) on October 17, 2016, and MassDEP issued a Conditional Approval of the SOW by letter dated October 21, 2016.

The FTRBA is located on a hillside and is approximately 300 feet wide by 100 feet long along the berm face. The FTRBA is located within a wooded area in the southeastern portion of the Site (see Figure 1-2). Removal of the embedded metallic and construction debris will require excavation to a depth of approximately 36 inches along the berm face (generating roughly 3,300 cubic yards (CY) of excavated debris and soil). The CWA is a fenced area approximately 130 feet by 70 feet located on the shoreline of Factory Pond (also shown on Figure 1-2). Removal of the metallic debris in this area will be accomplished by excavating soil down to, but not into, the top of the groundwater table, which is expected to be at an average depth of 18 inches below ground surface (bgs). This excavation is expected to generate roughly 500 CY of excavated debris and soil.

A Notice of Intent (NOI) under the Wetlands Protection Act (WPA) (310 CMR 10) was submitted to the Hanover Conservation Commission (Cons Com) on March 1, 2017. The NOI sought permission to conduct work in the CWA and provided a description of the work in the FTRBA. The Cons Com held a public hearing on the NOI on March 15, 2017. The Cons Com voted to issue an Order of Conditions for the project with several specific special conditions. The special and general conditions included in the Order of Conditions are incorporated by reference into this RAM Plan, as appropriate. A copy of the Order of Conditions, dated April 6, 2017, is included as Appendix A.

## **2.0 RESPONSIBLE PARTY INFORMATION (310 CMR 40.0444(1)(A))**

The Potentially Responsible Party implementing this RAM Plan is the:

Fireworks Site Joint Defense Group (FSJDG), also referred to as the “Cooperating Parties”  
c/o Michelle N. O’Brien, Esq.  
Pierce Atwood, LLP  
100 Summer Street, 22<sup>nd</sup> Floor  
Boston, MA 02110

The Licensed Site Professional (LSP) for this Site is:

Lawrence E. Kahrs, LSP #2890  
Tetra Tech, Inc.  
160 Federal Street, 3<sup>rd</sup> Floor  
Boston, MA 02110

MassDEP issued Notices of Responsibility (NORs) for the Site to the Cooperating Parties and others on October 20, 1995, after conducting soil, groundwater, surface water, sediment, and fish tissue sampling for mercury, lead, and other metals. The Cooperating Parties, with financial support from the United States Department of Defense, have conducted the previous work under the Massachusetts Contingency Plan (MCP) at the Site, including the:

- Phase I Initial Site Investigation and Tier Classification;
- Phase II Comprehensive Site Assessment investigations (conducted in four subparts, generally by media);
- Draft Phase III Identification, Evaluation and Selection of Comprehensive Remedial Actions; and
- Other supporting studies, investigations and evaluations.

The owner of the property containing the FTRBA and CWA is the Town of Hanover, acting by and through the Hanover Cons Com.

## **3.0 SITE LOCATION/HISTORY AND TIER CLASSIFICATION (310 CMR 40.0444(1)(B))**

### **3.1 SITE DESCRIPTION**

The Site consists of approximately 240 acres in the Town of Hanover, Plymouth County, Massachusetts. It is comprised of both surface water bodies (i.e., ponds and streams and associated wetlands) and upland areas. The Site is currently owned by more than 40 different public and private entities, including the Town of Hanover and the Town of Hanover Cons Com. None of the Cooperating Parties owns any property at the Site. The overall Site is generally bounded on the east by Winter Street, on the west by King Street, on the north by First Street, and on the south by Factory Pond. The Drinkwater River and Torrey Brook flow generally south/southwest through

the Site toward Lily Pond and Factory Pond. Factory Pond discharges to the Indian Head River, which flows eastward to the North River.

### **3.2 HISTORY OF SITE USAGE**

Historical activities at the Site included research, development and manufacture of munitions and pyrotechnics for the United States Government, and some commercial manufacture of civilian fireworks. Lead, mercury, and some organic solvents, among other chemicals, were used in Site manufacturing operations. Several companies operated at the Site until it closed around 1970. The Town of Hanover purchased approximately 130 acres of the Site in the general area of Factory Pond for conservation and a public works facility. The remaining acreage was sold in May 1983, and subsequently subdivided into a variety of smaller parcels. Today, the northern portion of the Site is a multi-tenant, commercial/industrial park with some abandoned structures. The central and southern areas contain some industrial and commercial use, but are largely woodland, wetlands and open surface water bodies.

The metallic debris and soil contamination in the areas addressed by this RAM Plan is believed to have resulted from historic test firing in relation to the FTRBA and waste disposal activities at the CWA conducted from the mid-1940s to the late-1980s. Figure 3-1 shows an aerial photograph taken in 1964 of the southern portion of the Site, showing these two areas.

Records of past operations identify the CWA as the primary area designated for the disposal of munitions-related items that did not contain energetic material or that had been previously de-energized by burning or detonation. The nature of the munitions-related items previously found in this area supports this determination regarding the former use of the CWA. However, there is the potential for energetic munitions-related items to be found in this area that were not properly or completely de-energized prior to disposal. This possibility led to the installation of secure fencing around the CWA many years ago. Since installation, the fence has been checked periodically and is maintained to provide an effective barrier to incidental access to the area and potential contact with any energetic items that may be present within the area.

The FTRBA was the backstop for the test range where rounds manufactured at the facility were test-fired. Historical documentation indicates that the range included at least a near firing position (located a short distance in front of the berm) and a far firing position (located to the west on the opposite side of Factory Pond). Records indicate that the tests generally were to evaluate the flight stability of the rounds and that inert (non-explosive) rounds were used in the tests. Exploratory trenching into the berm in 2012 revealed only inert projectiles from this test firing. While more inert projectiles are likely to be found, it is possible that a round containing energetic residuals may also be found. This possibility has been anticipated and reflected in this RAM Plan.

### **3.3 HISTORICAL REMEDIAL ACTIVITIES IN THE RAM AREAS**

A series of investigation and assessment activities has been performed at the Site in accordance with the MCP, beginning in 1997. A number of these activities related to one or both of the areas being addressed by this RAM Plan:

- A Phase I investigation was undertaken which focused on several areas of concern identified early on by MassDEP with the goal of providing sufficient data to be used to Tier classify the Site under the MCP.
- The Phase I Report (Foster Wheeler, 1997), Tier Classification, and Tier IA Permit Application were submitted to MassDEP on October 20, 1997. A Tier IA Permit (Permit No. 100223) was issued to the FSJDG with an effective date of July 27, 1998.
- A Phase IIA Investigation was performed that focused on a site-wide groundwater assessment. This initial investigation did not indicate any significant groundwater contamination in the vicinity of the two areas addressed by this RAM.
- The Phase IIB Investigation was conducted in 2000 that included field x-ray fluorescence (XRF) screening and fixed laboratory analysis of background soil samples and soil samples from the FTRBA and the CWA. All soil boring samples were field screened for total mercury, lead, and volatile organic compounds (VOCs). The concentrations of antimony, barium, lead, and zinc in the shallow soil at the CWA exceeded their respective Upper Concentration Limits (UCLs), as described in 310 CMR 40.0996(6). Therefore, these soils present a Risk to Public Welfare, as well as a Risk to Human Health and the Environment, as defined in the MCP. Four inert munition debris items also were found and removed from the CWA during this field effort. For these reasons, a permanent fence was installed around the CWA under an Immediate Response Action (IRA) in 1999 to isolate the area from recreational users until it could be remediated.
- The Phase IIC Investigation was conducted in 2001. This investigation focused on sediment, surface water, and groundwater sampling, a groundwater flow evaluation, and a bathymetric survey of the ponds. Soil borings in the southern portion of the Site were used to establish background conditions. The soil samples were analyzed for the Target Analyte List (TAL) metals, hexavalent chromium, explosives, VOCs, and semi-volatile organic compounds (SVOCs). Other than the groundwater sampling, there was little activity in the RAM Areas (FTRBA and CWA) during this phase of investigation.
- The Phase IID Investigation was conducted in 2003, focusing on environmental risk characterization. This investigation included the collection of surficial and subsurface soil samples from the SCCA, which were analyzed for the TAL metals, total mercury, methylmercury, explosives, VOCs, SVOCs, and total cyanide. There was little investigation activity in the RAM Areas during this phase.
- A Draft Phase III Remedial Action Plan (RAP) was developed in 2007 to identify and evaluate comprehensive remedial alternatives for the areas of concern identified through the Comprehensive Site Assessment. The soils in the SCCA were addressed in the draft Phase III report. Based on the results of this report, data gaps were identified and additional sampling was recommended to enable a more refined and focused remedial cost estimate to be developed.

- A Supplemental Phase III Investigation was completed in late 2008 and early 2009 to fill the data gaps identified in the Draft RAP. This investigation involved collecting soil samples from the CWA and analyzing them for the Resource Conservation and Recovery Act (RCRA) 8 metals, explosives, VOCs, and SVOCs. During this investigation in 2008, magnetometer and electromagnetic induction (EMI) surveys were performed to estimate the footprint of buried metallic objects in the area. In addition, based on this survey, six exploratory trenches were dug in the vicinity (north and south) of the fenced CWA to characterize the nature and extent of the buried metallic debris potentially present outside of the existing fenced area. No indications of CWA-type wastes were observed in these trenches and soil evaluation indicated that the areas were relatively undisturbed.
- A Revised Draft Phase III RAP was submitted to MassDEP in 2009. This report updated the prior Draft Phase III RAP using the data from the Supplemental Phase III Investigation.
- The FTRBA was more thoroughly investigated in 2012. The additional activities included exploratory trenching at six locations in the hillside that were believed to be the backstop berm for the Former Test Range. Trenches were cut into the berm on each side of the two brick, concrete and timber rubble piles that were previously observed during reconnaissance. This debris appears to be remnants of historical target or other range-related structures. Similar trenches also were dug into the far left and right sides of the berm within the lateral bounds of the area indicated on the historical aerial photographs to be the FTRBA. Several projectiles from 20mm rounds were found during the trenching activities. A non-intrusive investigation of the two “bunker” locations depicted on the 1968 historical site base map (see Figure 3-2) was performed using hand-held metal detectors. A non-intrusive investigation of the locations of the “Environmental Test Facility” and “Test Slab” depicted on that 1968 historical site map also was performed.
- A Re-Baselining Sampling Investigation was conducted site-wide in 2015 largely in response to the occurrence of a long term storm event in March of 2010 that resulted in the highest flow volumes recorded for the local river/stream system in the 50 years of recording history. This massive influx of water caused most of the sediment characterization data and certain other prior sampling results to no longer be reliably representative of current Site conditions. In addition, the soil in a number of additional locations associated with the Former Test Range in the SCCA was sampled. These locations included:
  - an area in front of the far-range firing position;
  - an area containing heavy steel plates located down the hill from the far-range firing position (west of the Factory Pond foot bridge);
  - an area in front of the near-range firing position;
  - the Former Test Range floor in front of the FTRBA;
  - the FTRBA itself; and
  - a possible overshoot area above/behind the FTRBA.

These sampling results were used to determine soil leachability properties and establish the FTRBA soil characteristics relative to disposal requirements and disposal facility waste acceptance criteria.

### **3.4 NATURE AND EXTENT OF CONTAMINATION**

A condition of No Significant Risk to public welfare, as defined under the MCP, cannot be demonstrated based on a comparison of exposure point concentrations and UCLs at the CWA. Since concentrations of lead and nickel in the soil and groundwater exceed the UCLs at the CWA, this area also presents a risk to human health and the environment, as defined in the MCP (310 CMR40.0994 (3)).

Given the historical use of the Site and findings of previous investigations (which included the identification of geophysical anomalies in some areas), there may be metallic debris, projectiles, and items that are a potential source of contamination or could present a potential explosive hazard. Therefore, a risk to public safety exists at both the CWA and the FTRBA Areas. This RAM is intended to eliminate or reduce the risk to public safety at these areas at the Site. This RAM is also intended to reduce the risk to human health and the environment at both Areas, and the risk to public welfare at the CWA.

The current and foreseeable use of the Areas that are the focus of this work is as designated Conservation Land.

### **3.5 RELEVANT REGULATIONS**

The Fireworks Site is regulated under the MCP, 310 CMR 40.0000, and the proposed removal actions will be conducted under the provisions of 310 CMR 40.0444(1)(a)-(i).

As described above, the Wetlands Protection Act also applies to the Site, and this RAM Plan will be implemented in accordance with an Order of Conditions issued by the Town of Hanover Cons Com. In addition, because the proposed RAM actions will require the alteration of more than one acre of land where discharges could potentially enter a wetland or water of the United States, coverage under the EPA National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities is required. Tetra Tech will prepare a project-specific Stormwater Pollution Prevention Plan (SWPPP) for the project as required by the NPDES Construction General Permit.

The Cooperating Parties hereby certify that, based upon information and opinions provided by the LSP, sufficient financial resources are available to manage excavated materials in the manner and time frames specified at 310 CMR 40.0030.

### **4.0 RELEASE ABATEMENT MEASURE PLAN (310 CMR 40.0444(1)(A)-(I))**

This RAM Plan has been prepared in accordance with 310 CMR 40.0440 to serve as written notification to MassDEP of the intent to implement a RAM. The RAM consists of excavation and off-site removal of metallic debris, construction debris, and associated contaminated soil on property owned by the Town of Hanover. Work will be performed in accordance with all applicable federal, state, and local regulations, including, but not limited to the MCP and OSHA regulations (including, but not limited to, 29 CFR 1910.1000, 29 CFR 1926, and CFR 1910.120) and other applicable regulations regarding health and safety.

#### **4.1 HEALTH AND SAFETY PLAN (310 CMR 40.0441(6))**

A site-specific Health and Safety Plan (HASP) for the RAM activities was prepared as an update to the prior HASP that was used during the re-baselining sampling performed in 2015. The updated HASP is available upon request. The HASP documents methods to protect workers and the public and discusses health and safety procedures to be followed while implementing the RAM, including worker safety and health, chemical and physical hazards, and training requirements. Best management practices (BMPs) will be implemented throughout the RAM that also will enhance worker safety and the public safety. These include the installation and maintenance of erosion and sedimentation controls in the upland areas; turbidity barriers or other features required by the wetlands Order of Conditions around shoreline work areas; stockpile management procedures; and the decontamination of vehicles leaving the RAM work areas.

All field personnel, including subcontractors, will be required to review the updated HASP and provide written acknowledgment of their review. In addition, a tailgate safety meeting will be held at the beginning of each workday to discuss relevant or task-specific safety issues and precautions for that day. Site-specific Standard Operating Procedures (SOPs) have been developed for a number of the RAM activities and been incorporated into this RAM Plan integrally or by attachment. These will be revised or adjusted, as warranted, by any changed conditions encountered in the field.

Several former service roads and walking paths provide access to the RAM work areas. To protect the public during field operations, the existing roads/paths into the work areas will be blocked with a temporary construction fence and “No Trespassing” signs will be posted around the perimeter of the work area indicating that work is ongoing and the area is temporarily closed for public safety reasons (see Section 4.2.1 for more details). A safety-related construction exclusion zone will be set up around the work areas that will only be accessible to authorized personnel.

In accordance with 310 CMR 40.0018 of the MCP, the potential for fugitive dust or volatiles to be released from the site during the RAM was considered. No volatiles were among the contaminants associated with either the CWA or the FTRBA. As such, no gaseous contaminant releases are expected. Particulate generation during excavation or re-grading activities is possible, but is expected to be minimal. The soil removed from the CWA will not be completely dry and may be moist due to the shallow depth of the groundwater; the potential for dust emissions is low. The soil at the FTRBA will be drier but very sandy and not very susceptible to wind entrainment. Both work areas are located within wooded or thickly vegetated areas that will provide shielding from surface wind. In addition, the nearest public area to the work areas is the Waterford Housing Development to the east of the FTRBA. This area is separated from the work area by a forested hill. A treed and vegetated hill and approximately 500’ of horizontal distance separate the work area from the closest of the houses in this development. In light of the aforementioned characteristics, no air monitoring is warranted. Tetra Tech will, however, continue to evaluate conditions in the work areas during implementation of the RAM. If dusty conditions are created, the work will be adjusted and/or dust suppression using a fine water spray will be performed until the conditions no longer exist.



## **4.2 PROPOSED REMEDIAL ACTIVITIES**

The activities conducted under this RAM will take place in two areas of the Site: the FTRBA and the CWA. The objective of the RAM is to achieve conditions of “No Significant Risk” at the two areas by removing the surface and subsurface metallic debris, inert munitions debris and inert projectiles, potentially impacted soil, and any material potentially presenting an explosive hazard (MPPEH). This RAM Plan addresses the following major activities:

1. Site Access and Security;
2. Mobilization and Site Preparation;
3. Excavation and Screening of Soil with Metallic and Range-Related Debris;
4. Instrument-Assisted Inspection and Classification of the Excavated Material and Management of MPPEH;
5. Soil Handling and Sampling;
6. Analytical Methods;
7. Disposition of Soil and Excavated Debris;
8. Site Restoration and Environmental Monitoring; and
9. Demobilization.

A RAM Completion Report will be prepared at the conclusion of the field activities.

Each of these field activities is discussed further below.

### **4.2.1 Site Access and Security**

Work to be conducted under this RAM Plan will take place on property owned by the Town of Hanover and the Town of Hanover acting by and through the Hanover Cons Com. Vehicle access to the work areas will be via an access road through land owned by the Drinkwater Investment Corporation. In support of this RAM, updated access agreements between Tetra Tech and each entity (i.e., the Town of Hanover and the Drinkwater Investment Corporation) were executed.

Given that RAM work areas are in accessible public land, maintaining site security and protecting the public during the fieldwork was an important planning consideration. A series of meetings and communications with representatives of the Town of Hanover Fire Department and Police Department were held in anticipation of the RAM field mobilization.

Tetra Tech will establish restricted exclusion zones in association with the work areas to keep members of the public out of active excavation areas and areas of frequent vehicle and equipment movement. A warning sign, shown in Figure 4-1, will be posted at specific locations identified by the Town of Hanover Police Chief to deter unauthorized individuals from entering the work area. Temporary caution tape will be strung across the access roads that will not be actively used for RAM equipment and vehicle movement and some footpaths during the field work. Movable high visibility plastic fencing will be installed across the main access road through the Drinkwater Investment Corporation property into the work area to restrict access when the road is not in use for RAM activity. A sketch showing the locations of the public safety measures related to restricting site access (e.g., signage, fencing and caution tape) is provided in Appendix B.

Notification of abutters to the Site in the vicinity of the RAM work areas was discussed as part of the planning meetings with Town representatives. The Town agreed to identify the abutters that should be notified and to send a notification to them once Tetra Tech established a firm mobilization date for the RAM fieldwork. A pre-construction meeting will be held with the Town of Hanover prior to the beginning of the fieldwork. A project field schedule will be provided to the Town at that time. MassDEP also will be notified at the same time as the Town of Hanover, which will be at least 72 hours prior to field mobilization.

#### **4.2.2 Mobilization and Site Preparation**

Prior to mobilization, Tetra Tech will finalize procurements and subcontracts with the laboratories and the other required subcontractors and prepare the field equipment, supplies and personnel for mobilization to the Site. Concurrent with this activity, notification will be provided to the Town of Hanover and MassDEP. An inventory of available in-hand Tetra Tech supplies and equipment will be conducted prior to initiating the fieldwork and any additional required supplies and equipment will be secured. A sign will be displayed at the site that is not less than two square feet or more than three square feet bearing the words: “Massachusetts Department of Environmental Protection – File Number SE 31-1149”. The boundary of any delineated wetland near the work area will be marked by wooden stakes or flagging until the completion of the work.

Access to the work area will be via the Drinkwater Investment Corporation property (adjacent to the P.A. Landers operation). Access will be coordinated with the Drinkwater Investment Corporation (P.A. Landers) and strictly controlled at the entry control point. P.A. Landers has already improved the gravel roadway on the Drinkwater Investment Corporation property to a width of 22 feet to the boundary with the Town of Hanover property. Therefore, no additional access road improvements are needed or proposed on the Drinkwater Investment Corporation property.

The access roads on Town of Hanover property will be widened as needed to meet the requirements of Town and State emergency response vehicles and the RAM construction equipment. The current roadways vary in width from 8 to 12 feet. The access roads will be widened to 16 feet through the cutting of vegetation and limited stump removal, as necessary. All intrusive clearing, grubbing or tree removal activities will be performed with UXO technician support in case the ground disturbance exposes an item that may be MPPEH. Branches that currently overhang and block the access roads to be used during the RAM will be trimmed, and brush growing along the sides of the narrow access roads will be removed. An overhead clearance of 12 feet will be established for emergency vehicles and heavy machinery. The site preparation effort also will include spot repair of the most significant erosion gullies in the access roads through grading and the placement of dense grade aggregate material, where needed, to provide a smooth accessible surface. The portion of the access road directly in front of the CWA land-side gate will require significant repair and re-grading. Vegetation also will be cleared from the planned laydown areas where the excavated soil and debris will be staged and stockpiled.

Clearing activities will be performed by a subcontractor and will include (but are not limited to):

- Staking and flagging of the designated work areas. Flagging will consist of wooden stakes with high-visibility ribbon tied to the top. The flagging will be spaced adequately to allow operators to easily identify the designated work areas.
- Removal of surface debris from the access road corridor.
- Removal of existing standing trees, brush, downed timber, logs and other growth in the designated/flagged areas. Stumps shall be cut level with the ground surface. The cutting of mature trees will be minimized to the extent possible given the objectives of the RAM.
- Grubbing of stumps in designated areas, as required, based on a field determination.

The subcontractor shall supply all labor, equipment, personal protective equipment and supervision of personnel required to accomplish the clearing of the designated areas.

The choice of equipment to be used in clearing the brush/undergrowth shall be determined by the heavy equipment subcontractor.

The cut brush and small vegetation will be chipped on-site and placed at designated on-site locations as determined by the Cons Com Agent (typically on the existing walking paths). A number of large trees (both pine and hardwood) in certain areas to be excavated will need to be cut down. The branches and limbs from these trees also will be chipped and the chips placed on-site. Logs will be removed from the Site by the subcontractor. Stumps will be piled and then removed from the Site and disposed of at an approved facility.

After clearing the access roads, the subcontractor will set up the materials staging areas and will provide a port-o-john. Due to the relatively short duration of the fieldwork, project vehicles will be used in lieu of an on-site field office trailer.

The areas that will be used for screening and stockpiling soils are shown on Figure 4-2. The screening and stockpile area for soils from the CWA will be located in a previously disturbed portion of the Site largely underlain by asphalt pavement or hard-pack fill. Much of this area is not vegetated and the vegetation currently present is mostly scrub. The screening and stockpiling area for the FTRBA will require removal of a number of large pine trees. The berm itself is a relatively steep slope, so some clearing will need to be done upslope from the berm face. It should be noted that the area shown on Figure 4-2 may be adjusted in the field at the time of clearing to minimize large tree removal or remove trees that could cause a safety threat or slope stability problem.

As presented in the NOI and stated in the OOC, erosion and sediment controls will consist of filter socks at the down-gradient side of the work area. A silt (turbidity) curtain is proposed in Factory Pond to control the migration of silt and sediment. The silt curtain will have a skirt that is impermeable. This type of turbidity curtain is designed specifically for maximum silt control in ponds and lakes. Stockpiled soils will be underlain by polyurethane sheeting and covered daily with polyurethane sheeting until removed from the Site or re-used. All sedimentation barriers will be maintained in good condition until all disturbed areas are stabilized with vegetation or other means.

As part of site preparation at the CWA, the upland side of the existing chain-link fence will be removed. The rest of the existing fencing will remain in place until such time as no risk in the area

is determined. If additional metallic debris is found to be present below the groundwater table in the CWA, the upland side of the existing chain-link fence will be re-installed.

#### **4.2.3 Excavation and Screening of Soil with Metallic and Range-Related Debris**

Excavation and screening work will be completed by Tetra Tech Unexploded Ordnance (UXO) Technicians that have or will obtain a Massachusetts Hydraulics License to operate heavy machinery. The UXO Technicians conducting operations will be equipped with the following:

- Magnetometers and/or all-metals detectors;
- Appropriate means for marking anomalies to avoid;
- Appropriate brush cutting equipment;
- Field Logbook and/or personal digital assistant (PDA) for recording data;
- Camera;
- Communications equipment; and
- Appropriate PPE for brush cutting equipment.

A heavy equipment operator subcontractor will provide a screener with a 6-inch grizzly and 3-inch and 3/4-inch interchangeable screens for sifting purposes. The screener will be staged in the area south of the existing berm in the FTRBA (see Figure 4-2) and will be placed on polyethylene liner to prevent contact of excavated material with surface soil. The screener will be moved to the CWA work area when the FTRBA is complete and placed on polyurethane.

Once the UXO Technicians have completed the instrument-aided surface sweep, the designated locations will be excavated using a subcontractor-provided excavator. Excavated material will be removed in approximately 6" lifts and screened and classified by UXO personnel. The UXO personnel will use suitable hand-held metal and non-ferrous metal detector systems. A loader will be used to feed the excavated material into the screening plant. A UXO Technician will be positioned at a safe distance to continuously observe the 6-inch-plus and 3/4-inch-plus material coming off the screen for the potential presence of MPPEH.

Screened soil will exit the screener via conveyors after it passes through the 6-inch grizzly, 3-inch-plus and 3/4-inch-plus screens. A Tetra Tech UXO Technician will perform an instrument-assisted inspection of the screened material streams exiting the conveyers. When a suspect item is uncovered, Tetra Tech will treat it as MPPEH. The UXO Technician will then inspect the item, attempt to determine what it is, assess its condition and, if possible, make a positive determination as to whether it is Material Documented as Safe (MDAS) or Material Documented as an Explosive Hazard (MDEH) (see Section 4.2.4 below). The screened fines will be stockpiled on a liner adjacent to the screening operation for further inspection and/or sampling. The remainder of the material (6-inch-plus, 3-inch-plus, and 3/4-inch-plus) will exit the screens separately and will be staged in approximately 100 CY conical piles for further inspection and/or sampling.

If there is excavated soil to be disposed (based on sampling), it will be managed in compliance with the MCP (310 CMR 40.0030). Specifically, the soil will be stored on-site in conformity with 310 CMR 40.0036 (Management Requirements for Storing Remediation Waste) and required off-site transport & disposal (T&D) will be conducted pursuant to 310 CMR 40.0034 (Bill of Lading

Process). The soil will be profiled with a sampling and analytical testing program to determine if it requires removal from the Site and, if so, where it must be sent for disposal. Sampling of these piles is detailed below.

Soil to be removed from the designated areas of the FTRBA will be excavated to an approximate depth of 36 inches into the existing berm face. Soil removal at the FTRBA will continue until no more metallic range-related or munitions-related debris is encountered. Soil excavation in the CWA will be to the top of the existing groundwater table. Groundwater is not anticipated to be encountered above 18-inches bgs during excavation activities in the CWA. Excavation will be halted when groundwater is encountered. In addition, removal may reach out past the shoreline for a few feet into Factory Pond only to recover metallic items on the surface of or sticking out of the sediment. Care will be taken to minimize the disturbance and removal of sediment if this recovery is performed.

The following procedures will be adhered to while refueling heavy equipment at the Site:

- Refueling of equipment (e.g., backhoe, front end loader, screener) will only be performed on an impervious surface or in a designated area with secondary containment. A spill kit, including absorbent materials (e.g. speedi-dry), a shovel, and a hazardous waste drum, will be readily available to contain and control any spills occurring during refueling operations.
- A secondary containment area will be prepared beneath the refueling operations by using suitable liners and/or trays.
- A drip catch basin also will be used as secondary containment. The basin, capable of containing 15-20 gallons of fuel, will be placed under the nozzle of the refueling vehicle and the intake of the vehicle being refueled.
- All spills occurring during refueling operations, no matter how small, will be reported immediately to the on-site Hanover Fire Department representative.

#### **4.2.4 Instrument-Assisted Inspection and Classification of the Excavated Material and Management of MPPEH**

Potential explosive hazards will be minimized through the performance of the excavation work by UXO Technicians, and the use of properly trained and experienced staff, safe work practices, engineering controls, and adherence to proven procedures. Safety is the primary concern during activities in which items potentially presenting an explosive hazard could be encountered. In addition to Tetra Tech UXO personnel, a Hanover Firefighter also will be stationed at the Site during the intrusive activities in each area. Personnel engaged in these efforts will adhere to the provisions of the site-specific HASP. The Senior UXO Technician will have overall responsibility and accountability for all munitions-related activities. Only the designated UXO Technicians will be authorized to identify, classify, handle, and/or move munitions-related items in accordance with the approved plans and procedures.

If debris is recovered that is MPPEH, it will be inspected for purposes of classifying the item(s). If it is determined that the item(s) poses an explosive hazard, the on-site Hanover Firefighter will notify the Town of Hanover Fire Department, who will in turn notify the Town of Hanover Police Department. The Town of Hanover Fire Department will then notify the Massachusetts State Police Bomb Squad who will dispatch a team to the Site. Tetra Tech will secure the suspect item(s) until the Massachusetts State Police Bomb Squad arrives and takes control and responsibility for the item(s). The Massachusetts State Police Bomb Squad will be responsible for the transportation and/or local disposition of any items believed to pose an explosive hazard.

The on-site MPPEH handling procedure will be as follows:

- When a suspect item is uncovered, it will be treated by Tetra Tech as MPPEH. Tetra Tech's designated trained UXO Technician would then inspect the item, attempt to determine what it is, assess its condition and, if possible, make a positive determination as to whether it is MDAS or MDEH. The on-site Hanover Firefighter will be informed immediately of the discovery and be continually apprised of the classification progress.
- MDAS will be suitably containerized by Tetra Tech, accumulated and temporarily stored on-site in labeled 55-gallon drums, secured at the conclusion of each working day, eventually transported off-site, and de-militarized by melting or shredding; a Certificate of Destruction will be obtained. Tetra Tech will document each item by taking a photograph (individually or in a group of similar items) and recording the item on an Incident Report Form. All Incident Reports will be compiled into a weekly "Munitions Snapshot" log. A number of similar MDAS items may be documented as a group if they are discovered at the same location at the same time.
- If an item is classified as MDEH or as MPPEH that cannot be opened or unequivocally determined to be MDAS, Tetra Tech's designated UXO Technician will make an initial assessment as to whether the discovered item is safe to move or not.
- If the item is positively determined to be safe to move, it will be taken to a nearby location outside of the active excavation zone but within the construction safety exclusion zone, where it will be secured and guarded by Tetra Tech. Tetra Tech will document the item by taking a photograph and recording the item on the Incident Report Form. The on-site Hanover Firefighter also will assess the item and determine if it may be left at this location until the end of the work day or if it must be removed and disposed at that time. The Hanover Firefighter will notify others at the Town of Hanover Fire Department with the details of the discovered item and situation. Tetra Tech will notify MassDEP at the same time that the Hanover Firefighter notifies other members of the Hanover Fire Department. Members of the Town of Hanover Fire Department or the Hanover Police Department will respond to the notification as the Town of Hanover Fire Chief directs, ensure the security of the item, and notify the Massachusetts State Police Bomb Squad, as required. Tetra Tech will secure and guard the item until the Town of Hanover Fire Department or the Massachusetts State Police Bomb Squad assumes responsibility for its security and disposition.

- If the item is determined to not be safe to move, it will be left in place and the field team will pull back from the immediate area to at least a distance determined by the Senior UXO Supervisor. The on-site Hanover Firefighter may provide input to this determination as appropriate. All work within that evacuation distance will be stopped. Without moving the item, Tetra Tech will document it to the extent possible without moving or uncovering it by taking a photograph and recording the item on an Incident Report Form. The Hanover Firefighter will notify others at the Town of Hanover Fire Department and/or the Hanover Police Department of the situation. Tetra Tech will secure and guard the item until the Hanover Fire Department or Hanover Police Department takes over its security. The Hanover Fire Department will notify the Massachusetts State Police Bomb Squad of the discovery.
- An ambulance, a Town of Hanover Fire Department fire truck, and Town of Hanover Police personnel will be sent to the Site at every notification to the Massachusetts State Police Bomb Squad. Once the Massachusetts State Police Bomb Squad arrives at the Site, they will take over the handling and disposal of the discovered item and make their own assessment of the situation. At their discretion and in consideration of the risks to the public, workers, facilities and equipment, the Massachusetts State Police Bomb Squad may:
  - Determine that the item must be destroyed where it is;
  - Determine that careful movement of the item, for a limited distance and using their prescribed procedures, is both necessary and allowed. In such circumstances, destruction may be performed by the Massachusetts State Police Bomb Squad in the general vicinity of discovery;
  - Determine that the item may be moved to a suitable on-site location that has been prepared for destruction by detonation and destroyed; or
  - Determine that the item may be moved to a suitable off-site location and destroyed.
- Tetra Tech will document the final disposition of the item in the item's Incident Report Form. If the item is destroyed by detonation on-site, Tetra Tech will take a post-Blow-in-Place (BIP) surface soil sample using either the established "7-wheel composite" or the incremental sampling methodology (ISM) over a specific area of defined size and analyze it for explosives compounds. No pre-BIP soil sampling is proposed. If requested, Tetra Tech will coordinate with the Massachusetts State Police Bomb Squad to prepare a safe on-site location for the destruction of MDEH and any MPPEH that cannot be opened or determined to clearly be MDAS through clearing or the placement of engineering controls (such as sand bags, an earthen cover, or other controls specified by the Massachusetts State Police Bomb Squad). Inert debris from any on-site detonations will be recovered and containerized by Tetra Tech for subsequent demilitarization, certification, and disposal.
- The Tetra Tech Field Operations Lead / Environmental Safety Supervisor (ESS) will maintain a daily log of the Town of Hanover Fire Department, Town of Hanover Police

Department and Massachusetts State Police Bomb Squad personnel present on-site for purposes of accountability and future cost reimbursement. The log will record the person's name, affiliation, date, time arriving on-site, time leaving the site, and purpose for being on-site. The Massachusetts State Police Bomb Squad also will record and log every demolition shot they perform. This log also will itemize the types and numbers/amounts of materials consumed in the disposal activities (e.g., perforators, detonating cord, delay Primadets, explosive boosters). The Tetra Tech Senior UXO Supervisor will compile a daily report documenting all munitions-related activities.

If the RAM uncovers multiple MDEH or MPPEH items that cannot be opened or clearly determined to be MDAS in either the FTRBA or the CWA, the work at the Site will stop and the Site will be secured until a new path forward for managing these and any similar items potentially present is developed by Tetra Tech, the Town of Hanover, the Massachusetts State Police Bomb Squad, and MassDEP. While this possibility has been recognized and contingency plans discussed, the complete new path forward is beyond the scope of this RAM and is not described in this RAM Plan.

#### **4.2.5 Soil Handling and Sampling**

Soil sampling will be performed with various objectives to support the RAM. These objectives include: the characterization of soil and debris for materials handling and waste disposal; establishing the residual soil concentrations at the limits of the excavations; and testing any soil imported for fill or restoration for acceptability.

##### **4.2.5.1 Characterization of the Separated Screened Soil**

Excavated soil that is separated from the metallic and construction debris will be sampled following the screening operation. Screened soil will have passed through a series of screens (e.g., 6-inch grizzly, 3-inch-plus, and 3/4-inch-plus screens). The screened fines (less than 3/4 inch) will be placed in batches on a polyethylene liner in the staging area to prevent the excavated material from contacting and mixing into the native surface soil of the staging area. Each batch of screened soil will typically not exceed 100 CY. The stockpiled screened soil will be composite sampled and analyzed to determine if that batch of soil meets the MCP Method 1 S-1 Standards. Each composite sample will be comprised of 30 subsamples collected from throughout the stockpile so that the composite sample is representative of the overall stockpile. Soil determined to meet the Method 1 S-1 Standards will be eligible for on-site re-use as backfill (see below). Fill also will not contain trash, rubbish or debris. Various analytical turnaround times (TATs) may be specified to obtain these analytical results in a timeframe that will not unduly restrict on-site operations or material flows. If the analytical results indicate that a batch of stockpiled soil was not suitable for re-use as on-site backfill, that batch would be designated for off-site disposal and sampled and analyzed for the waste acceptance criteria of the potential disposal facility(s).



#### 4.2.5.2 Characterization of the In-situ Post-Excavation Residual Soil

Soil at the surfaces after the excavations at the FTRBA and the CWA will be sampled to document the soil characteristics at those locations at that point in time, prior to the re-grading and restoration of the area.

The sampling approach employed during the re-baselining sampling of the FTRBA in 2015 will be mimicked for the post-excavation sampling in this area. The same six decision units (DUs) will be designated for the RAMs sampling:

- The excavated area in front of the berm
- The four quadrant-based DUs on the excavated berm -
  - Quadrant 1 (Lower Left as seen from the access road)
  - Quadrant 2 (Lower Right)
  - Quadrant 3 (Upper Left)
  - Quadrant 4 (Upper Right)
- The excavated area behind the berm

Each quadrant / DU will be sampled in the depth interval of 0"-6" below the new excavated exposed surface. All sample increments for the 0"-6" replicate samples will be collected using a 6" long disposable plastic trowel and placed in labeled Ziploc bags. Thirty (30) ISM sample increments will be collected from each DU. Best efforts will be made to collect the increments in the characteristic ISM grid pattern within the DU to the extent practical given the slope and possible benching of the excavation. One of the DUs at the FTRBA will be randomly selected and replicate ISM samples will be collected (i.e., an original and two replicate ISM samples). A Field Log Book will be kept to record a number of key field parameters and observations made during the soil sampling activities. In addition, photographs will be taken of various phases of the soil sampling.

The soil associated with these surface samples will almost certainly be moved and/or covered during the final grading and restoration of the FTRBA. Nonetheless, obtaining representative samples at the outer edge of the zone that contained the metallic debris was determined to be prudent.

A similar post-excavation sampling approach will be applied at the CWA. Four (4) DUs will be designated for this area:

- Quadrant 1 (Front Left as seen from the access road)
- Quadrant 2 (Front Right)
- Quadrant 3 (Waterside Left)
- Quadrant 4 (Waterside Right)

Each DU will include the bottom of the excavation (i.e., just above the groundwater table) and the two short side walls of the excavation forming that DU. Each DU will be sampled in the depth interval of 0"-6" below the new excavated surface (without collected saturated soil or

groundwater). The 30 sample increments collected in each DU will be distributed proportionally between the excavation bottom and sidewalls based on the area of the excavated face. Otherwise, the sample collection process will be the same as described above for the FTRBA.

Again, the soil associated with the exposed surface soil samples in the DWA will likely be covered during the final grading and temporary restoration of the area. However, obtaining representative samples from the completed excavation surfaces was again considered prudent.

#### **4.2.5.3 Characterization of Imported Fill Soil**

If some amount of soil must be imported for backfilling or placement as part of the specified restoration design, that soil will be sampled prior to being accepted for delivery to the Site. The volume of soil that may be needed for this purpose is not anticipated to be large and would likely be obtainable from a single source and stockpile. Accordingly, only one composite grab sample of this material is expected to be collected and analyzed. Only soil meeting the MCP Method 1 S-1 Standards and having the right physical properties for the restoration will be used for this purpose. Fill also will not contain trash, rubbish or debris.

#### **4.2.6 Analytical Methods**

The analytical program to be applied to all soil samples will mimic that of the most recent soil sampling performed for the re-baselining effort in 2015 to maintain consistency of the data generated.

The proposed sampling activities will be performed consistent with MassDEP Bureau of Waste Site Cleanup Policy WSC-10-320 Compendium of Quality Control Requirements and Performance Standards for Selected Analytical Protocols. Conformance with these protocols will result in analytical data with “Presumptive Certainty” status. All data generated will be assessed for its usability and representativeness in comparison to the project’s characterization or confirmation objectives.

Off-site laboratory analyses is anticipated be performed by TestAmerica, Inc. of Burlington, VT with possible support from the TestAmerica Buffalo, NY or Canton, OH laboratories, if needed. This laboratory is preferred for consistency since it was used for the 2015 re-baselining sampling and for much of the prior Phase II Investigation analytical work at the Site. The laboratory analyses will be performed in accordance with MassDEP Compendium of Analytical Method (CAM) protocols for all requested analyses for which CAM protocols have been established. MassDEP Analytical Protocol Certification Forms will be prepared by the TestAmerica Project Manager and provided to Tetra Tech along with each analytical SDG as appropriate. The sampling results will be transmitted electronically to Tetra Tech via corresponding Electronic Data Deliverables (EDDs). In association with each EDD, the laboratory will provide two reports in electronic format. One will be a full-length (i.e., L4 - Level 4) report with the results and all of the corresponding calibration data. The other will be a more abbreviated report (i.e., L2 - Level 2) that mimics the L4-Level 4 report but without the calibration data. It should be noted that for certain analyses (e.g., certain analyses to support waste disposal) CAM protocols are not available. For these analyses, standard analytical methods will be utilized and all methods will be identified in

the associated TestAmerica Final Data Reports. The data set that will be generated is intended to support upcoming soil remediation alternatives evaluation and associated remedial program design. Therefore, formal data validation is not proposed. Tetra Tech will, however, review and evaluate any broad-spectrum issues that may develop during the implementation of the sampling program and associated potential quality assurance/quality control (QA/QC) concerns and any adjustments that may have been implemented to address the issues.

TestAmerica will apply its standard protocol for the preparation of ISM multiple increment samples. Specifically, upon arrival at the laboratory, multiple increment samples will be air-dried (if required) and sieved through a #10 sieve (2 mm). The material retained on the sieve will be reported as a percentage of the dry sample that was put through the sieve. The samples will then be ground in a puck mill. After grinding, incremental sub-samples will be created from the original sample. These samples will then be subsequently analyzed in accordance with standard procedures and CAM protocols. Ottawa sand grinding blanks also will be ground in the puck mill and analyzed to monitor the effects of the grinding process on the analytical results.

The sample identification system to be used during implementation of this RAM Plan will assign a unique sample identifier to each soil sample collected. Data management will be consistent with this sample identification system. The protocol for assigning field sample numbers is described below. Each sample collected will have its own identifier, which will apply for the duration of the project. The sample identifier will consist of an alphanumeric code that will identify the site designation, sample type, sample number, and QC sample designation (if applicable). The QC sample identifier also will consist of an alphanumeric code that will identify the QC sample designation, sampling date, and sample number (if applicable). All sample identifiers and their corresponding locations will be logged in the Field Log Book for future use.

<b>Table 4-1. Sample Identification Scheme</b>		
<b>Sample ID Component</b>	<b>Abbreviation</b>	<b>Definition</b>
Site Identification	FW	Fireworks Site
RAM Area Designation	FTRBA	Former Test Range Berm Area
	CWA	Cold Waste Area
Sample Types	ISM	Incremental Sampling Methodology
	CGB	Composite Grab
Boundary	Q#	DU/Quadrant Number
	SP#	Stockpile Number
QC Designations	D	Duplicate Sample
	REP	Replicate ISM Sample
	MS/MSD	Matrix Spike/Matrix Spike Duplicate
Sampling Depth	06	Surface soil sample (0"-6" depth)
	CMP	Composite

Examples:     **Soil Sample from Quadrant 1 of the Former Test Range Berm Area**

Identifier: FW-FTRBA-ISM-Q1-06

Descriptions FW = Fireworks Site  
FTRBA = Firing Range Test Berm Area  
ISM = Incremental Sampling Method  
Q1 = Quadrant 1  
06 = Surface Sample

**Grab Sample of Excavated and Screened CWA Soil from Stockpile 3**

Identifier: FW-CWA-CGB-SP3-CMP

Descriptions FW = Fireworks Site  
CWA = Cold Waste Area  
CGB = Composite Grab  
SP3 = Stockpile #3  
CMP = Composite

Field personnel will complete sample labels using indelible ink. Labels will include the project identification, sample identification, date and time of collection, sampler's initials, sample matrix, type of sample (grab or composite), analyses to be performed, and preservative used (if applicable).

The Table 4-2 identifies the types and number of soil samples currently anticipated to be collected and the analyses to be performed to support the RAM.

<b>Table 4-2. Anticipated Numbers and Types of Soil Samples to be Collected and Analyzed for the RAM</b>					
<b>Area / Type</b>	<b>Samples</b>	<b>Number</b>	<b>Metals</b>	<b>Explosives</b>	<b>Waste Characterization (1)</b>
FTRBA Post-Excavation	ISM original	6	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0
	ISM replicates	2	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0
CWA Post-Excavation	ISM original	6	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0
Separated Screened Soil	Composite Grab original	40	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	TBD
	Composite Grab duplicates	4	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0
	Matrix Spike / Matrix Spike Duplicates	4	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0

<b>Table 4-2. Anticipated Numbers and Types of Soil Samples to be Collected and Analyzed for the RAM</b>					
<b>Area / Type</b>	<b>Samples</b>	<b>Number</b>	<b>Metals</b>	<b>Explosives</b>	<b>Waste Characterization (1)</b>
Imported Fill	Composite Grab	1	6010 Metals CAM IIIA	8330 Explosives CAM VIII A	0
<p>Note:</p> <p>(1) The exact suite of waste characterization parameters to be analyzed will be established upon selection of the disposal facility(s). The parameters may include: Flashpoint; Toxicity Characteristic Leaching Procedure (TCLP) Metals; Organic compounds analyses relative to the maximum concentrations associated with the various EPA Hazardous Waste "D" Codes or the relevant Extraction Procedure (EP) toxicity threshold; Free Cyanide; Reactive Sulfide; pH; and Free Liquid (Paint Filter Test). The required sampling frequency also will be specified by the waste disposal facility, but is expected to be on the order of one composite sample per 100 tons of material disposed.</p>					

Sample holding times for all analyses will not be exceeded. For soil, the holding time for metals is 6 months from the time of collection. For explosives in soil, samples must be prepared within 14 days and analyzed within 40 days. Samples to be analyzed for metals and explosives will be placed in an 8-ounce or larger glass jar or Zip bag for shipment to the laboratory.

To maintain and document sample possession, chain of custody (COC) records will be kept to ensure sample integrity from the collection time through data reporting. The COC protocol provides the ability to trace sample possession and handling. A sample is considered under custody if it is/was:

- In a person's possession;
- In a person's view after being in possession;
- In a person's possession and locked up; or
- In a designated secure area.

Personnel collecting samples are responsible for sample care and integrity until the samples are properly transferred or dispatched. The number of people handling a sample will be kept to a minimum.

The sampler(s) will initially complete the COC records that will accompany the samples at all times. The following information shall be indicated on the COC record:

- Project identification;
- Signature of samplers;
- Sample identification, sample matrix, date and time of collection, grab or composite sample designation, number of containers corresponding to that sample identification, analyses required, remarks or sample location (if applicable), and preservation method(s);
- Signature of the individual relinquishing the samples; and
- Name of the individual(s) receiving the samples and air bill number, if applicable.

The same COC form utilized for the 2015 re-baselining sampling will be used for this RAM. Samples for off-site laboratory analysis will be shipped via Federal Express or by courier for

overnight delivery in waterproof coolers using the procedures outlined below. The samples collected for this project shall be considered low-level or environmental samples for packaging and shipping purposes. The sample packing procedures are as follows:

- Fill out the pertinent information on the sample label, and ensure agreement with the COC.
- Place about 3 inches of cushioning material (such as vermiculite or bubble pack) in the bottom of the cooler.
- Wrap the sample containers in bubble pack. Place containers in the cooler in such a way that they will not touch during shipment.
- Put in additional packing material to partially cover sample containers (more than halfway).
- Place ice, sealed in plastic bags, around and on top of the containers. The temperature of the samples should be maintained at 4°C +/- 2°C during shipment to the laboratory.
- Fill cooler with cushioning material.
- Close cooler and place signed custody seals on both ends of the cooler.

The courier will sign the COC as a record of receipt, returning one signed copy to the sampler. If samples are to be shipped via Federal Express or other delivery service, the following steps will be taken:

- Put COC record in a waterproof plastic bag and tape it to the inside lid of the cooler.
- Tape the drain shut.
- Secure the lid by wrapping the cooler completely with nylon strapping tape or duct tape at a minimum of two locations.
- Attach completed shipping label to top of the cooler and place signed custody seals on both ends of the cooler.

From the time of sample collection, samples for off-site analysis will be stored on ice at less than or equal to 4°C. The laboratory will record the temperature of the samples upon arrival at the facility.

#### **4.2.7 Disposition of Soil and Excavated Debris**

The conduct of the RAM will generate or potentially generate a number of waste streams that will need to be managed and disposed appropriately. The amount and characteristics of these potential waste streams will be determined by the conditions encountered. Efforts will be made to minimize the generation of these wastes to the extent practical. These waste streams are:

- Soil in Three Potential Categories
  - Soil with all chemistry parameters meeting the MCP Method 1 S-1 Standards;
  - Soil with one or more constituents at concentrations exceeding its MCP Method 1 S-1 Standard, but such that the soil is not a hazardous waste under RCRA; and
  - Soil that classifies as a hazardous waste under RCRA.
- Investigation-Derived Waste (IDW) (e.g., personal protective equipment (PPE), disposable sampling tools)
- Municipal / Household Trash (present as the result of past dumping in the area)

- Metal and Construction Debris Associated with Past Operations of the Facility
  - Range-related construction debris (e.g., concrete, structural timbers)
  - Inert metallic munitions-related debris
  - Items/Materials potentially presenting an explosive hazard

Table 4-3 indicates the disposition of the various potential material and waste streams that may be generated by the RAM activity in the FTRBA and the CWA.

<b>Table 4-3. Planned Disposition of the Various Material and Waste Streams that May Be Generated by the RAM Activities</b>	
<b>Material / Waste Stream</b>	<b>Disposition</b>
Soil	
- Meeting MCP Method 1 S-1 Standards	On-site re-use
- Not Meeting MCP Method 1 S-1 Standards, but Not Hazardous Waste	Cover at a municipal landfill
- Not Meeting MCP Method 1 S-1 Standards, and Hazardous Waste	RCRA-permitted landfill
Investigation-Derived Waste	Permitted landfill (Type to be Determined)
Municipal / Household Trash	Town of Hanover Department of Public Works (DPW)
Metal and Construction Debris Associated with Past Operations of the Facility	
- Range-related concrete construction debris	Recycled
- Range-related structural timbers construction debris	Recycled or disposed (depending on composition)
- Material Potentially Presenting an Explosive Hazard	MA State Police Bomb Squad
- Munitions-related metallic debris	Demilitarization and re-cycling by a licensed company (with certification)

Prior to the disposal of any soils, approvals from the selected disposal facilities will be obtained. These approvals will be based on a review of the completed waste profiles and supporting documentation by that facility, including laboratory analytical results. Soil requiring off-site disposal will be tracked using either a Bill of Lading (BOL) or a hazardous waste manifest for shipping of contaminated soils. All off-site disposal facilities will be screened by a Tetra Tech regulatory specialist using the company's internal liability minimization procedures prior to selection. Contaminated soils determined for off-site disposal will be placed in lined roll-off containers for transport. The containers will be covered and dry swept prior to being removed from the Site.

Municipal and household trash that is incidentally collected along with the materials from the historical facility operations will be accumulated in a designated location and/or container for removal by the Town of Hanover DPW. It is not the objective of the RAM activity to collect or remove all municipal and household trash present in the work areas. Used PPE and disposable materials will be collected and placed in drums for later disposal. Disposable sampling equipment,

latex gloves, glass jars, and sampling scoops will be combined and disposed with any contaminated soil.

Any munitions-related metallic debris recovered from the work areas or potentially generated by on-site destruction operations by the Massachusetts State Police Bomb Squad will be collected by the UXO supervisor daily and placed in 55-gallon drums for processing to physically alter and demilitarize the metal by melting or shredding. The drums will be sealed and transported daily to the secured (fenced and locked) area within the Drinkwater Investment Corporation (P.A. Landers) property. A certified subcontractor will be selected to conduct the material demilitarization and disposal. The subcontractor will provide demilitarization services in accordance with Department of Defense 4160.21-M-1, Defense Demilitarization Manual, and will provide a signed certificate of demilitarization/destruction of the inert materials back to Tetra Tech. The demilitarized metal will then be recycled.

The subcontractor will coordinate transportation (including documentation) activities for pickup at the secured staging/loading location, and will provide a load plan and will have the responsibility of how the material is loaded for transport in their approved transport vehicle. The subcontractor will assure that the transportation vehicle and driver are appropriately licensed and has all appropriate paperwork required for the transportation of the inert materials. The selected subcontractor and receiving/recycling facilities will be reviewed and pre-approved by Tetra Tech's internal auditor.

Tetra Tech will provide the following:

- All access control to the secured staging/loading area;
- 55-gallon drums placed on pallets;
- Drums will be sealed and a manifest will be attached to each drum;
- A signed DoD Form 1348-1A or locally approved form with shipment; and
- Drums loading onto the transportation vehicle.

All materials transferred from the site to the Massachusetts State Police Bomb Squad will be documented and accounted for as described above. The disposition of the chipped vegetation, tree trunks and tree stumps also is described above.

The estimated quantities of materials for off-site disposal are summarized in Table 4-4.

<b>Table 4-4. Estimated Material or Waste Quantities for Disposal</b>	
<b>Material / Waste Stream</b>	<b>Estimated Amount *</b>
Contaminated Soils	500 cubic yards
Range-Related Debris (e.g., concrete, metal, timbers)	10 tons
Municipal and Household Trash	1 ton
MPPEH	1 ton
Munitions-Related Metallic Debris	TBD
* The Cooperating Parties hereby certify that, based upon information and opinions provided by the LSP, sufficient financial resources are available to manage excavated materials in the manner and time frames specified at 310 CMR 40.0030.	



#### **4.2.8 Site Restoration and Environmental Monitoring**

The excavation will be backfilled and re-graded with existing non-contaminated soil. If the existing soil is geo-technically unsuitable for the restoration specified, additional clean backfill will be imported and used as required to restore the area to the pre-existing grade and complete the approved restoration. Excavated soils that meet the MCP Method 1 S-1 Standards will be used for backfilling of disturbed areas. Site restoration will include the re-grading of the disturbed areas and removal of all excavation equipment and protective fencing and signage.

The disturbed areas in the FTRBA will be graded to a maximum 3:1 slope or to conform to surrounding grade and stabilized with loam and seed. This area will then be covered with matting to facilitate effective growth and prevent erosion.

Excavated material in the CWA will be replaced with ¾-inch minus sand and gravel. This area would be topped by ¾-inch minus dense grade and 6-inch plus rocks along the Factory Pond shoreline, and graded to allow access to the Pond by a launched boat for future remedial activities.

At this time there is no permanent or final restoration proposed for the access roads or CWA, as these areas will almost certainly be re-disturbed and used in future remediation efforts. However, erosion and siltation controls will be maintained until the disturbed areas are stabilized to the satisfaction of the Conservation Agent. Representatives of the Cons Com or MassDEP will have the right to enter and inspect the work area at reasonable hours.

#### **4.2.9 Demobilization**

Demobilization will consist of decontaminating all equipment, cleaning the RAM work areas, and completing final inspections. The activities will include decontamination and removal of all excavation equipment and materials as well as collection and disposal of all contaminated material and disposable equipment for which decontamination is inappropriate. Equipment decontamination will be conducted based on the usage requirements of each piece of heavy equipment. Heavy equipment will be decontaminated using dry decontamination techniques. While it is not anticipated that the trucks used to load the containers will come in contact with contaminated soils, they will be inspected to ensure that tires are clean of dirt that may be present on the ground surface. Any observed soil on the truck tires will be removed prior to leaving the Site. Prior to removal from the Site, all decontaminated equipment and material will be inspected and accepted by the Field Operations Lead and the Senior UXO Supervisor. These individuals will ensure that the decontamination is performed for all equipment and materials.

Upon completion of these activities, MassDEP, the Town of Hanover and the Town of Hanover Conservation Commission will be notified that the RAM fieldwork has been completed. Tetra Tech will then facilitate a site inspection to allow compliance with the conditions of the OOC to be determined. Tetra Tech will submit a request for Certificate of Compliance (WPA Form 8A) to the Cons Com.

## 5.0 PROCUREMENT

The procurement of materials and services to support this RAM Plan implementation will be performed on a competitive basis. The work has been divided into procurement efforts, which are identified in Table 5-1. These material and subcontract procurements will be initiated in the Home Office (HO) to support initial on-site activities, and will be managed from the field for the remainder of project activities. For subcontracted services, statements of work will be prepared to support the bid process drawing on or accompanied by the appropriate sections of this RAM Plan. These documents will identify the scope of services required, schedule constraints, and submittal requirements. In addition, where appropriate, they will provide a site background summary and health and safety requirements for site work. Procurement personnel will provide the contractual and administrative portions of the package for subcontract services.

<b>Table 5-1. RAM Procurement Summary</b>			
<b>Subcontractor</b>	<b>Materials/Services</b>	<b>Contract</b>	<b>Procurement</b>
TBD	Mobilization Equipment and Supplies	FP <sup>1</sup>	HO <sup>2</sup>
TBD	Site Preparation, Clearing and Road Improvements	FP FUR <sup>3</sup>	HO
TestAmerica (with Sole Source justification)	Chemical Analyses of Soil and Waste Samples	FUR	HO
TBD	Excavation and Screening Equipment and Fuel	FUR	HO
TBD	Transportation and Disposal of Contaminated Soils, Metallic Debris, concrete, timbers/ wood	FUR	HO
TBD	Backfill	FP	Field
TBD	Site Restoration (including labor and supplies)	FUR	HO
Town of Hanover Fire Department	On-Site Emergency Response Support	FUR	HO
Town of Hanover Police Department	On-Site Site Security Support	FUR	HO
Massachusetts State Police Bomb Squad	MPPEH Response	FUR	HO
<b>Notes:</b> TBD To be determined, based upon competitive procurement activities <sup>1</sup> FP Fixed price <sup>2</sup> HO Home Office <sup>3</sup> FUR Fixed unit rate			

Off-site laboratory analysis is expected to be performed by TestAmerica, Inc. of Burlington, VT with support from the TestAmerica Buffalo, NY and Canton, OH laboratories, if needed. This laboratory is preferred for consistency since it was used for the 2015 re-baselining sampling and for much of the prior Phase II Investigation analytical work.

Procurement of materials and equipment will be performed using purchase requisitions. In addition to these procurements, local vendors will be identified and accounts established to supply commodity items such as office supplies, lumber, rental tools, and building supplies, as needed.

## **6.0 IMPLEMENTATION SCHEDULE (310 CMR 40.0444(1)(C))**

Fieldwork under this RAM is scheduled to begin on or after May 29, 2017 and be completed within five to six weeks. The table below summarizes the anticipated RAM schedule:

<b>Table 6-1. Anticipated RAM Schedule</b>	
<b>RAM Component</b>	<b>Anticipated Start / Completion Date</b>
Procurement	April 2017
Finalization of RAM Plan	May 16, 2017
Site Preparation	May 22, 2017
Mobilization of Excavation Field Team	May 29, 2017
Waste Disposal	Completed by July 14, 2017
Contaminated Soils	Completed by July 14, 2017
Range-Related Debris (e.g., concrete, metal, timbers)	Completed by July 7, 2017
Municipal and Household Trash	Completed by July 7, 2017
Munitions-Related Metallic Debris	Completed by July 7, 2017
Completion of RAM Field Activities	Approximately July 21, 2017
RAM Completion Report	Within 120 days of completion of RAM activities

## **7.0 REPORTING (310 CMR 40.0445)**

A RAM Completion Report will be prepared and submitted to MassDEP within 120 days of completion of RAM activities. The report will document activities at the FTRBA and CWA and will include:

- A succinct summary of information and data pertaining to the investigation, location and evaluation of encountered contamination, and of all response actions undertaken;
- Documentation on the management of contaminated soils removed from the site; and
- Details on any munitions that were discovered.

If for any reason a RAM Completion Report is not submitted to MassDEP within 120 days following initiation of RAM activities, a RAM Status Report will be submitted prior to the RAM Completion Report. The CPs will solicit comments from MassDEP on a draft RAM Completion Report before preparing and submitting a final version.

## **8.0 PUBLIC INVOLVEMENT REQUIREMENTS (310 CMR 40.1403)**

In accordance with the requirements of 310 CMR 40.1400, the Town of Hanover has been notified of the intent to implement this RAM Plan. A meeting to discuss the proposed RAM Plan actions, local response and public safety was held on March 15, 2017 with the Hanover Town Manager, Fire Chief, Police Chief, and representatives of the Massachusetts State Police Bomb Squad and

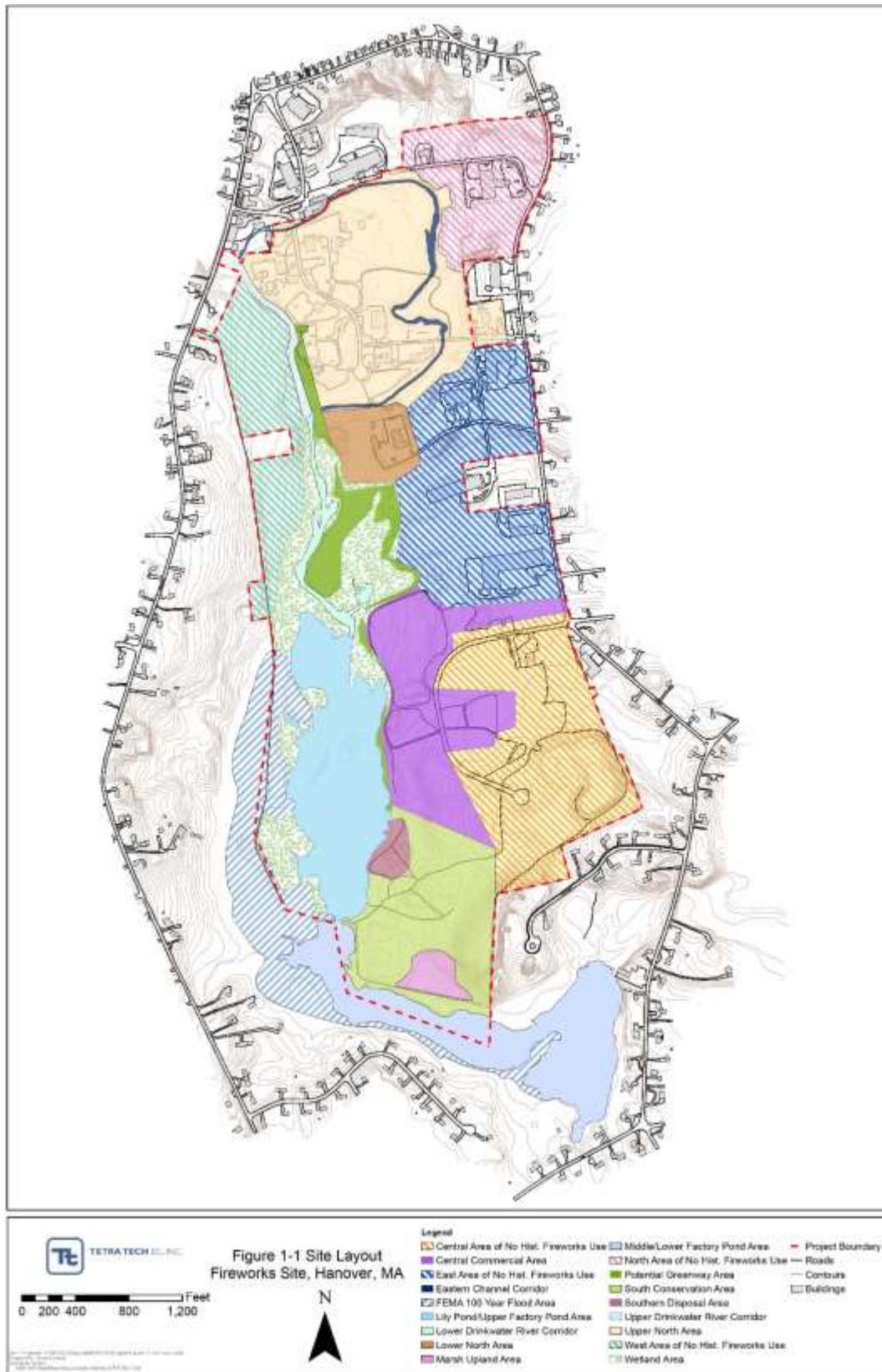
the Town of Hanover DPW. A general presentation of the proposed activity associated with this RAM Plan also was presented at the March 15, 2017 Cons Com hearing for the wetlands NOI.

**9.0 LICENSED SITE PROFESSIONAL (310 CMR 40.0444(1)(G))**

The Licensed Site Professional (LSP) responsible for overseeing the work for this RAM will be:

Lawrence E. Kahrs, PE, CPG, LSP  
LSP License No. 2890  
Tetra Tech, Inc.  
160 Federal Street, Suite 301  
Boston, MA 02110

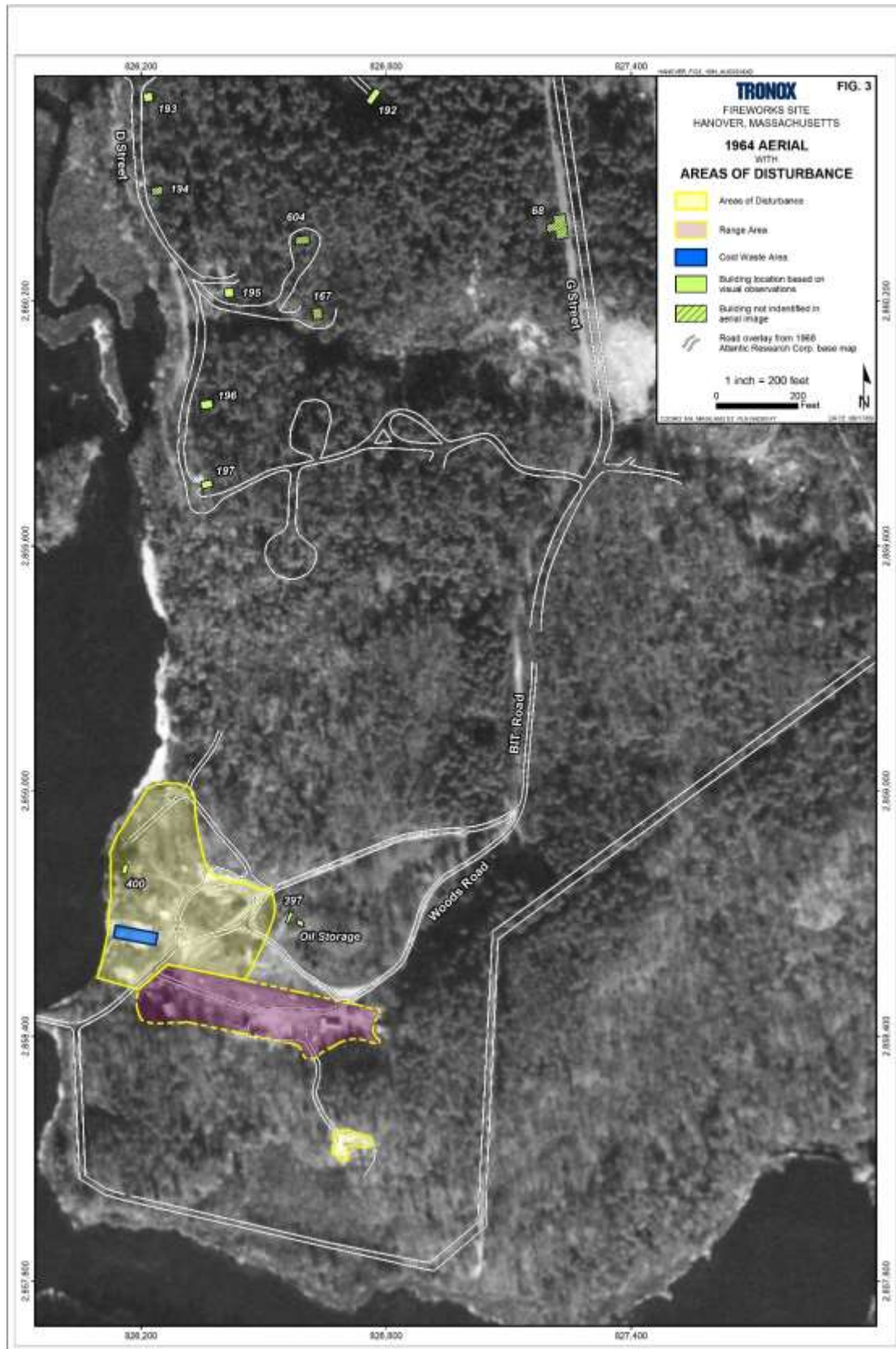
## **FIGURES**



**Figure 1-1. Site Layout of the Fireworks Site**

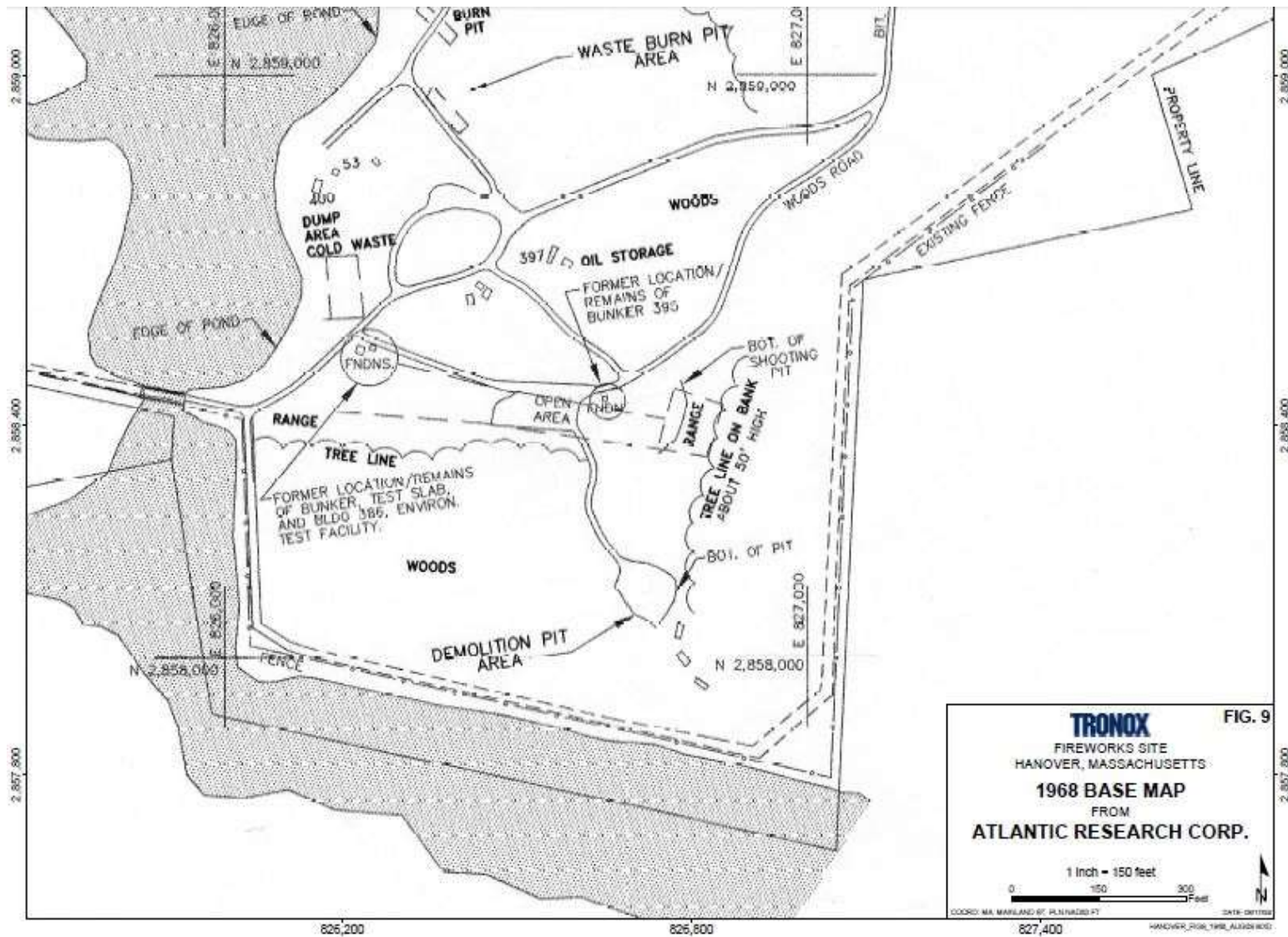






**Figure 3-1. 1964 Aerial Photograph with Areas of Disturbance**





**Figure 3-2. 1968 Base Map from Atlantic Research Corporation**



## **Town of Hanover**

**Walter L. Sweeney**  
*Chief of Police*

## **Police Department**

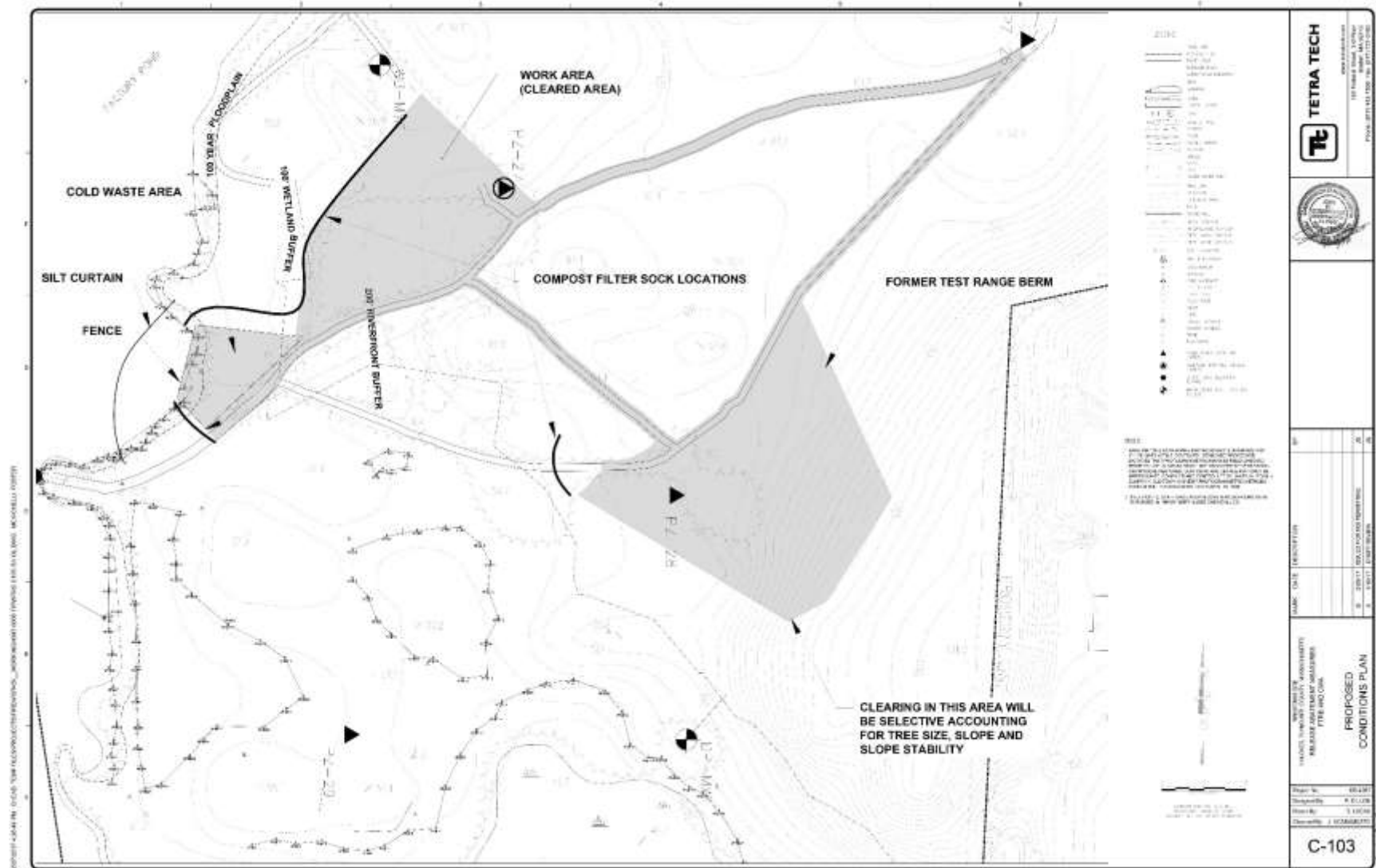
129 Rockland Street / PO Box 214  
Hanover, MA 02339-0214  
Telephone: 781-826-3811  
Fax: 781-826-7993

**TOWN OF HANOVER**

**NO TRESSPASSING**

Trespassing on these grounds is forbidden under penalty of the law. Violators of this notice will be imprisoned, fined or both pursuant M.G.L. c. 266, s. 120.

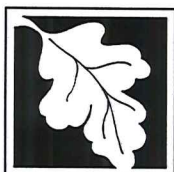
**Figure 4-1. Town of Hanover “No Trespassing” Sign to Be Posted for the RAM**



**Figure 4-2. Proposed Conditions Plan for the RAM Work Area**

## **APPENDICES**

**Appendix A      Order of Conditions Issued by the Town of Hanover Conservation  
Commission (Dated April 6, 2017)**



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 31-1149

MassDEP File #

Fireworks Site

eDEP Transaction #

Hanover BL 17-06

City/Town

**A. General Information**

**Please note:**  
this form has  
been modified  
with added  
space to  
accommodate  
the Registry  
of Deeds  
Requirements

1. From: HANOVER  
Conservation Commission
2. This issuance is for  
(check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

MICHELLE

a. First Name

O'BRIEN

b. Last Name

JOINT FIREWORKS DEFENSE GROUP

c. Organization

c/o Pierce Atwood, LLP, 100 Summer St.

d. Mailing Address

Boston

e. City/Town

MA

f. State

02110

g. Zip Code

4. Property Owner (if different from applicant):

Troy

a. First Name

Clarkson, Town Manager

b. Last Name

Town of Hanover

c. Organization

550 Hanover St.

d. Mailing Address

Hanover

e. City/Town

MA

f. State

02339

g. Zip Code

5. Project Location:

#0 King St.- Fireworks Site

a. Street Address

Hanover

b. City/Town

68

45

c. Assessors Map/Plat Number

d. Parcel/Lot Number

Latitude and Longitude, if known:

d m s  
d. Latitude

d m s  
e. Longitude

**Important:**  
When filling  
out forms on  
the  
computer,  
use only the  
tab key to  
move your  
cursor - do  
not use the  
return key.







Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
SE 31-1149  
MassDEP File #  
Fireworks Site  
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Hanover BL 17-06  
City/Town

**A. General Information (cont.)**

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):  
Plymouth  
a. County 3861 b. Certificate Number (if registered land) 590  
c. Book 590 d. Page 590
7. Dates: 3/1/17 3/15/17 4/6/17  
a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):  
Release Abatement Measures, Fireworks Site, Hanover MA  
a. Plan Title Tetra Tech, Inc. John Scaramuzzo, PE #41349  
b. Prepared By 2/28/17 c. Signed and Stamped by various  
d. Final Revision Date Scope of Work for RAM's....Conditional Approval, RT#4-0000090 e. Scale 10/21/16  
f. Additional Plan or Document Title g. Date

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

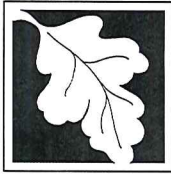
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- a. ☐ Public Water Supply b. ☐ Land Containing Shellfish c. ☒ Prevention of Pollution  
d. ☐ Private Water Supply e. ☐ Fisheries f. ☒ Protection of Wildlife Habitat  
g. ☒ Groundwater Supply h. ☐ Storm Damage Prevention i. ☐ Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

- a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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City/Town

**B. Findings (cont.)**

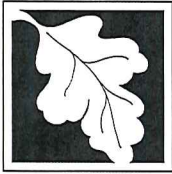
Denied because:

- b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. ☒ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) 0  
a. linear feet

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>90</u> a. linear feet	<u>90</u> b. linear feet	<u>90</u> c. linear feet	<u>90</u> d. linear feet
5. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	<u>11,876</u> a. square feet	<u>11,876</u> b. square feet	<u>11,876</u> c. square feet	<u>11,876</u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Debris recovery w/i 10' of pond edge	<u>50</u> a. square feet	<u>50</u> b. square feet	<u>50</u> c. square feet	<u>50</u> d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>50</u> a. square feet	<u>50</u> b. square feet	<u>50</u> c. square feet	<u>50</u> d. square feet
Cubic Feet Flood Storage	<u>                    </u> e. cubic feet	<u>                    </u> f. cubic feet	<u>                    </u> g. cubic feet	<u>                    </u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> e. cubic feet	<u>                    </u> f. cubic feet
Cubic Feet Flood Storage	<u>                    </u> c. cubic feet	<u>                    </u> d. cubic feet	<u>                    </u> e. cubic feet	<u>                    </u> f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	<u>124,884</u> a. total sq. feet	<u>124,884</u> b. total sq. feet	<u>11,876</u> e. square feet	<u>11,876</u> f. square feet
Sq ft within 100 ft	<u>11,876</u> c. square feet	<u>11,876</u> d. square feet	<u>11,876</u> e. square feet	<u>11,876</u> f. square feet
Sq ft between 100-200 ft	<u>113,008</u> g. square feet	<u>113,008</u> h. square feet	<u>113,008</u> i. square feet	<u>113,008</u> j. square feet





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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MassDEP File #

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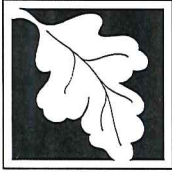
Hanover BL 17-06

City/Town

**B. Findings (cont.)**

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. nourishment	<u>                    </u> d. nourishment
14. <input type="checkbox"/> Coastal Dunes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. nourishment	<u>                    </u> d. nourishment
15. <input type="checkbox"/> Coastal Banks	<u>                    </u> a. linear feet	<u>                    </u> b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
	<u>                    </u> c. c/y dredged	<u>                    </u> d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u>                    </u> a. c/y dredged	<u>                    </u> b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
22. <input type="checkbox"/> Riverfront Area	<u>                    </u> a. total sq. feet	<u>                    </u> b. total sq. feet		
Sq ft within 100 ft	<u>                    </u> c. square feet	<u>                    </u> d. square feet	<u>                    </u> e. square feet	<u>                    </u> f. square feet
Sq ft between 100-200 ft	<u>                    </u> g. square feet	<u>                    </u> h. square feet	<u>                    </u> i. square feet	<u>                    </u> j. square feet



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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MassDEP File #

Fireworks Site

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City/Town

**B. Findings (cont.)**

\* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. ☐ Restoration/Enhancement \*:

a. square feet of BVW

b. square feet of salt marsh

24. ☐ Stream Crossing(s):

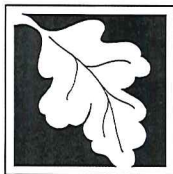
a. number of new stream crossings

b. number of replacement stream crossings

**C. General Conditions Under Massachusetts Wetlands Protection Act**

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. The work is a maintenance dredging project as provided for in the Act; or
  - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
  - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on \_\_\_\_\_ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 31-1149

MassDEP File #

Fireworks Site

eDEP Transaction #

Hanover BL 17-06

City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act**

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,  

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]  
"File Number            SE 31-1149 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 31-1149

MassDEP File #

Fireworks Site

eDEP Transaction #

Hanover BL 17-06

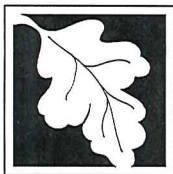
City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) ☐ is subject to the Massachusetts Stormwater Standards
- (2) ☒ is NOT subject to the Massachusetts Stormwater Standards

**If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
- ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
- iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



**Massachusetts Department of Environmental Protection**  
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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

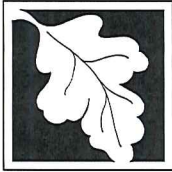
ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.





**Massachusetts Department of Environmental Protection**  
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**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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Hanover BL 17-06

City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

g) The responsible party shall:

1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

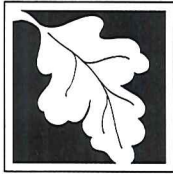
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20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
SE 31-1149  
MassDEP File #  
Fireworks Site  
eDEP Transaction #  
Hanover BL 17-06  
City/Town

## D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☒ Yes ☐ No
2. The \_\_\_\_\_ hereby finds (check one that applies):  
Conservation Commission

- a. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. ☒ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

HANOVER

#6-14

1. Municipal Ordinance or Bylaw

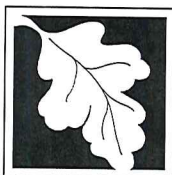
2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

**\*\*see Hanover Bylaw Order of Conditions #BL17-06 attached hereto\*\***

**\*\*see Access Agreement attached hereto\*\***



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE 31-1149

MassDEP File #

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eDEP Transaction #

Hanover BL 17-06

City/Town

**E. Signatures**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

4-6-17

1. Date of Issuance

4

2. Number of Signers

Signatures:

[Signature]  
Lisa Satterhit

[Signature]  
[Signature]

☒ by hand delivery on

4-6-17

Date

☐ by certified mail, return receipt requested, on

Date

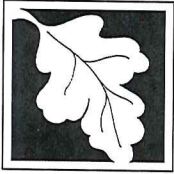
**F. Appeals**

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.





Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:  
SE 31-1149  
MassDEP File #  
Fireworks Site  
eDEP Transaction #  
Hanover BL 17-06  
City/Town

## G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

HANOVER

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

HANOVER

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

#0 KING ST.

Project Location

SE 31-1149

MassDEP File Number

Has been recorded at the Registry of Deeds of:

PLYMOUTH

County

Book

Page

for: TOWN OF HANOVER, c/o Troy Clarkson, Town Manager

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

April 6, 2017

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

## ACCESS AGREEMENT

This Access Agreement ("Agreement") is entered into by and among Tetra Tech, Inc. and its respective officers, employees, agents and representatives (collectively "Permittee"), any subcontractors, their respective officers, employees, agents and representatives (collectively "Permittee's Representatives"), and the Town of Hanover and the Town of Hanover acting by and through its Conservation Commission having an address at 550 Hanover St., Hanover, Massachusetts (collectively, Owner).

WHEREAS, Owner is the current owner of parcels of land designated as Assessor's parcel number 2 on Assessor's Map 59, Assessor's parcel numbers 2 and 27 on Assessor's Map 67, Assessor's parcel numbers 4, 45, 50, 54, 55, and 68 on Assessor's Map 68, and Assessor's parcel numbers 2 and 3 on Assessor's Map 81 (collectively, the "Property"), which are part of or abut the Fireworks Site, and which are within the Area of Interest depicted on the map attached hereto as Exhibit A;

WHEREAS, Owner has the authority to grant the Permittee and Permittee's Representatives access to the Property for the purpose of conducting site investigation and remediation activities;

WHEREAS, the Permittee desires to enter upon the Property, for the purposes of conducting site investigation and remediation activities; and

WHEREAS, the Owner agrees to grant the Permittee and the Permittee's Representatives access to the Property for the purposes of conducting such site investigation and remediation activities, subject to the following terms and conditions.

NOW, THEREFORE, the parties intending to be legally bound and for and in consideration of the foregoing and the mutual covenants hereinafter made, agree as follows:

1. Permission is granted to enter the Property for the purposes of conducting Release Abatement Measures described in a Scope of Work dated October 18, 2016 entitled "Scope of Work for Release Abatement Measures (RAMs) to be performed at the Former Test Range Area and the Cold Waste Area" and for the purposes of conducting all additional response actions required by the Massachusetts Contingency Plan, hereinafter the "Work".

2. This Agreement will remain in effect until the Work is completed.

3. In the event the Permittee or Permittee's Representatives violate a covenant or condition contained herein, this Agreement may be suspended immediately upon written notice by the Owner. The parties will then endeavor to negotiate a resolution of such violation, to enable the Work to resume as soon as possible.

4. All Work shall be performed in a good, workmanlike manner in accordance with all applicable environmental, health and safety statutes and regulations currently in effect

("Applicable Laws"), and in such a way as to cause a minimum of interference with business operations, communications and other activities being conducted on the Property. Temporary restrictions on activities in some areas of the Property during the performance of the Work will be required. Tetra Tech will work cooperatively with the Owner, and particularly with the Hanover Fire Department and Police Department, to restrict access to potentially hazardous areas during the performance of the Work.

5. The Permittee shall ensure that either the Permittee or Permittee's Representatives restore the Property to the condition specified in the work plan as approved by the Hanover Conservation Commission.

6. The Permittee shall ensure that, during the terms of this Agreement, the Permittee and the Permittee's Representatives maintain adequate insurance. Minimum insurance coverages required are as follows:

Workers' Compensation/Employers Liability	Statutory/\$1,000,000
Commercial General Liability	\$1,000,000 per occ./per agg.
Excess Liability	\$4,000,000 per occ./per agg.

The Permittee shall endeavor to have the Owner listed as an Additional Insured on at least its Commercial General Liability insurance policy. A copy of the Permittee's insurance certificate(s) reflecting the above-referenced coverages shall be provided to Owner prior to commencement of the Work.

7. The Permittee further agrees that either the Permittee or Permittee's Representatives shall provide notice to the Owner, as agreed by the parties, by telephone at least two (2) business days prior to the date the Permittee or Permittee's Representatives intend to enter upon the Property to commence Work. The notification shall include identification of the person(s) who will enter the Property and provide an estimate of the amount of time such person(s) shall be performing the Work. Within 48 hours of its submission to the Massachusetts Department of Environmental Protection the Permittee shall provide to Owner a copy of any final report prepared as a result of the Work.

8. All notices or other submissions required or appropriate under the Agreement shall be sent by first class mail, facsimile, nationally recognized overnight delivery service or certified mail, return receipt requested. Such notices or submissions shall be sent, unless written notice has been given of a change to the following person:

{H6032552.1}2



If to Owner:

Troy Clarkson, Town Manager  
Town of Hanover  
550 Hanover Street  
Hanover, MA 02339

If to Permittee:

Ronald J. Marnicio, Project Manager  
Tetra Tech, Inc.  
160 Federal Street, 3<sup>rd</sup> Floor  
Boston, MA 02110

9. This Agreement, as executed by the parties, represents the entire understanding of the parties with respect to the activities herein and shall be governed by and construed in accordance with the laws of the United States and the Commonwealth of Massachusetts. Any disputes which arise under this agreement shall be litigated in the Courts of the Commonwealth of Massachusetts.

10. Should any provision or portion thereof of this Agreement be determined by a court of competent jurisdiction to be invalid or unenforceable, the validity and enforceability of the remaining provisions shall not be impaired and, to the extent necessary, the parties shall negotiate an equitable adjustment in the affected provisions.

**AGREED TO BY:**

**OWNER**

Town of Hanover and  
Town of Hanover acting by and through the Hanover Conservation Commission

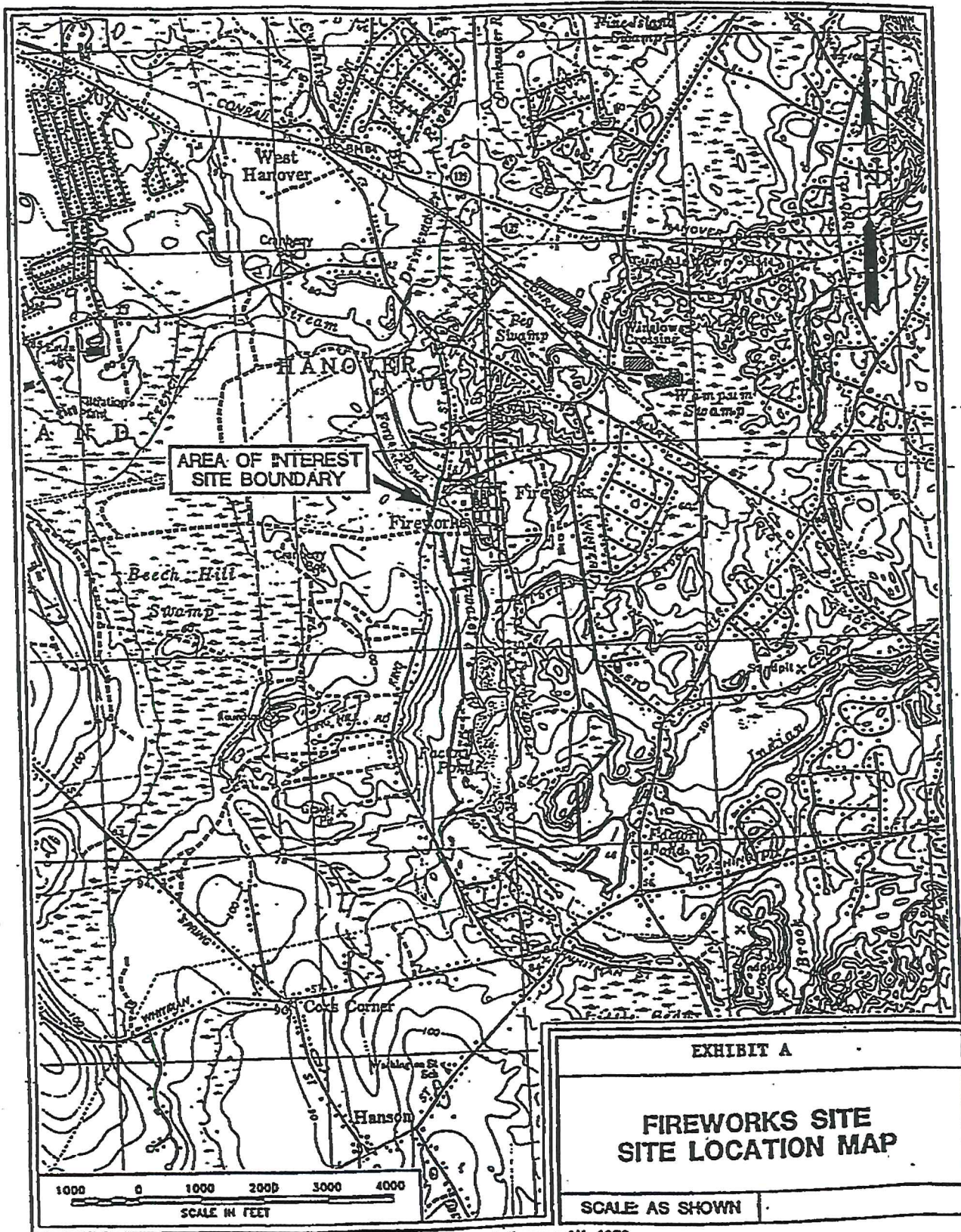
By [Signature]

Date 3.8.17

**TETRA TECH, INC. (Permittee)**

By Ronald J. Marnicio

Date 3/16/17



Source: USGS 7.5 Min Topographic Maps; Whitman, MA, 1977, and Hanover, MA 1978.





## Order of Conditions Hanover Wetlands Protection By-law #6-14

Site/Subdivision Order of Conditions

Location: **FIREWORKS SITE**, Hanover, MA

### A. General Information:

1. From the **Hanover Conservation Commission** as Issuing Authority
2. This issuance is for: a. ☒ an **Order of Conditions** (OOC) b. ☐ an Amended OOC
3. To Applicant: **MICHELLE O'BRIEN, FIREWORKS SITE JOINT DEFENSE GROUP**  
c/o Pierce Atwood, LLP, 100 Summer St., Boston, MA 02110
4. Property Owner: **TOWN OF HANOVER, 550 Hanover St., Hanover, MA 02339**
5. Representative: **TETRA TECH, INC., 160 Federal St., Floor 3, Boston, MA 02110**
6. Project Information:
  - i. Location: **FIREWORKS SITE BETWEEN KING AND WINTER STREETS.**
  - ii. Hanover Assessor Reference: Plan **68**, Lot **45**
  - iii. Property Recording at the Plymouth County Registry of Deeds:  
Book: **3861** on Page: **590**

7. Dates:

<b>3/1/17</b>	<b>3/15/17</b>	<b>4/6/17</b>	<b>4/6/20</b>
a. Date Notice of Intent Filed	b. Date Public Hearing Closed	c. Date of Issuance	d. Date of Expiration

8. **Final Approved Plans and Other Documents on file with the Conservation Commission:**

- "Release Abatement Measure, Fireworks Site, Hanover, MA", dated February 28, 2017, signed and stamped by John Scaramuzzo, PE No. 41349
- "Scope of Work for Release Abatement Measures (RAMS) to be Performed at the Former Test Range Area and the Cold Waste Area, Conditional Approval", dated October 21, 2016, prepared by Leonard J. Pinaud, Chief, State & Federal Site Management, Bureau of Waste Site Cleanup, DEP, Release Tracking # 4-0000090

9. **Description of Project:**

Release Abatement Measure (RAM) to explore for and remove any detected MPPEH and impacted soils at the Former Test Range Berm and Cold Waste Area with 3.1 acres of vegetation clearing in Bordering Vegetated Wetland (BVW), buffer, and upland, and 11, 876 sq. ft. of BVW excavation and restoration.

### B. FINDINGS:

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Bylaw:

**FIREWORKS SITE, Hanover, MA**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Public Water Supply               | <input type="checkbox"/> Erosion & Sedimentation Control | <input checked="" type="checkbox"/> Wildlife Habitat |
| <input type="checkbox"/> Private Water Supply              | <input type="checkbox"/> Rare & Endangered Species       | <input type="checkbox"/> Agriculture                 |
| <input type="checkbox"/> Storm Damage Prevention           | <input type="checkbox"/> Shellfish Habitat               | <input checked="" type="checkbox"/> Recreation       |
| <input checked="" type="checkbox"/> Groundwater Protection | <input type="checkbox"/> Fisheries                       | <input type="checkbox"/> Aesthetics                  |

2. The Hanover Conservation Commission hereby finds the project, as proposed, is:

**APPROVED SUBJECT TO:**

- ☒ the following conditions which are necessary, in accordance with the performance standards set forth in the wetlands regulations, to protect those interests checked above. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications or other proposals submitted with the Notice of Intent, these conditions shall control.

3. **Buffer Zone Impacts:** Shortest distance between limit of project disturbance and the resource area boundary: 0 linear feet

**Inland Resource Area Impacts:**

Type:	Proposed Alteration:	Allowed Alteration:	Proposed Replacement:	Allowed Replacement:
4. <input checked="" type="checkbox"/> Bank	<u>90</u> linear ft.	linear ft.	<u>90</u> linear ft.	linear ft.
5. <input checked="" type="checkbox"/> BVW Bordering Vegetated Wetland	<u>11,876</u> sq. ft.	sq. ft.	<u>11,876</u> sq. ft.	sq. ft.
6. <input checked="" type="checkbox"/> LUWB Land Under Waterbodies or Waterbodies	<u>Recovery of debris within 10 ft. of pond shoreline</u>			
7. <input checked="" type="checkbox"/> BLSF Bordering Land Subject to Flooding Cubic ft. of Flood Storage:	<u>50</u> linear ft.  cubic ft.	linear ft.  cubic ft.	<u>50</u> linear ft.  cubic ft.	linear ft.  cubic ft.
8. <input type="checkbox"/> ILSF Isolated Land Subject to Flooding/ Isolated Vegetated Wetland	linear ft.	linear ft.	linear ft.	linear ft.
9. <input checked="" type="checkbox"/> RFA Riverfront Area	<u>2,771,059</u> Total sf of RFA on site	Proposed: <u>11,876</u> sf alteration in 0' - 100' <input type="checkbox"/> is permanent	Proposed: <u>113,008</u> sf alteration 101' - 200' <input type="checkbox"/> is permanent	Allowed: sf alteration in 0' to 100' Allowed: sf alteration 101' to 200'

In this document APPLICANT shall include owner(s), successor in interest or successor in control of the applicant, or agent(s) as applicable. COMMISSION shall be used to mean Hanover Conservation Commission; ORDER, Order of Conditions; and ENGINEER, professional engineer registered in the Commonwealth of Mass.; SURVEYOR, professional land surveyor registered in the Commonwealth of Massachusetts.



FIREWORKS SITE, Hanover, MA

**\*\*ALL CONDITIONS PRECEDED BY \*\* ARE ONGOING CONDITIONS WHICH RUN WITH THE LAND AND DO NOT EXPIRE WITH THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE. IN ADDITION, ALL CONDITIONS SHALL APPLY TO ANY SUCCESSOR IN INTEREST OR SUCCESSOR IN CONTROL OF THE PROPERTY.**

### **C. General Conditions Under Massachusetts Wetlands Protection Act:**

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order, as an attachment to Order of Conditions SE 31-1149, as well as the Post-Construction Operation and Maintenance Plan, and Long Term Pollution Prevention Plan, must be recorded at the Plymouth County Registry of Deeds **prior to any activity on this site**. No work may commence until such time that proof of recording at the Registry for both documents has been received in the Conservation Office.
4. No work may commence until such time that all appeal periods have passed. See Section "E: Appeals" for appeal period and deadlines.
5. This Order is valid for THREE (3) Years. If all work cannot be completed within three years, refer to Condition "Extensions" of this order for instructions.
6. Work subject to this Order may be inspected at any time by the Commission, its agent(s), consultants, or any other Town official to evaluate compliance with this Order and all data submitted during the hearing process until such time that a Certificate of Compliance is issued. Further, the Commission may require the applicant to submit additional data deemed necessary by them for that evaluation.
7. The term "Applicant" as used in this Order, shall refer to the person(s) listed on the Notice of Intent as the Applicant. If the Applicant is not the current Property Owner, the term "Applicant" shall be inclusionary with respect to "Property Owner".
8. **\*\*THIS ORDER SHALL BE BINDING ON THE APPLICANT, CURRENT PROPERTY OWNER, AND ANY SUCCESSOR-IN-INTEREST OR SUCCESSOR-IN-CONTROL OF THIS/THESE PARCEL(S), AS LISTED IN THIS ORDER-** SECTION A.5. LOCATION.
9. THE COMMISSION BASES ITS DECISIONS ON EVIDENCE PRESENTED AT THE PUBLIC HEARINGS BY THE APPLICANT AND HIS/HER PROFESSIONAL REPRESENTATIVES. BY SIGNING THE APPLICATION, THE APPLICANT HOLDS THAT THE FACTS PRESENTED ARE TRUE TO THE BEST OF HIS/HER KNOWLEDGE. THE APPLICANT, AGREES THAT THE TOWN OF HANOVER SHALL HAVE NO RESPONSIBILITY IN THE EVENT OF FAILURE OF ANY PART OF THE PROJECT.
10. **\*\*APPROVAL FROM OTHER INSPECTORS DOES NOT RELIEVE APPLICANT FROM OBTAINING APPROVAL FROM THE COMMISSION FOR ANY WORK OR CHANGES WITHIN THE COMMISSION'S JURISDICTION.**
11. **\*\*THE APPLICANT SHALL PROVIDE A COPY OF THIS ORDER TO ANY PERSON(S) SUPERVISING ACTIVITIES SUBJECT TO THIS ORDER. THE APPLICANT IS RESPONSIBLE FOR THE ACTIONS OF ALL PERSONS WORKING ON THEIR PROPERTY. ALL PARTIES WORKING ON THIS SITE SHALL HAVE A COPY OF THIS PERMIT IN HAND ASSURING THAT THEY ARE FULLY AWARE OF THE TERMS AND CONDITIONS OF THIS ORDER. ONLY THOSE ACTIVITIES WHICH HAVE BEEN PERMITTED UNDER THIS ORDER AND LISTED ON THE APPROVED PLAN OF RECORD, MAY BE CONDUCTED. TO DO OTHERWISE IS A VIOLATION OF THIS PERMIT.**
12. **\*\*THE APPLICANT SHALL NOTIFY THE CONSERVATION COMMISSION OFFICE IN WRITING WITHIN 30 DAYS OF ALL TRANSACTIONS REGARDING THE SALE OR TRANSFER OF TITLE FOR THIS PARCEL OR ANY PORTION THEREOF. NON-NOTIFICATION TO THE COMMISSION OF THE SALE OR TRANSFER OF ANY PROPERTY SUBJECT TO ANY PERMIT FROM THE CONSERVATION COMMISSION IS A VIOLATION OF THIS ORDER AND SHALL RESULT IN ENFORCEMENT ACTION AND POSSIBLE FINES.**



**FIREWORKS SITE**, Hanover, MA

13. It is the responsibility of the applicant to complete any review required by all agencies with jurisdiction over the activity that is the subject of this Order, and to secure all required permits or approvals. These reviews, permits and approvals may include but are not limited to the following:
  - i. Review by the U.S. Army Corps of Engineers (ACE) for any Category 2 or Individual Permit Activity, and procurement of any permits or approvals identified by the Corps.
  - ii. Review by the DEP and procurement of any permits or approvals identified by the DEP.
  - iii. Review by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) for any projects within estimated and/or priority habitat and any permits or approvals identified by the Program.
  - iv. Review by Hanover Planning Board, Board of Health, Zoning Board of Appeals, Building Inspector and/or the Board of Selectmen (for earth removal permits).
14. In reference to Section A.8. of this Order, to the extent that the plans and specifications of the project submitted with the Notice of Intent may differ from the conditions within this Order, **these conditions shall control.**
15. To ensure that the most recent plan is distributed to any person(s) conducting site work, the final approved plan of record, dated **2/28/17**, shall be used.
16. **\*\*IF YOU MAKE CHANGES, REVISIONS, OR IMPROVEMENTS TO YOUR PROJECT:**  
**YOU MUST NOTIFY THE CONSERVATION COMMISSION OFFICE IMMEDIATELY IN WRITING AND PRIOR TO ACTING ON THE CHANGE, REVISION OR IMPROVEMENT.**
  - i. Any and all work that is not detailed on the approved plan or referenced in this permit shall not be done. If an activity does not have prior approval of the Conservation Commission, and is within their jurisdiction, it is a violation of this Order to conduct such activity and is subject to the enforcement actions and possible fines.
  - ii. This Order is written from evidence presented at the Public Hearing(s). The activities conducted on your site must meet the criteria of the Commission's approval as set forth during those hearings and within this Order. Therefore, **prior to** any changes, additions, or revisions to the approved plan dated **2/28/17**, the revisions and/or design changes must be presented to the Conservation Commission Office **in writing** to determine if the change warrants a review of a revised plan (for minor changes), a hearing for an Amended Order of Conditions, or the filing of a new Notice of Intent (NOI). The notice of change letter must include the following:
    - a. identification numbers from this Order (DEP and BL #'s),
    - b. date of issuance of this Order,
    - c. date of the final approved plan of record,
    - d. and a precise description of the changes/revisions **including how they will affect the wetland resource areas related to this project.**
    - e. All applicable review fees for revised plan requests shall be as per the most current Bylaw Fee Schedule and must be paid in full prior to the Commission's meeting at which the revisions will be reviewed.
  - iii. Of special concern to the Commission are those changes to the approved plan which may or will alter an area subject to protection under the Wetlands Protection Act, 310 CMR 10.00 and the Town Wetland Bylaw #6-14 and their associated regulations.
  - iv. Changes or revisions that are required for other Federal, State or local agencies/departments are ***not exempt*** from this condition.
17. **Prior to any activity on the site and prior to recording this Order at the Plymouth County Registry of Deeds**, the applicant shall read this document and sign the Acknowledgement Statement attached to this Order. Submission of this Statement to the Conservation Commission is required prior to commencement of any work on this site. By signing the Acknowledgement Statement you are stating that

**FIREWORKS SITE**, Hanover, MA

you understand the conditions of this Order, that you will abide by its content, and that you understand that perpetual conditions run with the land and do not expire with this Order.

18. **Prior to any activity on site**, the boundaries of all wetland resource areas shall be inspected to ensure wetland flags are in appropriate locations and shall be confirmed by the Conservation Commission or its designee as per the *Required Inspections* schedule listed below.
19. **Prior to any activity on site**, the limit of work shall be clearly marked with stakes or similar indicators, and shall be confirmed by the Conservation Commission or its designee as per the *Required Inspections* schedule listed below. Said stakes or flags shall be checked frequently and replaced as necessary. The limit of work line shall be maintained until all construction is complete and a Certificate of Compliance has been issued.
20. **Prior to any activity on site**, the applicant shall submit a contact sheet for all persons working at the site responsible for emergency situations.
21. **\*\*NO DEBRIS OR EQUIPMENT OF ANY KIND MAY BE STORED, DISPOSED OF OR DUMPED IN A WETLAND RESOURCE AREA.**
22. **\*\*ALL DE-WATERING ACTIVITIES SHALL BE CONDUCTED AS PER THE APPROVED PLAN OF RECORD.**
23. The work associated with this Order is not subject to the Massachusetts Stormwater Policy Standards.
24. Work subject to this Order may be inspected at any time by the Commission, its agent(s), consultants, or any other Town official to evaluate compliance with this Order and all data submitted during the hearing process until such time that a Certificate of Compliance is issued. Further, the Commission may require the applicant to submit additional data deemed necessary by them for that evaluation.

Approval from Inspectors employed by other agencies or Town Departments does not relieve the applicant from his/her obligations to this Order or for obtaining approval from the Commission for any additional work or changes to approved activities within the Commission's jurisdiction.

No on-site inspections shall take place for projects that have not submitted appropriate proof of recording at the Plymouth County Registry of Deeds and submission of the Acknowledgement page from this Order.

The applicant shall contact the Conservation Commission Office to make arrangements for site inspections for the milestones listed below as per the schedule below:

**\*\*\*\*\*REQUIRED INSPECTIONS\*\*\*\*\***

**Pre-RAM Activities:**

Date(s) Conducted: \_\_\_\_\_

- ☐ the acknowledgement page has been submitted to the Conservation Office
- ☐ submission of PC recording receipt for this permit and the Post Construction O & M plan
- ☐ submission of letter from Engineer stating that erosion control has been staked in approved locations
- ☐ signage in place showing **"MA DEP File Number SE 31-1149, BL FILE # 31-1149"**
- ☐ wetland flags in place to show boundaries of all resource areas
- ☐ limit of work and approved erosion control materials placed in approved locations
- ☐ any and all trees designated for removal clearly marked for approval by the Conservation Agent and site engineer
- ☐ temporary stockpiles with sufficient erosion control materials at the base to prohibit leaching to wetlands
- ☐ staging area for re-fueling and other activities including the use of oil and/or other hazardous materials with adequate spill response materials at hand

**During RAM Activities:**

Date(s) Conducted: \_\_\_\_\_

- ☐ initial site clearing – "tree removal on a limited portion of embankment" - as per NOI narrative
- ☐ containment of all stockpiled materials to check leaching and/or sedimentation into resource areas
- ☐ weekly site maintenance check
- ☐ weekly erosion control review and general site inspection



**FIREWORKS SITE**, Hanover, MA

**Post RAM (first growing season year):**

- ☐ establishment of vegetation for disturbed areas
- ☐ bank restoration
- ☐ general site inspection (weekly until stabilized)

Date(s) Conducted: \_\_\_\_\_

**Post RAM (after first growing season):**

- ☐ establishment of vegetation for disturbed areas
- ☐ cleanup of site
- ☐ final erosion control inspection prior to Request for Certificate of Compliance

Date(s) Conducted: \_\_\_\_\_

NOTE: Please be advised that additional site inspections may be added by the Conservation Agent as necessary.

**25. During Construction:**

- i. Workers shall be informed that use of machinery, storage of machinery or materials, stockpiling of soil, or construction activity is prohibited beyond the limit of work line at all times.
- ii. All equipment shall be inspected regularly for leaks. Any leaking hydraulic lines, cylinders or any other components shall be fixed immediately.
- iii. All equipment shall be operated, parked, and maintained so as to limit alterations of wetlands and buffer zones to those areas clearly identified on the approved plans of record and demarcated in the field by the flagging and limit of construction barriers. No equipment is to enter or cross wetland resource areas or buffer areas at any time unless the location of disturbance is marked on the plans referenced in this Order and flagged in the field.
- iv. Cement trucks and/or any other construction vehicles or equipment shall not be washed out in any wetland resource or buffer zone area, or into any drainage system. Any deposit of cement or concrete products into a buffer zone or wetland resource area shall be immediately removed.
- v. Throughout construction, a stone apron as per DPW requirements, shall be placed at the point of access to the site in order to prevent the transport of sediments from the construction site into the roadway and drainage system. The apron shall remain in place until such time that the site is stabilized, which will require regular monitoring and inspection to determine if placement of additional approved stone is necessary.

**26. Erosion Control:**

- i. The Commission reserves the right to impose additional protections for all portions of this project to mitigate any impacts which could result from site erosion, or any noticeable degradation of surface water quality discharging from the site.
- ii. If soils are to be disturbed for longer than two months, a temporary cover of rye or other grass should be established to prevent erosion and sedimentation. If the season is not appropriate for plant growth, exposed surfaces shall be stabilized by other appropriate erosions control measures, firmly anchored, to prevent soils from being washed by rain or flooding.
- iii. Erosion and sedimentation control devices shall be inspected after each storm event and repaired or replaced as necessary. Any accumulated silt adjacent to the barriers shall be removed.

**27. Stockpiles:**

- i. All stockpiles are temporary. A Certificate of Compliance will not be issued until the site is in full compliance with this Order and all construction debris and extra materials are removed from the site.
- ii. All stockpiles must be shown on the approved plan of record and shall be located outside of all resource areas, their associated buffer zones, and within the limit of work. No stockpiled materials are allowed beyond the limit of work line.
- iii. If it becomes necessary for a stockpile on site (not detailed on the approved plan), the applicant must notify the Conservation Commission Office in writing including a description of the contents and

**FIREWORKS SITE**, Hanover, MA

requested location of the stockpile prior to the creation of the pile. If said materials can be properly placed or stored outside all resource areas and their associated buffer zones, while maintaining the limit of work line, approval from the Conservation Staff may be obtained.

- iv. All stockpiles left for a period of 48 hours or more, shall be maintained under cover to prevent erosion from wind and rain events and shall be surrounded by approved erosion control materials to prevent sedimentation into the wetlands.

**28. Stormwater Management:**

- i. **\*\*THERE SHALL BE NO INCREASE IN THE POST-DEVELOPMENT DISCHARGES FROM THE STORM DRAINAGE SYSTEM OR ANY OTHER CHANGES IN POST-DEVELOPMENT CONDITIONS THAT ALTER THE POST-DEVELOPMENT WATERSHED BOUNDARIES AS CURRENTLY DEPICTED IN THE NOTICE OF INTENT AND APPROVED BY THIS ORDER OF CONDITIONS, UNLESS SPECIFICALLY APPROVED IN WRITING BY THE COMMISSION.**
- ii. **\*\*AN APPROVED OPERATIONS AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT SYSTEMS, INCLUDING BEST MANAGEMENT PRACTICES, HAS BEEN SUBMITTED WITH THE NOTICE OF INTENT AND APPROVED BY THE CONSERVATION COMMISSION WITH THIS ORDER. NO ADDITIONAL APPLICATIONS WILL BE REQUIRED TO CONDUCT MAINTENANCE OF THE ABOVE REFERENCED STRUCTURES.**
- iii. **\*\*AN ANNUAL MAINTENANCE REPORT SHALL BE PROVIDED TO THE CONSERVATION COMMISSION BY JUNE 1<sup>ST</sup> OF EACH YEAR REPORTING ON THE MAINTENANCE AND OPERATION PROCEDURES WHICH HAVE BEEN MET FOR THAT YEAR. THIS REPORTING REQUIREMENT WILL COMMENCE WITH THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE AND CONTINUE IN PERPETUITY.**
- iv. **\*\*THE APPLICANTS, OWNERS, AND THEIR SUCCESSORS AND ASSIGNEES SHALL MAINTAIN ALL STORMWATER MANAGEMENT COMPONENTS UNDER THEIR RESPONSIBILITY ON THIS SITE TO AVOID BLOCKAGES AND SILTATION WHICH MIGHT CAUSE FAILURE OF THE SYSTEM AND/OR DETRIMENTAL IMPACTS TO NEARBY RESOURCE AREAS, AND SHALL MAINTAIN THE INTEGRITY OF VEGETATIVE COVER ON THE SITE.**

29. If the Department of Environmental Protection (DEP) is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

**30. SPECIAL CONDITIONS:**

- i. *A pre-construction meeting is required prior to beginning site work. A construction sequence schedule shall be provided to the Town of Hanover at that time.*
- ii. *\*\*This document shall be included in all construction contracts, subcontracts and specifications dealing with the site work proposed and shall supersede any conflicting contract requirements. The Contractor(s) will be held jointly liable for any violation of this Order resulting from failure to comply with its conditions.*
- iii. *\*\*A signed Access Agreement between the Town and Tetra Tech shall be appended and recorded with this document.*
- iv. *\*\*All activities shall be conducted in conformance with the construction notes, details and sequence on the approved plan set dated 2/28/17.*
- v. *The applicant must abide by the time of year /weather related construction restriction per 310 CMR 40.53(3)(q).*
- vi. *Any construction material, impacted soil above MCP S-1 standards, or debris shall be disposed of at an appropriate licensed disposal facility.*
- vii. *Cutting of mature trees shall be discretionary and minimized.*
- viii. *Wood chips from tree/ brush cutting shall be allowed to be re-used on site. Chips may be spread in the existing walking pathways in consultation with the Conservation Agent.*



**FIREWORKS SITE**, Hanover, MA

- ix. *This entire document must be recorded simultaneously with the WPA OOC SE 31-1149. Proof of recording shall be submitted to the Conservation Office prior to the commencement of any work associated with this Order.*
- x. *Although not specifically required by this Order, the Conservation Commission reserves the right to engage the services of an independent Environmental Monitor and/or peer review for any and all future conservation filings and/or remedial activities at the site, fees to be paid by the applicant in order to assist in administering the Act and/or Hanover Bylaw.*

**31. Permit Extensions:**

If the project cannot be completed by the expiration date, an extension of time may be requested. The Request for Extension Permit form is available at the Conservation Office or on the Town of Hanover Website ([www.hanover-ma.gov](http://www.hanover-ma.gov)). The following conditions apply to this request:

- i. **\*\*EXPIRED ORDERS OF CONDITIONS ARE NOT VALID AND CAN NOT BE EXTENDED - THERE ARE NO EXCEPTIONS. AN APPLICANT SHALL FOLLOW THE STEPS PROVIDED IN THE CERTIFICATE OF COMPLIANCE REQUEST CONDITION LISTED BELOW, TO CLOSE AN EXPIRED ORDER OF CONDITIONS. ANY FUTURE WORK CONDUCTED ON A SITE WITH AN EXPIRED ORDER OF CONDITIONS IS IN VIOLATION OF THIS ORDER AND IS SUBJECT TO ENFORCEMENT AND POSSIBLE FINES. ADDITIONAL WORK REQUIRES THE SUBMISSION OF A NEW NOTICE OF INTENT PRIOR TO THE COMMENCEMENT OF WORK.**
- ii. The completed Request for Extension Permit form must be submitted ***at least thirty (30) days prior to the expiration date of this permit<sup>1</sup>***. Therefore the deadline for submitting a Request for Extension Permit form for this Order is ***March 6, 2020***.
- iii. Fees, as per the most current Town of Hanover Bylaw Fee Schedule in effect at the time of this Order, apply to Requests for Extension Permits and shall be submitted in full with the completed form. Requests not accompanied by appropriate fees will not be processed.
- iv. A period of one (1), two (2), or three (3) years may be requested.
- v. The Wetlands Protection Act and the Town of Hanover Wetlands Protection Bylaw, both allow more than one extension per project. However, the Commission retains the right to inspect the site and confirm wetland lines with each request. Wetland flags and erosion control materials must remain in place and in good condition until such time that a Certificate of Compliance is issued.
- vi. Prior to work continuing on site, the Extension permit must be recorded at the Plymouth County (PC) Registry of Deeds with proof of recording submitted to the Conservation Commission Office.

**32. Certificate of Compliance Request:**

Upon completion of the project and prior to the expiration date of this Order or any Extension Permits that may be issued on this Order, the Applicant shall submit a completed Request for Certificate of Compliance. This form is available at the Conservation Office or on the Town of Hanover Website ([www.hanover-ma.gov](http://www.hanover-ma.gov)). The following conditions apply to this request:

- i. The completed Request for Certificate of Compliance form must be submitted ***at least thirty (30) days prior to the expiration date of this permit<sup>2</sup>***. Therefore the deadline for submitting a Request for Certificate of Compliance form for this Order is ***March 6, 2020*** or 30 days prior to the expiration date

<sup>1</sup> Extension Permits must be approved at a duly posted open meeting of the Conservation Commission. Approval is based on inspection of the site by the Commission and/or its designee. The 30 day submittal deadline allows for scheduling of the inspection and placement on the Commission's agenda. If for valid Orders due to unforeseen circumstances, the 30 day deadline cannot be met, but the inspection and the open meeting timeframe is available, the 30-day deadline may be adjusted. However, expired Orders will not be extended for any reason.

<sup>2</sup> Certificates of Compliance (COC) must be approved at a duly posted open meeting of the Conservation Commission. Approval is based on inspection of the site by the Commission and/or its designee. The 30 day submittal deadline allows for scheduling of the inspection and placement on the Commission's agenda. If, for un-expired Orders and for unforeseen circumstances, the 30 day deadline cannot be met, but the inspection and the open meeting timeframe is available, the 30-day deadline may be waived. Requests for COC's on an expired Order are subject to late fees as per the most current Bylaw Fee Schedule.

**FIREWORKS SITE**, Hanover, MA

of any Extension that has been issued by the Commission and duly recorded at the Plymouth County Registry of Deeds.

- ii. There are no fees applicable to a Request for Certificate of Compliance pertaining to this Order if the request is submitted within the required deadline. If the deadline is not met, late fees as per the most current Hanover Bylaw Fee Schedule in effect at the time of the request submittal, shall be imposed. Requests not accompanied by appropriate fees will not be processed.
- iii. If the project does not take place or for any reason will not take place, a Request for Certificate of Compliance based upon "*work never commenced*" may be submitted. Written documentation including an explanation of circumstances and photos of site must accompany such a request. There are no fees applicable for this type of request.
- iv. A Request for Certificate of Compliance submittal for completed projects shall include the following:
  - a. the *Request for Certificate of Compliance* form, completed by the applicant/property owner or his/her representative;
  - b. full payment in the form of a check to the Town of Hanover for any appropriate fees;
  - c. a letter from an engineer or other professional as appropriate, certifying compliance of the project with the most current approved plan of record, including the date of the final plan;
  - d. two (2) copies of As-Built plans with professional engineer's wet seal, showing distances of all structures and alterations within the Commission's jurisdiction, and any other information the Commission may specify, i.e. septic, easements, conservation posts, with any deviations from the approved plan of record as so noted in this Order, shall be detailed on the As-Built Plan by a clear notation and accompanied by a written explanation of each revision;
  - e. at least three colored photos<sup>3</sup> or digital prints of the site, showing all completed project components including, structures, landscaping, stormwater management components and permanent setback markers, if they were required, and each photo shall be labeled with the date and location of property.
- v. Partial Certificates of Compliance may be issued by this Commission, but shall require establishment of an Escrow Account for incomplete work. Submittal for this type of request shall include the above requirements as well as a letter from a professional engineer describing the incomplete portion of work, a valid calculation of the amount to be held in escrow, and a check for payment of the appropriate funds to establish the escrow account.
- vi. Upon receipt of the above items, a site inspection will be conducted in order to determine compliance with the conditions in this permit. Date of site Inspection: \_\_\_\_\_
- vii. **\*\*EXPIRED ORDERS OF CONDITIONS OR THOSE WITH EXPIRED EXTENSION PERMITS ARE SUBJECT TO LATE FEES IN REGARD TO THE ISSUANCE OF CERTIFICATES OF COMPLIANCE. THE SAME PROCESS AS LISTED ABOVE APPLIES BUT WILL INCLUDE PAYMENT OF ANY AND ALL REQUIRED LATE FEES AS PER THE MOST CURRENT BYLAW FEE SCHEDULE IN EFFECT AT THE TIME OF THE SUBMITTAL.**
- viii. **\*\*NO WORK MAY TAKE PLACE ON A PROJECT WITH AN EXPIRED ORDER OF CONDITIONS ( OR EXPIRED EXTENSION PERMIT. ANY FUTURE WORK ON THE SITE WITHIN THE COMMISSION'S JURISDICTION, REQUIRES SUBMISSION OF A NEW NOTICE OF INTENT AND A CERTIFICATE OF COMPLIANCE FOR THE OPEN, BUT EXPIRED ORDER.**
- ix. **\*\*THE CERTIFICATE OF COMPLIANCE SHALL BE RECORDED AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS. PROOF OF RECORDING MUST BE SUBMITTED TO THE CONSERVATION COMMISSION. LACK OF RECORDING THE CERTIFICATE OF COMPLIANCE IS IN VIOLATION OF THIS ORDER AND WILL CAUSE DELAYS IN THE PERMITTING PROCESS FOR FUTURE PROJECTS THAT FALL WITHIN THE COMMISSION'S JURISDICTION ON THIS SITE.**

\*\*\*\*\* END OF CONDITIONS \*\*\*\*\*

<sup>3</sup> For larger projects, it may be necessary to submit more than 3 photographs. Check with the Conservation Staff at 781-826-6505.



Location: # 0 KING ST.- FIREWORKS SITE, Hanover, MA

#### D. COMMISSION MEMBER SIGNATURES

This Order is valid for three (3) years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

1. Date of Issuance: 4-6-17

Please indicate the number of members who will sign this form.

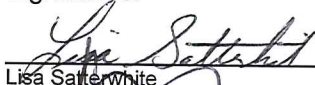
2. Number of Signers: 4

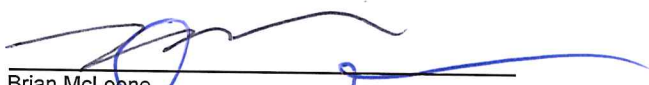
This Order must be signed by a majority of the Conservation Commission (*three members*).

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the Applicant.

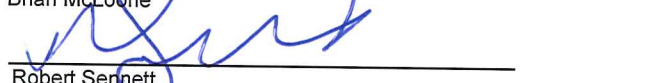
A copy of this Order must be also be mailed to or hand delivered at the same time to DEP, SERO, unless filing electronically, and the property owner, if different from the Applicant.

Signatures:

  
\_\_\_\_\_  
Lisa Satterwhite

  
\_\_\_\_\_  
Brian McLoone

  
\_\_\_\_\_  
Frank Brierley

  
\_\_\_\_\_  
Robert Sennett

  
\_\_\_\_\_  
(vacant), Commissioner

☐ (if applicable) Associate Member as Acting Member: \_\_\_\_\_

#### E. Appeals to the Hanover Bylaw Order of Conditions:

PLEASE NOTE THAT CONDITIONS RELATING TO THE MA WPA PORTION (SECTION C) AND THOSE RELATING TO THE HANOVER BY-LAW PORTION (SECTION D) OF THIS ORDER OF CONDITIONS MUST BE APPEALED SEPARATELY.

The applicant, the owner, any person aggrieved by this Order, any owner of a parcel of land abutting the property subject to this permit, or any ten Hanover residents are hereby notified of their right to request the Trial Court of the Commonwealth of Massachusetts to issue a Superseding By-Law Order of Conditions. The request must be made in person and documents delivered by hand delivery to the appropriate Court Clerk and Division of the Trial Court as listed above. As per M.G.L. c. 249 §4, "Such action shall be commenced within sixty (60) days next after the proceeding complained of."

**A copy of the request shall, at the same time, be sent by certified mail or hand delivery to the HANOVER Conservation Commission and to the applicant, if he/she is not the appellant.**

This Bylaw Order of Conditions, issued under the Town of Hanover Wetlands Protection By-Law #6-14 is not appealable to DEP, and must be appealed to the Trial Court for the Commonwealth of Massachusetts, Superior Division.

**FIREWORKS SITE**, Hanover, MA

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**F. Recording Information:**

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**Prior to the commencement of work**, this BYLAW Order of Conditions **BL 17-06** AND the related MA DEP Order of Conditions **SE 31-1149** must be recorded in the Plymouth County Registry of Deeds or the Land Court if required, within the chain of title of the affected property. In the case of recorded land, the Orders shall be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, the Orders shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the permits. The recording information on this page shall be submitted to the Hanover Conservation Commission

**SUBMIT PROOF OF RECORDING TO CONSERVATION COMMISSION PRIOR TO COMMENCING ANY WORK ON SITE.**

1. ☐ ORIGINAL RECEIPT FROM PC REGISTRY OF DEEDS

AND

1. ☐ DETACH LOWER PART OF THIS PAGE, AT DOTTED LINE, AFTER PC REGISTRY OF DEEDS HAS STAMPED

---

To: Hanover Conservation Commission

Please be advised that the Order of Conditions for the Project at:

**Fireworks Site**

Project Location

**BL 17-06**

TOH Bylaw File Number

**SE 31-1149**

MassDEP File

*has been recorded at the Registry of Deeds of:*

**Plymouth**

County

Book:

AND ON

Page:

Enter New Page #

for **Fireworks Site Joint Defense Group** and has been noted in the chain of title for this property.

Applicant/Property Owner's Name

In accordance with the Order of Conditions issued on:

**April 6, 2017**

Date

If recorded land, the instrument number identifying this transaction is: \_\_\_\_\_

If registered land, the document number identifying this transaction is: \_\_\_\_\_



FIREWORKS SITE, Hanover, MA

## Appendix A.

DO NOT REMOVE THIS PAGE- this page may be copied.

APPLICANT AND CONTRACTOR TO SIGN EACH STATEMENT BELOW, prior to recording at PC Registry:

### ACKNOWLEDGEMENT STATEMENT of APPLICANT

Sign this page, leave it in your permit.

You have been provided with a copy of this page. Sign the copy and submit the signed COPY to the Commission prior to Recording this permit at PC Reg. Deeds.

I, Michelle N. O'Brien on behalf of Fireworks Site Joint Defense Group do hereby acknowledge that I have read this  
APPLICANT Print Name

Order of Conditions and as the Applicant, understand the conditions listed herein and will follow them. Further, that there are deadlines, inspection schedules, and conditions to meet, as well as perpetual conditions (preceded by "\*\*\*") which run with the land and do not expire with this Order. I further acknowledge that a copy of this Order of Conditions including any appendices will be provided to new owners of individual lots as well as any Home Owners Association, ( if applicable), understand that to fail to do so is subject to enforcement actions and fines.

Signed: Michelle N. O'Brien

Print: Michelle N. O'Brien

April 19, 2017

Signature of Applicant/Property Owner (Sign and print name- *may not be signed by Applicant's Representative*) Date Signed

### ACKNOWLEDGEMENT STATEMENT of PRIMARY CONTRACTOR

Sign this page, leave it in your permit. COPY THIS PAGE and submit COPY to the Commission prior to Recording this permit at PC Reg. Deeds.

I, TetraTech, Inc. do hereby acknowledge that I have read this  
CONTRACTOR Print Name

Order of Conditions and ~~as the Applicant~~ understand the conditions listed herein and will follow them. Further, that there are deadlines, inspection schedules, and conditions to meet, as well as perpetual conditions (preceded by "\*\*\*") which run with the land and do not expire with this Order. I further acknowledge that a copy of this Order of Conditions including any appendices will be provided to new owners of individual lots as well as any Home Owners Association, ( if applicable), understand that to fail to do so is subject to enforcement actions and fines.

Signed: Ronald J. Marnicio

Print: Ronald J. Marnicio

April 19, 2017

Signature of Applicant/Property Owner (Sign and print name- *may not be signed by Applicant's Representative*) Date Signed

FIREWORKS SITE, Hanover, MA

**Appendix B.**  
DO NOT REMOVE THIS PAGE.

**Change of Ownership - Notification to Commission**

COPY THIS FORM FOR SUBMITTAL TO CONSERVATION OFFICE

This form is to be submitted upon the sale or transfer of ownership for any Hanover property subject to an Order of Conditions, including the sale of individual subdivision lots. Non-notification of sale or transfer of a parcel subject to an Order of Conditions is a violation of the Order, is subject to enforcement action, and may delay future permitting of projects on this site.

Date: \_\_\_\_\_

Location of property: \_\_\_\_\_ in Subdivision: \_\_\_\_\_

DEP File No: SE 31- \_\_\_\_\_ & Hanover Bylaw #: BL \_\_\_\_\_

To the Hanover Conservation Commission:

I, \_\_\_\_\_ acknowledge with my signature below, that I am (or will be)<sup>4</sup> the current owner of a parcel located at the address listed above, having received the property through purchase, trade, or transfer (*circle one*) from the person(s) listed below:

\_\_\_\_\_ on \_\_\_\_\_,

or will on this Date of Closing: \_\_\_\_\_ and further

I acknowledge that I have a copy of the Order of Conditions and that I understand its content including the special and perpetual conditions that I must abide by as the new property owner, and that any changes or revisions proposed to the approved plan of record must be submitted to the Conservation Commission in writing for approval - prior to any work conducted on the site.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Sign and Print Name

Mailing Address: \_\_\_\_\_

Contact number: ☐ cell phone ☐ home phone \_\_\_\_\_

E-mail: \_\_\_\_\_

<sup>4</sup> This form may be submitted prior to sale/purchase with submission of written documentation to verify final date of transaction.

**Appendix B      Proposed Locations for the Posting of "No Trespassing" Signs and the  
Placement of Safety Fencing and Caution Tape**



