



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

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November 10, 2016

Barnstable Municipal Airport
480 Barnstable Road
Hyannis, MA 02601
ATTN: Mr. Roland Breault, Manager

RE: **BARNSTABLE - HYANNIS**
Release Tracking Number (RTN) 4-0026347
Barnstable Municipal Airport
**NOTICE OF RESPONSIBILITY/
REQUEST FOR IMMEDIATE RESPONSE
ACTION/INTERIM DEADLINE**

**This is an important notice.
Failure to take appropriate action in response
to this notice could result in serious legal consequences**

Dear Mr. Breault:

The Massachusetts Department of Environmental Protection (MassDEP or the Department), Bureau of Waste Site Cleanup is tasked with ensuring the cleanup of oil and hazardous material releases pursuant to the Massachusetts Oil and Hazardous Material Release Prevention and Response Act (M.G.L. Chapter 21E). This law is implemented through regulations known as the Massachusetts Contingency Plan (310 CMR 40.0000 et seq. – the MCP). Both M.G.L. c. 21E and the MCP require the performance of response actions to provide for the protection of harm to health, safety, public welfare and the environment which may result from releases and/or threats of releases of oil and/or hazardous material (OHM) at disposal sites.

MassDEP has reason to believe that there has been a release to the environment which has resulted in designating the Barnstable Municipal Airport (BMA) as a disposal site as defined by the MCP. Specifically, 1,4-dioxane and perfluoroalkyl substances (PFAS), including perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) and other related compounds that are contained in aqueous film-forming foam (AFFF), have been released to the groundwater at or near BMA (the Site) and thereby impacted the groundwater source which supplies the Maher Public Water Supply Wells located southeast of BMA. The Site is defined by M.G.L. c. 21E and the MCP as any place where OHM have come to be located. MassDEP has assigned Release Tracking Number (RTN) 4-0026347 to this release/Site.

Further, MassDEP has reason to believe that you (as used in this letter, "you" refers to the Barnstable Municipal Airport) are a Potentially Responsible Party (PRP) with liability under M.G.L. c.21E §5, for response action costs. The purpose of this notice is to inform you of your legal responsibilities under State

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law for assessing and/or remediating the release at the Site. For purposes of this Notice of Responsibility (NOR), the terms and phrases used herein shall have the meaning ascribed to such terms and phrases by the MCP unless the context clearly indicates otherwise.

BACKGROUND INFORMATION

EPA UCMR3 Program

In May 2012, the United States Environmental Protection Agency (EPA) published the final rule "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR3) for Public Water Systems" indicating that thirty chemical constituents, that have not historically been considered as drinking water contaminants, would be analyzed in samples collected from wells serving large public water systems and a representative number of public water systems serving less than 10,000 people from 2013 to 2015.

The contaminants analyzed included, among other compounds, 1,4-dioxane and PFAS, including PFOS and PFOA. Collectively, PFAS and 1,4-dioxane are considered "emerging contaminants" which are contaminants that are/were previously unregulated by any state or the federal government, but due to increasing concerns about their widespread use, reports of their presence in public water supplies, and a growing body of information that the toxicity, mobility and bioaccumulation potential of these compounds have the potential to pose adverse effects to human health and the environment, the EPA included 1,4-dioxane and PFAS in their UCMR3 sampling program.

1,4-Dioxane

In June 2014, MassDEP lowered the Reportable Concentration and Method 1 Groundwater Category GW-1 Standard for 1,4-dioxane from 3.0 micrograms per liter ($\mu\text{g/L}$) to 0.3 $\mu\text{g/L}$ based on new toxicological information and improved laboratory analytical methods. Information available for 1,4-dioxane indicates it is present in airport deicing fluids and is typically associated with chlorinated solvents, particularly 1,1,1-trichloroethane (1,1,1-TCA), a solvent that has been documented to have been released to the groundwater at the BMA.

The compound 1,4-dioxane has been detected in the Maher public drinking water wells located southeast of BMA. In addition, MassDEP has been provided with analytical data from BMA that indicates that on May 28, 2015, 1,4-dioxane was detected at 0.962 $\mu\text{g/L}$ in the groundwater from monitoring well OW-9DD, a deep well (87' below the ground surface) located 250 feet upgradient of the Maher Wellfield on property owned by the Town of Barnstable. Hydrogeological data compiled for BMA for previous releases indicate that groundwater is migrating from the BMA in a southeasterly direction toward the Maher Wellfield.

Given the presence of 1,4-dioxane in the groundwater immediately upgradient of the Maher Wellfield, the hydrogeologic connection between BMA and the Maher Wellfield, and the potential sources of 1,4-dioxane at BMA, MassDEP has reason to believe that 1,4-dioxane has migrated to the Town of Barnstable property and to the Maher Wellfield via groundwater from the BMA property.

PFAS

In May 2016, the EPA promulgated a Health Advisory (HA) for PFAS of 0.07 micrograms per liter ($\mu\text{g/L}$) for PFOS and PFOA combined. The EPA "*Fact Sheet, PFOS and PFOA Drinking Water Health Advisories*" states that if both PFOS and PFOA are detected, the combined concentrations should be compared to the 0.07 $\mu\text{g/L}$ lifetime HA. The EPA HA is based on the best available peer-reviewed studies of the effects of PFOA and PFOS on laboratory animals (rats and mice), and was also informed by epidemiological studies of

human populations that have been exposed to PFAS. These studies indicate that exposure to PFOA and PFOS above certain concentrations may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations), cancer (e.g., testicular, kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), thyroid effects and other effects (e.g., cholesterol changes).

PFAS have been widely used in industrial and consumer applications, including stain- and water-resistant coatings for fabrics and carpets, oil-resistant coating for paper products approved for food contact, mining and oil well surfactants, floor polishes, insecticide formulations and AFFF.

Given the above, PFAS are therefore considered a hazardous material pursuant to the MCP, specifically 310 CMR 40.0342(1)(a), and is therefore subject to the requirements of M.G.L. c. 21E and the MCP.

RELEASE/SITE SPECIFIC INFORMATION

Analytical data from EPA’s UCMR3 program and analytical data from sampling completed by MassDEP for the Maher Wells has been summarized in the following table:

Detections of 1,4-Dioxane and PFAS in the Maher Wells, Barnstable, MA (µg/L)

Sample Location:	Maher Treatment Plant (UCMR3)		Maher 1 (MassDEP)		Maher 2 (MassDEP)		Maher 3 (MassDEP)		MCP RCGW-1 or EPA HA
	11/20/13	5/22/14	3/4/15	5/1/15	3/4/15	5/1/15	3/4/15	5/1/15	
1,4-dioxane	0.26	0.37	0.28	0.26	0.86	0.44	0.35	0.36	0.3
PFOA	<0.02	0.02	NS	NA	NS	NS	NS	NS	.07*
PFOS	0.06	0.086	NS	NA	NS	NS	NS	NS	.07*
PFHpA	.014	.02	NS	NA	NS	NS	NS	NS	NA
PFHxS	0.032	0.049	NS	NA	NS	NS	NS	NS	NA

PFOA: Perfluorooctane sulfonic acid

PFOS: Perfluorooctanoic acid

PFHpA: Perfluoroheptanoic acid

PFHxS: Perfluorohexane sulfonic acid

NS: Not sampled

NA: Not available

*This value should be compared to the sum of PFOS and PFOA if both are present

Bold values indicate an exceedance of either the MCP RCGW-1 or the EPA Health Advisory

On May 19, 2015, Horsley Witten Group, on your behalf, submitted 1,4-dioxane analytical data results to MassDEP for groundwater sampling collected from selected monitoring wells at the BMA. None of the samples had concentrations of 1,4-dioxane above the detection limit of 0.15 µg/L. These four wells are located at least 5,000 feet northwest of the Maher Wells and are screened in the shallow aquifer.

On June 9, 2015, Horsley Witten Group, on your behalf, submitted additional analytical data results to MassDEP that summarized the results of groundwater sampling for three additional monitoring wells from a single well cluster located on the Town of Barnstable property, immediately upgradient of the Maher Wellfield and downgradient of the southeastern edge of the BMA property. The results indicate that 1,4-dioxane was not present above detection limits in the groundwater from the shallow and intermediate monitoring wells, but was detected at 0.926 µg/L in the groundwater from the deep

monitoring well. This concentration exceeds the MassDEP Reportable Concentration and Groundwater Category GW-1 Standard.

In May 2016, when the EPA published the Health Advisory for PFOS and PFOA, the detected PFAS concentrations in the Maher Treatment Well exceeded the EPA Health Advisory. As a result of the exceedance, MassDEP issued a Request for Information/Interim Deadline letter (RFI/IDL) on August 4, 2016, to you requesting information specific to the use of AFFF at BMA and any sampling and analytical data for PFAS at BMA.

MassDEP received a response to the RFI on September 14, 2016. According to the response, AFFF containing PFAS have been used and stored at the BMA. In addition, analytical results for PFAS sampling in monitoring wells at the BMA and from monitoring wells associated with the Maher Wells were presented in the response. According to the analytical data, PFAS have been detected in all the groundwater from monitoring wells sampled at the North Ramp of BMA, the Steamship Parking Lot, and the Maher Wells. The monitoring wells located at the North Ramp and Steamship Authority contained PFAS at concentrations above the EPA HA. The monitoring wells associated with the Maher Wells contained PFAS, but below the EPA HA.

Based on the information contained in the response to the RFI issued by MassDEP on August 4, 2016; the groundwater flow direction in the vicinity of the airport; and analytical results for groundwater samples collected from monitoring wells on and downgradient of the BMA property, MassDEP has reason to believe that PFAS has been released to the environment at the BMA. MassDEP has assigned Release Tracking Number (RTN) 4-0026347 to the release of PFAS and 1,4-dioxane.

STATUTORY LIABILITIES

M.G.L. c. 21E and the MCP require the performance of response actions to prevent harm to health, safety, public welfare and the environment which may result from this release and/or threat of release and govern the conduct of such actions.

As a current owner of the property where a release has occurred, you are a Potentially Responsible Party (PRP) with liability under M.G.L. c.21E §5, for response action costs. Section 5 makes the following parties liable under the Commonwealth of Massachusetts: current owners or operators of a site from or at which there is or has been a release or threat of release of oil and/or hazardous material; any person who has owned or operated a site at the time hazardous material was stored or disposed of; any person who arranged for the transport, disposal, storage or treatment of hazardous material to or at a site; any person who transported hazardous material to a transport, storage or treatment site from which there is or has been a release or threat of release of such material; and any person who otherwise caused or is legally responsible for a release or threat of release of oil or hazardous material at a site.

This liability is "strict", meaning that it is not based on fault, but solely on your status as owner, operator, generator, transporter, disposer or other person specified in M.G.L. c.21E §5. This liability is also "joint and several", meaning that you may be liable for all response action costs incurred at a disposal site regardless of the existence of any other liable parties.

The MCP requires PRPs to take necessary response actions at properties where there is, or has been, a release and/or threat of release of oil and/or hazardous material. If you do not take the necessary response actions, or fail to perform them in an appropriate and timely manner, MassDEP is authorized by M.G.L. c. 21E to perform the work. By taking such actions, you can avoid liability for response action costs incurred

by MassDEP in performing these response actions and any sanctions that may be imposed for failure to perform response actions under the MCP.

The MCP requires PRPs and any other person undertaking response actions to perform Immediate Response Actions (IRAs) in response to sudden releases, Imminent Hazards (IH) and Conditions of Substantial Release Migration (SRM). Such persons must continue to evaluate the need for IRAs and notify MassDEP immediately if such a need exists.

If you are a PRP and you have reason to believe that your performance of the necessary response actions is beyond your technical, financial or legal ability, you should promptly notify MassDEP in writing of your inability in accordance with M.G.L. c. 21E, subsection 5(e), and 310 CMR 40.0172. If you assert or demonstrate in compliance therewith that performing or paying for such response action is beyond your ability, subsection 5(e) provides you with a limited defense to an action by the Commonwealth for recovery of two to three times MassDEP's response action costs and 310 CMR 40.0172 provides you with a limited defense to MassDEP's assessment of civil administrative penalties.

You should be aware that you may have claims against third parties for damages, including claims for contribution or reimbursement for the costs of cleanup. Such claims do not exist indefinitely but are governed by laws that establish the time allowed for bringing litigation. MassDEP encourages you to take any action necessary to protect any such claims you may have against third parties.

You must employ or engage a Licensed Site Professional (LSP) to manage, supervise or actually perform the necessary response actions at this site. You may obtain a list of the names and addresses of licensed professionals from the Board of Registration of Hazardous Waste Site Cleanup Professionals by calling (617) 556-1091, or visiting <http://www.state.ma.us/lsp>.

Response actions at the Site will not be deemed to be completed unless and until a level of No Significant Risk as defined at 310 CMR 40.0900 exists or has been achieved in compliance with the MCP. The MCP requires persons undertaking response actions at a disposal site to submit to MassDEP a Permanent Solution Statement prepared by a LSP upon determining that a level of No Significant Risk exists or has been achieved at the Site. You will be required to pay Annual Compliance Assurance Fees for the Site until a Permanent Solution is achieved.

NECESSARY IMMEDIATE RESPONSE ACTIONS AND INTERIM DEADLINE

The Town of Barnstable has addressed the detection of PFAS and 1,4-dioxane in the Maher Wells by blending the Maher well water with drinking water from the Yarmouth public water supply wells via an overland water line. However, additional evaluation of the presence of PFAS and 1,4-dioxane are necessary to further evaluate the extent of contamination. Based on hydrogeological information, portions of the BMA property where PFAS contamination is documented is upgradient of the Mary Dunn wells. In addition, the Zone II for the Mary Dunn well field includes portions of the airport property. Therefore, additional assessment is necessary to evaluate whether PFAS releases at BMA could be contributing to PFAS in the Mary Dunn Wells.

Releases of OHM that impact public and private water supplies are releases that could pose an Imminent Hazard and, pursuant to 310 CMR 40.0311(7), require notification to MassDEP within two hours. As such these releases require that an Immediate Response Action (IRA) be conducted pursuant to 310 CMR 40.0412(1).

Therefore, MassDEP hereby requests that you submit an IRA Plan prepared in compliance with 310 CMR 40.0424 to evaluate whether Imminent Hazards exist relative to public and private water supply wells downgradient of BMA. The IRA Plan should identify all public and private water supply wells located downgradient of BMA or if any portion of the BMA property located within the Zone II of any wells contains PFAS or 1,4-dioxane. BMA should provide any analytical data for any of these wells that have been sampled and analyzed for PFAS and/or 1,4-dioxane. If any public or private water supply well has not been sampled and analyzed for PFAS and 1,4-dioxane, the IRA Plan should include a schedule for conducting this work. The IRA Plan should also include the measures that BMA will conduct to prevent, eliminate, and/or abate any hazards associated with consumption of the drinking water impacted by PFAS above the HA of 0.07 µg/L and/or 1,4-dioxane above the Method 1 GW-1 standard of 0.3 µg/L. Such measures can include, but are not limited to, provision of bottled water, installation of GAC system(s), or connection of private water supply wells to public water. A schedule for implementing these measures should be included in the IRA Plan.

In addition, MassDEP is of the opinion that soil analyses, focusing on the areas where AFFF has been used and/or stored, should be completed for PFAS. Immediate Response Actions should be implemented if the soil is found to contain PFAS.

MassDEP hereby requests that you submit the IRA Plan **on or before December 15, 2016**.

INTERIM DEADLINE

The date established above constitutes an Interim Deadline established pursuant to 310 CMR 40.0167. Failure to comply with an Interim Deadline may result in enforcement actions by the MassDEP, including, but not limited to, the issuance of a Notice of Noncompliance, an Administrative Penalty, and/or Enforcement Orders, or, referral to the Massachusetts Attorney General's Office.

ADDITIONAL RESPONSE ACTIONS

Additional submittals are necessary with regard to this notification, including, but not limited to, the filing of a written IRA Plan, IRA Completion Statement and/or a Permanent Solution Statement (PSS). The MCP requires that a fee of \$1,200.00 be submitted to the Department when a Permanent Solution Statement is filed greater than 120 days from the date of initial notification. Specific approval is required from the Department for the implementation of all IRAs and may be required for Release Abatement Measures (RAMs). RAMs may not be conducted until a RAM Plan is submitted pursuant to 310 CMR 40.0443. Assessment activities, the construction of a fence and/or the posting of signs are actions that are exempt from this approval requirement.

The MCP requires persons undertaking response actions to perform IRAs in response to sudden releases, IHs and Conditions of SRM. In accordance with 310 CMR 40.0426, an IH Evaluation shall be performed as part of an IRA within 14 days of obtaining knowledge of such a condition and shall be submitted to the Department within 60 days.

In addition to verbal notification, 310 CMR 40.0333 requires that a completed Release Notification Form (RNF) be submitted to MassDEP **within sixty (60) calendar days of receipt of this Notice of Responsibility**.

This site shall not be deemed to have had all the necessary and required response actions taken unless and until all substantial hazards presented by the release and/or threat of release have been eliminated and a level of No Significant Risk exists or has been achieved in compliance with M.G.L. c. 21E and the MCP.

If you have any questions relative to this Notice, please contact Angela Gallagher at the letterhead address or by calling (508) 946-2790. All future communication regarding this release must reference the following Release Tracking Number: **4-0026347**.

Sincerely,



Gerard M.R. Martin
Deputy Regional Director
Bureau of Waste Site Cleanup

M/H/AG/lg

CERTIFIED MAIL # 7016 0750 0000 1748 8981
RETURN RECEIPT

ec: Town of Barnstable
Board of Health
Selectmen's Office

Barnstable Department of Public Works, Water Supply Division
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