



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberly Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

May 3, 2024

Water Supply District of Acton
Attn: Commissioners
693 Massachusetts Avenue
P.O. Box 953
Acton, MA 01720

Re: Water Supply District of Acton
PWS ID NO. 2002000
Applications Permit Renewal and
Amendment
WMA Permit 9P4-2-14-002.01

Dear Commissioners:

Please find attached the following:

- Findings of Fact in Support of the Water Management Act Permit Renewal and Amendment; and,
- Renewed and Amended Water Management Act Permit #**9P4-2-14-002.01** for the Water Supply District of Acton in the Concord River Basin.

The signature on this cover letter indicates formal issuance of the attached documents. If you have any question about this document, please contact me duane.levangie@mass.gov.

Sincerely,

Duane LeVangie, Chief
Water Management Act Program
Bureau of Water Resources

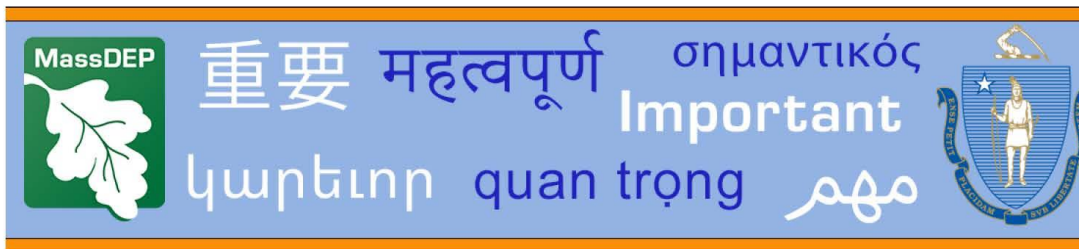
Ecc: Katharine Lange, MassRivers Alliance
Jennifer Pederson, Massachusetts Water Works Association
Alison Field-Juma, OARS: *For the Assabet, Sudbury, and Concord Rivers*
Marielle Stone, MassDEP-Worcester
Robert Bostwick, MassDEP-Worcester

<https://massgov.sharepoint.com/:f:/r/sites/DEP-BWR/DWPArchive/CRO/Acton-2002000-Acton> Permit
Amendment-5-3-2024

This information is available in alternate format. Call Melixza Esenyie at 617-626-1282 or 1-866-7622

MassDEP Website: www.mass.gov/dep

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本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

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Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmanal MassDEP a nan nimewo telefòn ki endike anba a.

Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយកម្មវិធីត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកដ្ឋានយុត្តិធម៌បរិស្ថានរបស់
MassDEP តាមរយៈលេខទូរស័ព្ទដែលបានរាយនាមខាងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu imediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telefoni menxionadu di baixo.

Contact Deneen Simpson 857-406-0738

Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

한국어 Korean

이 문서는 중대하므로 즉시 번역되어야 합니다. 본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

հայերէն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն: Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود. اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

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Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

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Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice (*Direktor für Umweltgerechtigkeit in Massachusetts*) unter der unten angegebenen Telefonnummer.

Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

Italiano Italian

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Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए। यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।

Contact Deneen Simpson 857-406-0738

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Finding of Fact in Support of Amended and Renewed Water Management Permit # 9P4-2-14-002.01 Water Supply District of Acton

The Department of Environmental Protection (the Department or MassDEP) makes the Following Findings of Fact in support of the attached Amended and Renewed Water Management Act (WMA) Permit #9P4-2-14-002.01 and includes herewith its reasons for issuing the Renewed and Amended WMA Permit and for conditions of approval imposed as required by M.G.L. c. 21G, § 11.

Water Supply District of Acton Water Withdrawal History

The Water Supply District of Acton (the District) holds a WMA registration statement (2-14-002.03) for an average annual daily withdrawal volume of 1.56 million gallons per day (MGD) which includes 13 wells (Whitcomb, Conant #1, Lawsbrook, Christofferson, Assabet Well #1A, Assabet Well #2, Assabet Well #2A, the four Scribner Wells,¹ and two Clapp Wells). The registered wells are further limited to approved maximum daily withdrawal rates assigned by MassDEP's Drinking Water Program.

MassDEP issued a Water Management Act permit to the District in April 1999 (the 1999 WMA Permit). The 1999 WMA Permit added the Marshall Wellfield, Kennedy Wells, and Conant II Wells as sources and increased the District's total authorized withdrawal volume. On February 2, 2009, the permit was amended to include Assabet Well #3² as an additional withdrawal point. The 2009 Amended Permit authorized the District to withdraw an annual average of 0.38 MGD, in addition to the 1.56 MGD authorized by the District's registration, for a total authorized annual average daily withdrawal volume of 1.94 MGD. On August 31, 2015, the District submitted an application to renew the 2009 Amended Permit.

In a letter dated September 29, 2015, the Department of Conservation and Recreation's Office of Water Resources (DCR) provided a final Water Needs Forecast (WNF) for the District. This forecast is for the District's total water demand and was prepared based on two separate assumptions, the first being that the District meets the performance standards of 65 Residential Gallons per Capita Day (RGPCD) and 10% for Unaccounted for Water (UAW), and the second

¹ The Scribner Wells are replacement wells for the Scribner Tubular Wellfield which has been abandoned.

² Assabet Well #3 commenced operation on February 2, 2023.

assumes that District's RGPCD and UAW continue based on the trends in RGPCD and UAW at the time that DCR prepared the forecast. Table 1 summarizes DCR's 2015 forecasts out to 2031.

Table 1: DCR WNF 2021-2031

Period	65/10 WNF	Current Trends WNF
2021	2.00 MGD	1.79 MGD
2026	2.05 MGD	1.83 MGD
2031	2.10 MGD	1.87 MGD
2031 with 5% Buffer	2.21 MGD	1.96 MGD

The District's recent withdrawals have been substantially below the DCR 65/10 WNF and the DCR Current Trends WNF for the applicable time period, the 2026 and 2031 projections and the total authorized volume of 1.94 MGD set forth in the 2009 Amended Permit. See Table 2.

**Table 2: Water Supply District of Acton:
Annual Average Daily Withdrawal Volume 2018-2022³**

Calendar Year	Annual Average Daily Withdrawal Volume (MGD)
2022	1.39 MGD
2021	1.44 MGD
2020	1.63 MGD
2019	1.50 MGD
2018	1.56 MGD

On August 12, 2021, the District submitted a permit amendment application. In that application, the District sought approval to add two new withdrawal points -Bedrock Well D and Bedrock Well E while maintaining its total authorized volume of 1.94 MGD.

The Water Management Act (M.G.L. c. 21G)

The Water Management Act (Act) requires the Department to issue permits that balance a variety of factors including without limitation:

- Impact of the withdrawal on other water sources;
- Water available within the safe yield of the water source;
- Reasonable protection of existing water uses, land values, investments and enterprises;
- Proposed use of the water and other existing or projected uses of water from the water source;
- Municipal and Massachusetts Water Resources Commission (WRC) water resource management plans;

³ The Annual Average Daily Withdrawal Volume declined in 2021 and 2022 due to PFAS contamination and reduced production to manage concentrations in finished water.

- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater; treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, flood plains; and
- Reasonable economic development and job creation.

Water Management Regulation Revisions

In 2010, the Executive Office of Energy and Environmental Affairs (EEA) convened the Sustainable Water Management Initiative (SWMI) for the purpose of incorporating the best available science into the management of the Commonwealth's water resources. SWMI was a multi-year process that included a wide range of stakeholders and support from the Departments of Environmental Protection, Fish and Game, and Conservation and Recreation. In November 2012, the *Massachusetts Sustainable Water Management Initiative Framework Summary* (<http://www.mass.gov/eea/docs/eea/water/swmi-framework-nov-2012.pdf>) was released.

On November 7, 2014, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

Without limitation, the Department has incorporated the following into Water Management permitting:

- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the Concord River Basin section of this document). For more information on the Safe Yield methodology, go to the November 28, 2012 SWMI Framework Summary and Appendices;
- Water needs forecasts for public water suppliers developed by the Department of Conservation and Recreation, Office of Water Resources (DCR), using a methodology reviewed and approved by the Massachusetts WRC;
- Water supply protection measures for public water supplies including Zone II delineations for groundwater sources, and wellhead and surface water protection measures as required by Massachusetts Drinking Water Regulations (310 CMR 22.00);
- Water conservation and performance standards reviewed and approved by the WRC in July 2018 ([Details on the 2018 Massachusetts Water Conservation Standards | Mass.gov](#)); including without limitation:
 - performance standard of 65 residential gallons per capita day or less;
 - performance standard of 10% or less unaccounted-for-water;
 - seasonal limits on nonessential outdoor water use;
 - a water conservation program that includes leak detection and repair, full metering of the system and proper maintenance of the meters, periodic review of pricing, and education and outreach to residents and industrial and commercial water users; and

- Environmental protections developed through SWMI, including without limitation;
 - protection for coldwater fishery resources;
 - minimization of withdrawal impacts in areas stressed by groundwater use; and
 - mitigation of the impacts of increasing withdrawals.

Safe Yield in the Concord River Basin

This Renewed WMA Permit is being issued under the safe yield methodology adopted by the Department on November 7, 2014, and described in the regulations at 310 CMR 36.13. As of the date of issuance of this permit, the safe yield for the Concord River Basin is 87.5 MGD, and total registered and permitted withdrawals are 35.25 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Concord River Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

Expiration Date

The 2009 Amended WMA Permit was initially set to expire on August 31, 2011. Prior to that date, the Permit Extension Act, Section 173 of Chapter 240 of the Acts of 2010, as amended by Sections 74 and 75 of Chapter 238 of the Acts of 2012, extended all existing permits by four years. Therefore, WMA permits for withdrawals in the Concord River basin were extended to August 31, 2015.

On August 31, 2015, the District submitted to MassDEP a WMA permit renewal application for their withdrawal in the Concord River Basin. MassDEP published notice of the permit renewal application in the Environmental Monitor on December 9, 2015. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), the District's permit continued in force and effect until MassDEP issues a final decision on the permit renewal application. On August 12, 2021, the District filed a permit amendment application.

The expiration date for all WMA permits going forward in the Concord River Basin is December 6, 2032 in order to restore the staggered permitting schedule set forth in the Water Management regulations.

Findings of Fact for Permit Conditions in Water Supply District of Acton Renewed and Amended Water Management Act Permit

The following Findings of Fact for the special conditions included in the permit generally describe the rationale and background for each special condition in the permit. This summary of permit special conditions is not intended to, and should not be construed as, modifying any of the permit special conditions. In the event of any ambiguity between this summary and the actual permit conditions, the permit language shall control.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volumes.

Special Condition 1 of the 2009 Amended WMA Permit authorizes the District to withdraw an annual average daily volume of 0.38 MGD in addition to the 1.56 MGD authorized by the District's Registration. In both its 2015 permit renewal application and its 2021 permit

amendment application, the District has requested to maintain the permitted volume set forth in the 2009 Amended WMA Permit. Special Condition 1 grants that request.

Special Condition 2, Maximum Authorized Annual Average Daily Withdrawal Volume for Each Withdrawal Point.

Special Condition 2 of the Renewed and Amended Permit maintains the maximum authorized annual average daily withdrawal volumes listed in the 2009 Amended Permit. Special Condition 2 also adds a maximum authorized annual average daily authorized withdrawal volume for Assabet Well #3. The District is adding two new groundwater sources: Bedrock Well D and Bedrock Well E. MassDEP has approved a maximum authorized annual average daily withdrawal volume for these Bedrock Wells.

Special Condition 3, Zone of Contribution Delineations.

MassDEP records indicate that all the District's permitted groundwater sources including Bedrock Well D and Bedrock Well E have approved Zone II delineations.

Special Condition 4, Groundwater Supply Protection.

MassDEP records indicate that the District is currently in compliance with the Groundwater Supply Protection Requirements set forth in the Drinking Water Regulations at 310 CMR 22.21. To ensure future compliance with these regulations, the Renewed and Amended Permit provides that until the Zone IIs of all the District's sources are fully protected, the District shall continue to exercise Best Efforts to encourage each municipality in which a portion of the Zone II of a District source is located to enact groundwater protection measures in accordance with 310 CMR 22.21(2).

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use (RGPCD).

Special Condition 5 of the 2009 Amended WMA Permit required that the District meet the Performance Standard of 65 residential gallons per capita day (RGPCD). The District has been in compliance with this performance standard. Special Condition 5 of the Renewed and Amended Permit maintains this performance standard.

Special Condition 6, Performance Standard for Unaccounted for Water (UAW).

Special Condition 6 of the 2009 Amended Permit required the District to meet the 10% Performance Standard for UAW. The District has been in compliance with the 10% UAW Performance Standard.

Special Condition 6 has been revised to require that the District meet the 10% Performance Standard for UAW two out of every three years. Should the District fail to meet this requirement, the District shall meet the Functional Equivalence requirements based on the AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices as outlined in Appendix B.

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use.

Special Condition 7 of the 2009 Amended Permit required the District to impose seasonal limits on nonessential outdoor water use. Special Condition 7 has been revised to update that special condition. The limitations on seasonal nonessential outdoor water use in Special Condition 7 of the Renewed and Amended Permit are based on:

- The August net groundwater depletion (NGD)⁴ where the permittee's groundwater sources are located;
- The permittee's compliance with the RGPCD performance standard during the preceding year;
- The permittee's choice to implement restrictions either continuously throughout the irrigation season, or only when streamflow falls below trigger levels at an assigned USGS local stream gage; and
- The Renewed and Amended WMA Permit establishes a 7-day Low Flow value that triggers more stringent restrictions on non-essential water use.

Each year, the District may choose one of two options for implementing nonessential outdoor watering restrictions:

1. Calendar triggered restrictions: Restrictions shall be implemented from May 1st through September 30th. Many public water suppliers will find this option easier to implement and enforce than the streamflow triggered approach.

2. Streamflow triggered restrictions: Restrictions shall be implemented at those times when streamflow falls below designated flow triggers measured at an assigned web-based, real-time U.S. Geologic Survey (USGS) stream gage from May 1st through September 30th. At a minimum, restrictions shall commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days. The streamflow triggers are based on flow levels that are protective of habitat for fish spawning during the spring and for fish rearing and growth during the summer.

If the District selects the streamflow approach, it has been assigned the USGS local stream gage #01097300-Nashoba Brook near Acton, MA. The local gage streamflow triggers at this site are 10 cubic feet per second (cfs) for May and June and 3 cfs for July, August, and September. Should the reliability of flow measures at the Nashoba Brook gage be so impaired as to question its accuracy, the District may request, subject to MassDEP's review and approval, to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

⁴ The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion to mean the unimpeded median flow for August minus 2000-2004 groundwater withdrawals plus 2000-2004 groundwater returns described by U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover and Water Quality for Massachusetts Stream Basins*.

The 7-Day Low-flow Trigger, at which restrictions increase is incorporated into both Calendar and Streamflow Triggered restrictions in order to provide additional protection to streamflows when flows are very low. The 7-day low-flow trigger is based on the median value of the annual 7-day low flows for the period of record. The 7-day low-flow trigger for the Nashoba Brook near Acton, MA gage is 0.57 cfs.

The District may choose to implement limits on nonessential outdoor water use that are stricter than those required by the Renewed and Amended Permit. This permit condition does not confer enforcement authority on the permittee.

Special Condition 7 of the Renewed and Amended Permit requires the District to exercise whatever means necessary to adopt and implement the controls necessary to align with the seasonal restrictions on nonessential outdoor water use required herein as soon as possible but no later than May 1, 2024.

Special Condition 8, Requirement to Report Raw and Finished Water Volumes.

Special Condition 8 of the Renewed and Amended Permit ensures that the information necessary to evaluate compliance with the conditions in this permit is accurately reported.

Special Condition 9, General Water Conservation Requirements.

Special Condition 9 of the Renewed and Amended Permit updates the Conservation Requirements set forth in Special Condition 10 of the 2009 Amended WMA Permit. Special Condition 9 incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission (WRC) in July 2018. ([Details on the 2018 Massachusetts Water Conservation Standards | Mass.gov](#)).

NEW PERMIT CONDITIONS

COLDWATER FISHERY RESOURCE, MINIMIZATION AND MITIGATION

The Water Management Regulations revised and promulgated in November 2014 require WMA permits to address protection of Coldwater Fishery Resources (CFR), minimization of the impact of pumping on groundwater depleted subbasins,⁵ mitigation of pumping above the baseline rates.

⁵ Subbasins used for WMA permitting are the 1,395 subbasins delineated by the U.S. Geological Survey in *Indicators of Streamflow Alteration, Habitat Fragmentation, Impervious Cover, and Water Quality for Massachusetts Stream Basins* (Weiskel *et al.*, 2010, USGS SIR 2009-5272).

and potential changes in Biological Category (BC)⁶ and Groundwater Withdrawal Categories (GWC)⁷. Below is an outline of these requirements as they apply to the District.

Table 3: New Permit Conditions as They Apply to the District's Sources

Source	Status Registered (Reg) Permitted (Per) Both Reg and Per (Both)	Subbasin	Biological Category (BC)	Ground water Category (GWC)	August Net Groundwater Depletion	Coldwater Fishery Resources (CFR)
Marshall Tubular Wellfield (09G) Kennedy Wells (10G-13G)	Per	12050	5	5	115.8%	No
Whitcomb Well (01G) Clapp Wells (24G & 25G)	Reg Reg	12066	5	4	2%	No
Conant Well #1 (02G)	Reg	12059	5	4	Surcharged	Yes but no Expected Impact
Lawsbrook Well (03G) Christofferson Well (04G) Scribner Replacement Wells (20G-23G)	Reg Reg Reg	12058	5	4	22.4%	No

⁶ The Water Management Regulations, 310 CMR 36.14(1)(a), establish a biological category (BC) for each subbasin based on the simulated 2000 to 2004 existing condition of aquatic habitat using fluvial fish community characteristics as the surrogate indicator variable. Each biological category represents the percent alteration within the range of these fluvial fish community characteristics as a function of the following subbasin parameters: 1. Impervious cover; 2. Cumulative groundwater withdrawal as a portion of the unimpacted August median flow; 3. Stream channel slope; and 4. Percent wetland within the stream buffer area. The percent alteration for each BC is as follows: BC 1, 0% to 5%; BC 2, > 5% to 15%; BC 3 > 15% to 35%; BC 4, > 35% to 65%; BC 5, > 65%.

⁷ The Water Management Regulations 310 CMR 36.14(1)(b), establishes a groundwater withdrawal category (GWC) based on the ratio of 2000 to 2004 groundwater withdrawal volume to the unimpacted median monthly flow for August and represents conditions during the late summer bioperiod (July thru September). Each GWC represents the range of this ratio that would result in the BC of the same number under conditions of low (15%) impervious cover. The GWC for each withdrawal ratio for the late summer bioperiod is as follows: GWC 1, 0% to 3%; GWC 2, > 3% to 10%; GWC 3, > 10% to 25%; GWC 4, > 25% to 55%; and GWC 5, > 55%.

Assabet Well #2 (06G)	Reg					
Assabet Well #2A (19G)	Reg					
Assabet Well #1A (26G)	Reg	12069	5	4	32.3%	Yes but No Expected Impact
Assabet Well #3 (27G)	Per					
Conant Wells (14G –18G)	Per					
Bedrock Well D(28G) and Bedrock Well E (29G)		12059	5	4	Surcharged	Yes but No Expected Impact

Special Condition 10, Minimization of Impacts to Groundwater Depleted Subbasins

Water Management Act Permittees with groundwater sources in subbasins having an August net groundwater depletion (August NGD) of 25% or greater are required to develop a plan to minimize the impact of their withdrawals. The Marshall Tubular Wellfield (09G) and the Kennedy Wells (10G-13G) are in Subbasin 12050, a subbasin with an August NGD of 115.8%. Assabet Well #3 is in Subbasin 12069, a subbasin with an August NGD of 32.3%. Special Condition 10 of the Renewed and Amended Permit requires the District to minimize the impact of its withdrawals on groundwater depleted subbasins.

MassDEP and the District have each determined that there are only a few minimization options. At this time, the District has no access to a surface water source, and alternative sources of supply outside the Town of Acton are not feasible. Public water systems directly abutting Acton have sources in Ground Water Category (GWC) 4 and 5 and/or would change their own GWC by supplying water to the District and thus are not good options at this time.

The District has taken action that may help minimize the impact of its withdrawals on groundwater depleted basins. In 2009, the District added Assabet Well #3 as a permitted source. Assabet Well #3 along with Assabet Well #2, Assabet Well #2A, and Assabet Well #1A are located in Subbasin 12069, Although groundwater depleted, Subbasin 12069 has the largest drainage area of any of the subbasins in which the District's sources are located. In its OTC Response, the District recognized that it is possible that increased use of the Assabet Wells including Assabet Well #3 which commenced operation on February 2, 2023 may be environmentally beneficial. The Department has determined that the District should further evaluate this possibility.

In its permit amendment, the District also seeks to add two new sources: Bedrock Well D and Bedrock Well E. These sources are located in Subbasin 12059, a subbasin that is slightly surcharged. It may be that use of these news wells may also reduce the stress on groundwater depleted subbasins. The Department has determined that the District should further evaluate this possibility both with and without increased use of the District's other sources in non-groundwater depleted subbasins, (Subbasin 12058 and Subbasin 12059).

Special Condition 10 of the Renewed and Amended Permit requires the District to develop and implement a plan and schedule to minimize the impact of its sources located in subbasin 12050, the Marshall Tubular Wellfield and the Kennedy Wells (the Minimization Plan). In preparing the Minimization Plan, the District shall evaluate the increased use of the Assabet Wells including Assabet Well #3, the new Bedrock Wells, and the District's other sources in Subbasin 12058 and 12059.

Special Condition 10 also provides that while the Renewed and Amended Permit is in effect, the District shall continue to implement the following conservation measures that go beyond the standard measures: increasing block rates, seasonal rates, evaluation of the rate structure every two years, annual M36 water audits, a rebate program for Water Sense labeled toilets, flushometers, faucets and shower heads, and high efficiency washing machines, and enforcement of the District's regulations requiring that automatic lawn watering systems have timers and moisture sensing devices.⁸

Special Condition 11, Mitigation.

The Water Management Regulations revised and promulgated in November 2014 require WMA permits to address mitigation of withdrawals above the baseline volumes. Water Management Act Permittees whose total authorized volume exceeds their baseline volume are required to develop and implement a plan to mitigate the impact of their withdrawals above the baseline volume.

The Water Management Regulations, 310 CMR 36.03, define baseline to mean the volume of water withdrawn during calendar year 2005 plus 5%, or the average annual volume withdrawn from 2003 through 2005 plus 5%, whichever is greater provided that:

1. baseline cannot be less than a permittee's registered volume;
2. baseline cannot be greater than the permittee's authorized volume for 2005; and
3. if, during the period from 2003 to 2005, the permittee's withdrawals from the water source were interrupted due to contamination of the source or construction of a treatment plant, the Department will use best available data to establish a baseline volume from the water source.

The District's baseline annual average daily volume is its 2005 withdrawal volume plus a buffer of 5% or 1.79 MGD. Permittees whose authorized volumes are above baseline must prepare a

⁸ In issuing the Renewed and Amended Permit, MassDEP understands that the District has acted to limit the impact of its withdrawals on groundwater depleted subbasins in the Concord River Basin by requesting that its permitted annual average daily withdrawal volume remain at 0.38 MGD and that its total authorized volume remain at 1.94 MGD instead of the higher volumes (up to 2.21 MGD) envisioned by the DCR 65/10 WNF. See Table 1. MassDEP also recognizes that the District has been able to make this request, because it has maintained its UAW and RGPCD at levels below that required by the performance standards.

mitigation plan. As stated earlier, the District's total authorized annual average daily withdrawal volume is 1.94 MGD, 0.15 MGD above baseline. Special Condition 11 requires the District to develop and implement a plan to mitigate this volume adjusted by the volume of wastewater returned to the Concord River Basin or 0.023 MGD (23,000 gallons per day). See Table 4.

Table 4: Mitigation Volume Calculation	
Permitted Amount Above Baseline = 0.15 MGD	
Permitted Amount Above Baseline = 1.94 MGD - 1.79 MGD = 0.15 MGD	
Adjustment for Wastewater Returned to the Groundwater = 0.1275 MGD	
100% of increased withdrawals are delivered to areas where the wastewater is returned to the ground.	
0.15 MGD x 1.00 (100%) = 0.15 MGD	
85% of the water delivered is returned to the ground.	
0.15 MGD x 0.85 (85%) = 0.1275 MGD	
Amount to be Mitigated after Adjustment for Wastewater Returned to Groundwater = 0.023 MGD	
Permitted Amount above Baseline 0.15 MGD - Adjustment for Wastewater Returned to the groundwater 0.1275 MGD = 0.023 MGD (23,000 gallons per day)	

The Water Management Regulations set out the requirements for a mitigation plan. The Water Management Regulations, 310 CMR 36.22(6)(a), require that **direct mitigation options** be evaluated before indirect mitigation activities. Direct mitigation activities include surface water releases, sewer system inflow/infiltration (I/I) improvement, stormwater recharge, and the retirement of existing allocation volumes.

The District has relied on direct mitigation in the form of the retirement of an existing allocation volume. Assabet Sand and Gravel (A, S, & G) held a Water Management Act Registration #2-14-002.05 to withdraw 0.17 MGD from the Concord River Basin. The District has submitted documentation to the Department that it has purchased the parcel of land formerly owned by A, S, & G located at 16 Knox Trail, in Acton, the land where the withdrawal points listed in the Registration are located. As a result of this purchase, the District retired A, S, & G's Registration. The District has requested that 0.023 MGD of the volume retired be applied to fulfill its mitigation requirement. The Department noted that A. S. & G averaged 0.17 MGD in withdrawals during the baseline period. Special Condition 11 of the Renewed and Amended Permit grants this request.

Coldwater Fishery Resources (CFRs)

Permittees with withdrawals that impact streamflow at a CFR (identified on basin maps) must evaluate reducing impacts to CFRs through feasible optimization. The District's Concord River sources do not appear to impact any streams identified as a CFR at this time. The District's Renewed and Amended Permit does not require a Coldwater Fishery Desktop Optimization evaluation.



Department of Environmental Protection

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Maura T. Healey
Governor

Kimberly Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

WATER WITHDRAWAL PERMIT MGL c 21G

This permit is issued pursuant to the Massachusetts Water Management Act for the sole purpose of authorizing the withdrawal of a volume of water as stated below and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P4-2-14-002.01

RIVER BASIN: Concord

PERMITTEE: The Water Supply District of Acton
P.O. Box 953
693 Massachusetts Avenue
Acton, MA 01720

EFFECTIVE DATE: May 3, 2024

PERMIT EXPIRATION DATE: December 6, 2032

NUMBER OF WITHDRAWAL POINTS:

Groundwater: 13

USE: Public Water Supply

DAYS OF OPERATION: 365

SOURCES

Table 1: Withdrawal Point Identification

Source Name	PWS Source ID Code
Marshall Wellfield	2002000-09G
Kennedy Wells	2002000-10G-13G
Conant II Wells	2002000-14G-18G
Assabet Well #3	2002000-27G
Bedrock Well D	2002000-28G
Bedrock Well E	2002000-29G

SPECIAL PERMIT CONDITIONS

Special Condition 1: Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Water Supply District of Acton (the District) to withdraw water from the Concord River Basin at the rate described below in Table 2. This permitted volume is in addition to the 1.56 MGD that the District is authorized to withdraw from its registered sources in the Concord River Basin under WMA Registration #214002.03. The permitted volume is expressed both as an annual average daily withdrawal rate, MGD, and as a total annual withdrawal volume, million gallons per year (MGY), for each permit period over the term of this permit.

Table 2: Concord River Basin Authorized Withdrawal Rates				
Permit Periods	Total Raw Water Withdrawal Volumes			
	Permit		Registration + Permit	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
5/3/2024 to 12/6/2027	0.38	138.70	$1.56 + 0.38 = 1.94$	708.10
12/7/2027 to 12/6/2032	0.38	138.70	$1.56 + 0.38 = 1.94$	708.10

Special Condition 2: Maximum Authorized Daily Withdrawals from Each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below in Table 3 without specific advance written approval from MassDEP. The maximum approved withdrawal rate is the approved rate of each source.

Table 3: Maximum Authorized Daily Withdrawal Rate

Well Name	PWS Source Code ID	Maximum Approved Withdrawal Rate Million Gallons Per Day (MGD)
Marshall Wellfield	2002000-09G	0.30 MGD
Kennedy Wells	2022000-10G-13G	0.54 MGD
Conant II Wells	2022000-14G-18G	0.216 MGD
Assabet Well #3	2002000-27G	0.45 MGD
Bedrock Well D	2002000-28G	0.26MGD*
Bedrock Well E	2002000-29G	0.16MGD*

***The maximum combined rate for Bedrock Well D and Bedrock Well E is 0.26 MGD**

Special Condition 3: Zone II Delineations

MassDEP records indicate that all the District's permitted groundwater sources including Bedrock Well D and Bedrock Well E have approved Zone II delineations.

Special Condition 4: Groundwater Protection

Until the Zone IIs of all the District's sources are fully protected, the District shall continue to exercise Best Efforts to encourage each municipality in which a portion of the Zone II of a District source is located to enact groundwater protection measures in accordance with 310 CMR 22.21(2).

Special Condition 5: Performance Standard for Residential Gallons Per Capita Day Water Use

The District's performance standard for residential gallons per capita day (RGPCD) is 65 gallons. The District is required to report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this performance standard in its ASR. The District shall report its ASR and the calculations to derive that figure as part of its ASR including without limitation the source of the data used to establish the service population and the year in which the data was developed. See Appendix A for additional information on the requirements if the performance standard for RGPCD is not met.

Special Condition 6: Performance Standard for Unaccounted for Water

The District's Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for two of the most recent three years throughout the permit period. If the District does not meet this standard, it shall be in compliance with the Functional Equivalence Requirements based on the AWWA IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices as outlined in Appendix B.

The District is required to report its UAW in its ASR so as to document compliance with this performance standard. The District's ASR shall include the calculation to derive that figure including without limitation the source of data used, the methodology for calculating UAW and any assumptions used in making the calculation.

Nothing in this permit shall prevent a Permittee who meets the 10% performance standard from developing and implementing a water loss control program following the AWWA M36 Water Audit and Loss Control Program. Permittees implementing a water loss control program based on AWWA M36 annual water audits and guidance shall continue to report UAW annually as required in the ASRs for public water suppliers.

Special Condition 7: Seasonal Limits on Nonessential Outdoor Water Use

The District shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4 below. The District shall be responsible for tracking steamflow gages and drought advisories and recording and reporting when restrictions are implemented if triggered restrictions are implemented. See *Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information*. The District shall also document compliance with the seasonal limits on nonessential outdoor water use annually in its ASR and indicate whether it anticipates implementing calendar triggered restrictions or USGS monitoring well triggered restrictions during the next year.

Restricted Nonessential Outdoor Water Uses

Nonessential outdoor water uses that are subject to mandatory restrictions include:

- irrigation of lawns via sprinklers or automatic irrigation systems;
- filling swimming pools;
- washing of vehicles, except in a commercial car wash or as necessary for operator safety; and
- washing exterior building surfaces, parking lots, driveways, or sidewalks, except as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement.

The following uses may be allowed, before 9 am and after 5 pm, when mandatory restrictions are in place:

- irrigation to establish a new lawn and new plantings during the months of May and September;
- irrigation of public parks and recreational fields by means of automatic sprinklers outside the hours of 9 am to 5 pm;
- irrigation of gardens, flowers, and ornamental plants by means of a hand-held hose or drip irrigation systems; and
- irrigation of lawns by means of a hand-held hose.

Water uses NOT subject to mandatory restrictions are those required:

- for health or safety reasons;
- by regulation;
- for the production of food and fiber;
- for the maintenance of livestock; or
- to meet the core functions of a business (for example, irrigation by golf courses as necessary to maintain tees, greens, and limited fairway watering, or irrigation by plant nurseries as necessary to maintain stock).

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

The District shall notify its customers of the restrictions, including a detailed description of the restrictions and penalties for violating the restrictions. Notice that restrictions have been put in place shall be filed each year with the Department within 14 days of the restriction's effective

date. Filing shall be in writing on the form “Notification of Water Use Restrictions” available on the MassDEP website.

TABLE 4: Restrictions for Permittees meeting the 65 RGPCD Standard for the preceding year RGPCD \leq 65 as reported in the ASR and accepted by MassDEP
<u>Calendar triggered restrictions</u> May 1 through September 30 Nonessential outdoor water use is restricted to: a) two (2) days per week before 9 am and after 5 pm; and b) one (1) day per week before 9 am and after 5 pm when USGS stream gage 0197300 –Nashoba Brook near Acton, MA falls below 7-day the low-flow statistic 0.57 cfs for three (3) consecutive days. Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at the gage meets or exceeds 0.57 cfs for seven (7) consecutive days.
<u>Streamflow triggered restrictions</u> Nonessential outdoor water use is restricted to: a) two (2) days per week before 9 am and after 5 pm when USGS stream gage 0197300–Nashoba Brook near Acton, MA falls below: • May 1 – June 30: 10 cfs for three (3) consecutive days • July 1 – September 30: 3 cfs for three (3) consecutive days b) one (1) day per week before 9 am and after 5 pm when USGS stream gage 0197300 –Nashoba Brook near Acton, MA falls below the 7-day low-flow statistic 0.57 cfs for three (3) consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
Restrictions for Permittees NOT meeting the 65 RGPCD standard for the preceding year RGPCD $>$ 65 as reported in the ASR and accepted by MassDEP
<u>Calendar triggered restrictions</u> May 1 through September 30 Nonessential outdoor water use is restricted to one (1) day per week before 9 am and after 5 pm.
<u>Streamflow triggered restrictions</u> Nonessential outdoor water use is restricted to one (1) day per week before 9 am and after 5 pm when USGS stream gage 0197300–Nashoba Brook near Acton, MA falls below: • May 1 – June 30: 10 cfs for three (3) consecutive days • July 1 – September 30: 3 cfs for three (3) consecutive days Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

The District shall update as necessary its Water Restriction Regulations to include the restrictions on seasonal outdoor water use required by Special Condition 7 and to align the Regulations with the Model Bylaw and submit a copy of the Regulations to MassDEP as soon as possible and no later than May 1, 2024. Beginning May 1, 2024, or the date that the District

updates its Water Restriction Regulations to include the restrictions required by Special Condition 7, whichever first occurs, the District shall commence implementation of the seasonal restrictions on outdoor water use required by Special Condition 7.

Special Condition 8: Requirement to Report Raw and Finished Water Volumes

The District shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system. Monthly raw water volumes for individual withdrawal points shall be reported annually in the ASR.

Special Condition 9: Water Conservation Requirements

At a minimum, the District shall implement the following conservation measures in Table 5. Compliance with the water conservation requirements shall be reported to the Department upon request, unless otherwise noted below.

Table 5: Minimum Water Conservation Requirements
Leak Detection
1. At a minimum, conduct a full leak detection survey every three years.
2. Conduct leak detection of the entire distribution system within one year whenever the percentage of UAW increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, submit to the Department a report detailing the survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
3. Conduct field surveys for leaks and repair programs in accordance with the <u>AWWA Manual 36</u> .
4. The District shall have repair reports available for inspection by the Department. The District shall establish a schedule for repairing leaks that is at least as stringent as the following: <ul style="list-style-type: none">○ Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.○ Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.○ Leaks of less than 3 gallons per minute shall be repaired in a timely manner, but in no event more than 6 months from detection, except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway. <p>Leaks shall be repaired in accordance with the District's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. The District shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.</p>

Table 5: Minimum Water Conservation Requirements
Metering
1. Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. The District reports its system is 100% metered. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in <u>AWWA Manual M6 – Water Meters</u> .
3. The District shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by its customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections. The plan shall continue to include placement of sufficient funds in the annual budget to calibrate, repair, or replace meters as necessary.
Pricing
1. The District shall maintain a water pricing structure that includes the full cost of operating the water supply system. The District shall evaluate rates at a minimum every two years and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2. The District shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed by M.G.L. Chapter 40 Section 39L.
Residential and Public Sector Conservation
1. The District shall exercise best efforts to have the Town of Acton meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.
2. Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3. The District shall exercise best efforts to have the Town of Acton ensure water conserving fixtures and landscaping practices are incorporated into the design of new municipal capital projects.
Industrial and Commercial Water Conservation
The District shall exercise best efforts to have the Town of Acton ensure water conservation practices are considered in all development proposals, particularly low flow devices and water-wise landscaping practices.

Table 5: Minimum Water Conservation Requirements

Public Education and Outreach

1. The District shall implement water conservation and education efforts designed to educate the District's water customers on ways to conserve water. Without limitation, the District's plan may include the following actions:
 - Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings;
 - Public space advertising/media stories on successes (and failures);
 - Conservation information centers perhaps run jointly with electric or gas company;
 - Speakers for community organizations;
 - Public service announcements; radio/T.V./audio-visual presentations;
 - Joint advertising with hardware stores to promote conservation devices;
 - Use of civic and professional organization resources;
 - Special events such as Conservation Fairs;
 - Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and
 - Provide multilingual materials as needed.
2. Upon request of the Department, the District shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

Special Condition 10: Minimization of Impacts to Groundwater Depleted Subbasins

The District shall take the following actions to minimize the impact of its withdrawals on groundwater depleted subbasins in the Concord River Basin:

Within 90 days of the startup of Bedrock Well D and Bedrock Well E, the District shall submit to MassDEP for its review and approval a plan and schedule for minimizing the impact of withdrawals from the Marshall Tubular Wellfield and the Kennedy Wells (the Minimization Plan). In developing the Minimization Plan, the District shall evaluate whether increased use of the Assabet Wells including Assabet Well #3 would be environmentally beneficial. The District shall also evaluate whether use of Bedrock Well D and Bedrock Well E with and without increased use of the District's sources in Subbasin 12058 and Subbasin 12059 would also reduce the stress on the District's groundwater depleted basins. Thereafter, the District shall implement the Minimization Plan as approved by MassDEP.

While the Renewed and Amended Permit is in effect, the District shall continue to implement the following conservation measures that go beyond the standard measures:

- increasing block rates,
- seasonal rates,

- evaluation of the rate structure every two years,
- annual M36 water audits,
- a rebate program for Water Sense labeled toilets, flushometers, faucets and shower heads, and high efficiency washing machines, and
- enforcement of the District's regulations requiring that automatic lawn watering systems have timers and moisture sensing devices.

Special Condition 11: Mitigation

The District is required to mitigate 23,000 gallons per day based on their increase in withdrawals over their 1.79 MGD Baseline Withdrawal Volume and the wastewater returns associated with that use. Assabet Sand and Gravel (A, S, & G) held a Water Management Act Registration Statement (#214002.05) to withdraw 0.17 MGD from the Concord River Basin. The District has submitted documentation to the Department that it has purchased the parcel of land formerly owned by A, S, & G, located at 10 Knox Trail, in Acton, the land where the withdrawal listed in the Registration is located. As a result of this purchase, the A, S, & G's Registration has been retired. The District has requested that 0.023 MGD of the volume retired be applied to fulfill its mitigation requirement and the Department hereby grants this request. The District has completely fulfilled its mitigation requirement. No further work is required at this time.

GENERAL PERMIT CONDITIONS (applicable to all permittees)

No withdrawal in excess of 100,000 gallons per day over the registered volume (if any) shall be made following the expiration of this permit, unless before that date the Department has received a renewal permit application pursuant to 310 CMR 36.00.

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to MGL c 21G ss 15-17, MGL c 111 ss 160, or any other enabling authority.

5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The permittee shall complete and submit annually, on a form provided by the Department, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by the Department by the date specified on the form each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection
Water Management Act Program
100 Cambridge Street 9th Floor
Boston, MA 02114

7. **Duty to Maintain Records** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
8. **Metering** If the withdrawal point included within the permit is not yet metered, it shall be metered within one year of the date of issuance of the permit. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

APPEAL RIGHTS AND TIME LIMITS

Any person aggrieved by this decision may request an adjudicatory hearing by timely filing a Notice of Claim for an Adjudicatory Appeal (“Notice of Claim”) in accordance with 310 CMR 36.37 and 310 CMR 1.00 within twenty-one (21) days of receipt of this Permit. The Notice of Claim shall state specifically, clearly, and concisely the facts that are grounds for the appeal, the relief sought, and any additional information required by applicable law or regulation. A copy of this Permit shall be included with a Notice of Claim. No request for an appeal of this permit shall be validly filed unless a copy of the request is sent at the same time by certified mail, or delivered by hand, to the local water resources management official in the community in which the withdrawal point is located; and for any person appealing this decision, who is not the permit applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

The Notice of Claim and supporting documentation must be sent to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
100 Cambridge Street, 9th Floor

Boston, MA 02114

In addition, the Department's fee transmittal form, together with a valid check made payable to the Commonwealth of Massachusetts in the amount of \$100 for the appeal filing fee, if required, must be mailed to:

Commonwealth of Massachusetts Lock Box
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The Notice of Claim may be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city, town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.



Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

May 3, 2024

Date

Appendix A – Functional Equivalence with the 65 Residential Gallons Per Capita Day Performance Standard

MassDEP will consider public water supply permittees who cannot meet the 65 RGPCD performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures “best practices” for controlling residential water use as described below.

If the permittee fails to document compliance with the RGPCD performance standard in its Annual Statistical Report (ASR), or in any ASR thereafter, then the permittee must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall include, at a minimum:

1. A description of the actions taken during the prior calendar year to meet the performance standard;
2. An analysis of the cause of the failure to meet the performance standard;
3. A description of the actions that will be taken to meet the performance standard which must include, at a minimum, at least one of the following:
 - a) a program that provides water saving devices such as faucet aerators and low flow shower heads at cost;
 - b) a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets), or
 - c) the adoption and enforcement of an ordinance, by-law or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems;and may include, without limitation, the following:
 - d) the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;
 - e) a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
 - f) the adoption and enforcement of an ordinance, by-law or regulation to require that all new construction include water saving devices and low water use appliances;
 - g) the adoption and enforcement of an ordinance, by-law or regulation to require that all new construction minimize lawn area and/or irrigated lawn area, maximize the use of drought resistant landscaping, and maximize the use of topsoil with a high water- retention rate;
 - h) the implementation of a program to encourage the use of cisterns or rain barrels for outside watering;
 - i) the implementation of monthly or quarterly billing.
4. A schedule for implementation; and
5. An analysis of how the planned actions will address the specific circumstances that resulted in the failure to meet the performance standard.

If the permittee is already implementing one or more of these programs, it must include in its RGPCD plan the continued implementation of such program(s), as well as implementation of at least one additional program. All programs must include a public information component designed to inform customers of the program and to encourage participation in the program.

RGPCD plans may be amended to revise the actions that will be taken to meet the performance standard. Amended RGPCD plans must include the information set forth above.

If a RGPCD plan is required, the permittee must:

1. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD plan annually at the time it files its ASR, and
2. continue to implement the RGPCD plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

Appendix B – Functional Equivalence: 10% Unaccounted for Water Performance Standard

MassDEP will consider PWS permittees who cannot meet the 10% UAW performance standard to be functionally equivalent, and in compliance with their permit, if they have an on-going program in place that ensures “best practices” for controlling water loss. The water loss control program will be based on annual water audits and guidance as described in the AWWA/IWA *Manual of Water Supply Practices – M36, Water Audits and Loss Control Programs* (AWWA M36).

If the permittee fails to document compliance with the Unaccounted for Water performance standard (UAW of 10% or less for 2 of the 3 most recent years throughout the permit period), then the permittee shall develop and implement a water loss control program following the AWWA M36 *Water Audits and Loss Control Programs* within 5 full calendar years of failing to meet the standard as follows:

- 1. Conduct an annual “top down” water audit, calculate the data validity level/score using AWWA Water Loss Control Committee’s Free Water Audit Software, and submit the AWWA WLCC Free Water Audit Software: Reporting Worksheet and data validity score annually with its Annual Statistical Report (ASR).**
 - If a PWS’s data validity level/score is less than Level III (51-70), steps recommended through the audit(s) shall be taken to improve the reliability of the data prior to developing a long-term program to reduce real and apparent water losses.
 - Data with a validity score of 50 or less are considered too weak to be used to develop a component analysis or for infrastructure planning and maintenance.
 - Developing data with an acceptably strong validity score can be a multi-year process.
- 2. When the data validity score meets the Level III (51-70) requirement, conduct a component analysis to identify causes of real and apparent water loss and develop a program to control losses based on the results of the component analysis.**
- 3. Within 5 full calendar years of failing to meet the standard, submit the component analysis and water loss control program with a proposed implementation schedule to the Department.**
- 4. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.**
- 5. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.**

A PWS permittee may choose to discontinue the water loss program implementation if UAW, as reported on the ASR and approved by the Department, is below 10% for four consecutive years, and the water audit data validity scores are at least Level III (51-70) for the same four years.

NOTE FOR SMALL SYSTEMS: For small systems with less than 3,000 service connections or a service connection density of less than 16 connections per mile of pipeline, the Unavoidable Annual Real Loss (UARL) calculation and the Infrastructure Leak Index (ILI) developed as the final steps of the top down water audit may not result in valid performance indicators, and may not be comparable to the UARL and ILI calculations for larger systems.

However, these small systems can benefit from developing reliable data and conducting an annual top down water audit. Small systems can rely on the real losses (gallons per mile of main per day) performance indicator developed in the water audit as a measure of real water loss when developing a water loss control program. The M36 Manual discusses the audit process for small systems, and includes a chapter to guide small systems in understanding the results of their audits and in developing a water loss control program (*Manual of Water Supply Practices – M36, Fourth Edition, Chapter 9: Considerations for Small Systems*, pp. 293-305).

MassDEP UAW Water Loss Control Measures: If the permittee is required to develop a Functional Equivalence Plan for the 10% Unaccounted for Water Performance Standard, and the permittee does not have a MassDEP-approved Water Loss Control Program in place within 5 full calendar years of failing to meet the standard, the permittee will be required to implement the MassDEP UAW Water Loss Control Measures outlined below:

- An annual water audit and leak detection survey, as described in the AWWA M36 Manual, of the entire system.
 - Within one year, repair 75% (by water volume) of all leaks detected in the survey that are under the control of the public water system;
 - Thereafter, repair leaks as necessary to reduce permittee's UAW to 10% or the minimum level possible.
- Meter inspection and, as appropriate, repair, replace and calibrate water meters:
 - Large Meters (2" or greater) – within one year
 - Medium Meters (1" or greater and less than 2") – within 2 years
 - Small Meters (less than 1") - within three years
 - Thereafter, calibrate and or replace all meters according to type and specification.
- Bill at least quarterly within three years.
- Water pricing structure sufficient to pay the full cost of operating the system.

Hardship - A permittee may present an analysis of the cost-effectiveness of implementing certain conservation measures included in the MassDEP UAW Water Loss Control Measures and offer alternative measures. Any analysis must explicitly consider environmental impacts and must produce equal or greater environmental benefits.

A permittee's hardship analysis shall:

- Document economic hardship and present an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship;
- Present reasons why specific measures are not cost-effective because the cost would exceed the costs of alternative methods of achieving the appropriate standard; and
- Propose specific conservation measures that would result in equal or greater system-wide water savings or equal or greater environmental benefits than the conservation measures included in the MassDEP UAW Water Loss Control Measures.

MassDEP will review a permittee's detailed, written analysis to determine whether unique circumstances make specific Best Management Practices (BMPs) less cost-effective than alternatives, or infeasible for the permittee.