



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

Department of Environmental Protection

Address: 100 Cambridge Street, Suite 900, Boston MA 02114 | Phone: 617-292-5500

Maura T. Healey
Governor

Kim Driscoll
Lieutenant Governor

Rebecca Tepper
Secretary

Bonnie Heiple
Commissioner

DRAFT

December 23, 2025

Loretta Beaudry, Water Commissioner
Warren Water District
250 Comins Pond Road
Warren, MA 01083

City/Town: Warren
Program: Water Management Act (WMA)
WMA Permit #: 9P2-1-08-311.02
Action: **Draft** Renewed Permit

Dear Ms. Beaudry:

Please find the following attached:

- Findings of Fact in Support of the Water Management Act Permit Decision; and,
- Water Management Act Permit #9P2-1-08-311.02 for the Warren Water District in the Chicopee River Basin.

Consistent with 310 CMR 36.27(6) - (8) of the revised Water Management Act Regulations, MassDEP will now publish notice in the Environmental Monitor that a Permit is available for review and comment for 30 days following the December 23, 2025, publication in the Environmental Monitor. Notice of the public comment period will also be sent to all registrants, permittees and those having non-consumptive use statements within the Chicopee River Basin. The Department expects to issue the final permit within 30 days of the close of the public comment period.

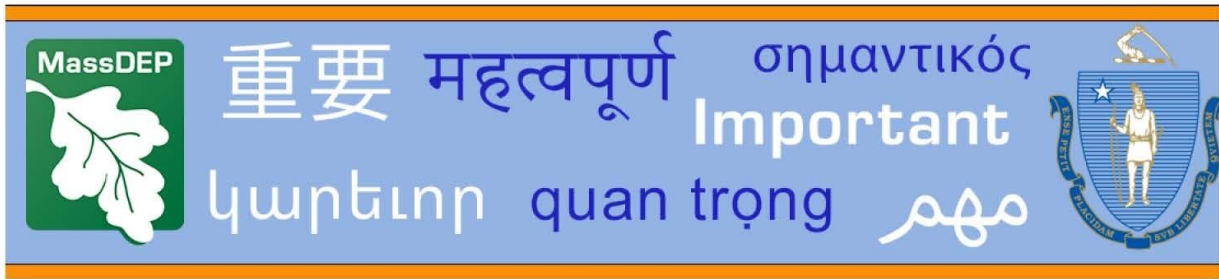
The signature on this cover letter indicates formal issuance of the attached documents. If you have any questions regarding this information, please contact Brittany Segill at brittany.segill@mass.gov or (617) 960-6598, or me, Duane LeVangie, at duane.levangie@mass.gov or (617) 780-1962.

Sincerely,

Duane LeVangie, Chief
Water Management Program
Bureau of Water Resources

Ecc: Jennifer Pederson, MWWA
Lydia Olson, Massachusetts Rivers Alliance
Anne Carroll, Department of Conservation and Recreation-Office of Water Resources
Soloe Dennis, MassDEP DRD WERO

Sharepoint:\DWPWMA\Permit Renewals\Chicopee\Warren-1311000-DRAFT WMA Permit
12.23.2025



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

Português Portuguese

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繁體中文 Chinese Traditional

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。

简体中文 Chinese Simplified

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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
ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

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.

Français French

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.

Deutsch German

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

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

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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**DRAFT Finding of Fact in Support of
Water Management Permit #9P2-1-08-311.02
Warren Water District**

The Massachusetts Department of Environmental Protection (the Department or MassDEP) has completed its review of Warren Water District's ("Warren") Water Management Act (WMA) permit renewal application filed on May 26, 2016. The Department hereby proposes to issue Water Management Permit #9P2-1-08-311.02 (the "Permit") in accordance with the Water Management Act (M.G.L. c. 21G) and the regulations promulgated thereunder at 310 CMR 36.00. The Department makes the following Findings of Fact in support of the attached Permit and includes herewith its reasons for issuing the Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11, and 310 CMR 36.00. The Permit is being issued since such action is necessary for the promotion of the purposes of M.G.L. c. 21G. The Department may amend, suspend or terminate the Permit, after notice and hearing, in accordance with the provisions of 310 CMR 36.29(1).

Warren's Water Withdrawal History

Original Permit: Warren holds a Water Management Act Registration (#1-08-311.02) for an average annual daily withdrawal volume of 0.20 million gallons per day (MGD) from one ground water source, Tubular Wellfield (01G), in the Chicopee River Basin. On October 10, 1999, MassDEP issued Water Management Act Permit #9P2-1-08-311.02 to Warren authorizing the use of two additional ground water sources, Gravel Pack Well #1 (02G) and Gravel Pack Well #2 (03G). This permit, which was later reviewed in 2002 and 2010, did not authorize an increase in the withdrawal volume (0.20 MGD) set forth in their Registration Statement.

Permit Extension Act: The original expiration date for all Water Management permits in the Chicopee River Basin was May 31, 2013. In 2010, this date was extended for two years, to May 31, 2015, by Section 173 of Chapter 240 of the Acts of 2010, the Permit Extension Act. In 2012, the Permit Extension Act was amended by Chapter 238 of the Acts of 2012 and Chicopee River Basin permits were extended an additional two years to May 31, 2017.

On January 4, 2016, MassDEP informed the applicant that MassDEP would need additional time before making a determination on permit renewal applications in order to ensure that all permit renewal applicants fully understood the new Water Management Regulations (discussed below), and to give proper consideration to all permit renewal applications. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), the applicant's Permit remains in full force and effect until MassDEP issues a final decision on the 2016 permit renewal permit application.

Permit Renewal Application: On May 26, 2016, Warren applied to MassDEP for a permit renewal in the Chicopee River Basin. On July 8, 2024, MassDEP issued a Permit Renewal Order to Complete (OTC) outlining specific information that was required to renew the applicant's permit. The applicant responded on October 3, 2024.

The expiration date for this permit going forward in the Chicopee River Basin will be May 31, 2033, in order to restore the staggered permitting schedule, set forth in the Water Management Regulations.

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

The WMA 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;
- 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 Chicopee 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 fish resources;
 - minimization of withdrawal impacts in areas stressed by groundwater use; and
 - mitigation of the impacts of increasing withdrawals

Safe Yield in the Chicopee River Basin

This 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 Chicopee River Basin is 353.1 million gallons per day (MGD), and total registered and permitted withdrawals are 203.72 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Chicopee River Basin, will be within the safe yield and may be further conditioned as outlined in the regulations. As noted above this permit does not allocate any additional withdrawal volumes, so it will not impact the safe yield of the Chicopee River Basin.

Findings of Fact for Permit Conditions in Warren's 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 Volume, specifies the authorized annual average withdrawal volume for the life of this permit. Warren is authorized by WMA registration #1-08-311.02 to withdraw 0.20 million gallons per day (MGD) from its Tubular Wellfield (01G). Warren's existing WMA Permit #9P2-1-08-311.02 authorizes the use of new wells, Well #1 (02G) and Well #2 (03G), but authorizes no additional withdrawal volume. As shown in

Table 1, the applicant's annual average daily volume in recent years has been in compliance with its total authorized volume.

Table 1: Warren's System-Wide Water Withdrawals 2024-2020

Withdrawal Basin	Registered Volume (MGD)	Permitted Volume (MGD)	Total Allocation (MGD)	Actual Withdrawals (MGD)				
				2024	2023	2022	2021	2020
Chicopee	0.20	0.0	0.20	0.21	0.14	0.12	0.17	0.18

Special Condition 2, Maximum Authorized Daily Withdrawal From Withdrawal Point, specifies the authorized maximum daily rate based on the approved Zone II rate for Wells #1 and #2. Withdrawals from individual withdrawal points are not to exceed the approved maximum daily rates without specific advanced approval from the Department.

Special Condition 3, Zone II Delineations, requires MassDEP-approved Zone II delineations for all permitted public water supplier (PWS) groundwater sources. The permittee has approved Zone II delineations for all their permitted sources.

Special Condition 4, Wellhead Protection, requires PWS permittees to implement appropriate wellhead protection zoning and non-zoning controls in accordance with Wellhead Protection Regulations at 310 CMR 22.21(2). MassDEP records show that Warren has met the Wellhead Protection requirements.

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use (RGPCD), specifies that the RGPCD Performance Standard for all PWSs is 65. Permittees that cannot meet this Performance Standard within the timeframe in the permit must meet the Functional Equivalence Requirements outlined in Appendix A. As shown in Table 2, the applicant has consistently met this Performance Standard within recent years.

Table 2: Warren's Residential Gallons Per Capita Day Water Use

Year	2024	2023	2022	2021	2020
RGPCD	56	49	40	44	43

Special Condition 6, Performance Standard for Unaccounted for Water (UAW), specifies that the UAW percentage required for all PWSs is 10% for two out of every 3 years. Permittees that cannot meet this Performance Standard within the timeframe in the permit must meet the Functional Equivalence Requirements outlined in Special Condition 6 and Appendix B. As shown in Table 3, the applicant has met this Performance Standard the past two years.

Table 3: Warren's Unaccounted for Water %

Year	2024	2023	2022	2021	2020
UAW	29%	9%	8%	34%	17%

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use, requires restrictions on nonessential outdoor water use from May through September. The options outlined in this Special Condition are based on whether the permittee's reported RGPCD for the previous year was in compliance with the RGPCD Performance Standard (see Special Condition 5, Performance Standard for RGPCD).

In addition, nonessential outdoor water use for communities with wells in subbasins¹ that are more than 25% August net groundwater depleted (Aug NGD)² is limited to 1 or 2 days per week to minimize withdrawals from depleted subbasins. All Warren's wells are located in Subbasin 17023, which has an August NGD of 80%.

Each year, Warren may choose one of two options for implementing nonessential outdoor watering restrictions.

- **Calendar triggered restrictions** are in place from May 1st through September 30th. Many public water suppliers find this option easier to implement and enforce than the streamflow triggered approach.
- **Streamflow triggered restrictions** are 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 commence when streamflow falls below the trigger for three consecutive days. Once implemented, the restrictions remain in place until streamflow at the assigned USGS local stream gage meets or exceeds the trigger streamflow for seven consecutive days.

If the permittee selects the streamflow trigger approach, it has been assigned USGS stream #01176000 –Quaboag River at W. Brimfield, MA. The May-June streamflow trigger is 130 cubic feet per second (cfs), and the July-September streamflow trigger is 67 cfs. Should the reliability of flow measurement at this be so impaired as to question its accuracy, the applicant may request that MassDEP review and approve the transfer to another gage that will trigger restrictions. MassDEP reserves the right to require use of a different gage.

- **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 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 Quaboag River at W. Brimfield, MA gage is 30 cfs.

¹ 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). The Water Management Regulations, 310 CMR 36.03, define August net groundwater depletion (NGD) 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. A subbasin is groundwater, depleted if it has an August NGD of greater than 25%.

The applicant may choose to implement limits on nonessential outdoor water use that are stricter than those required by the permit.

Special Condition 8, Water Conservation Requirements, sets out the water conservation requirements that the Town shall meet. This renewed permit updates the water conservation requirements from Warren's 2010 permit to reflect the standards outlined in the Massachusetts Water Resources Commission's Water Conservation Standards as revised in July 2018 (<https://www.mass.gov/doc/massachusetts-water-conservation-standards-2/download>).

Special Condition 9, Minimization of Groundwater Withdrawal Impacts in Stressed Basins, requires permittees with groundwater sources in subbasins with August NGD of 25% or greater to minimize their withdrawal impacts on those subbasins to the greatest extent feasible through optimization of groundwater source use, surface water releases to improve streamflows, outdoor water use restrictions, and water conservation programs that go beyond standard Water Management permit requirements.

Warren's sources, the Tubular Wellfield, Well #1 and Well #2, are located in the Chicopee River Subbasin 17023, which has an August NGD of 80%. Warren has submitted a Minimization Plan as part of the application which has been incorporated into Special Condition 9 of this permit.

Special Condition 10, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the conditions in this permit is accurately reported.

Other Considerations

Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals was incorporated into the Water Management Regulations in November 2014. Permits authorizing withdrawals greater than the permittee's baseline withdrawal include mitigation activities commensurate with the impact of the increased withdrawals. A Permittee's Baseline withdrawal for requiring mitigation is 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:

- a) baseline cannot be less than a permittee's registered volume;
- b) baseline cannot be greater than the permittee's authorized volume for 2005; and
- c) 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, MassDEP will use best available data to establish a Baseline volume from the water source.

Warren's baseline is 0.20 MGD, based on the registered volume. Mitigation is not required at this time because the permit authorizes no withdrawals beyond the permittee's 0.20 MGD registered volume.

Cold Water Fish Resources (CFR) Protection was incorporated into the Water Management Regulations in November 2014. Water Management Act Permittees with withdrawals that may impact the streamflow of a CFR (identified on subbasin maps) are required to evaluate methods for reducing impacts on CFRs through feasible optimization. Warren's sources are in subbasin 17023

that at this time does not contain a CFR identified by the Department of Fish and Game, therefore no CFR protection is required.



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DRAFT WATER WITHDRAWAL PERMIT
#9P2-1-08-311.02
WARREN WATER DISTRICT

This renewal of Permit #9P2-1-08-311.02 is approved pursuant to the Massachusetts Water Management Act (WMA) 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.

PERMIT NUMBER: 9P2-1-08-311.02

RIVER BASIN: Chicopee

PERMITTEE: Warren Water District

EFFECTIVE DATE: TBD

EXPIRATION DATE: May 31, 2033

NUMBER OF WITHDRAWAL POINTS: 2

Groundwater: 2

Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATION(S):

Table 1: Withdrawal Point Identification

Source Name	Source Code	Location
Well #1	1311000-02G	Comins Pond, Warren
Well #2	1311000-03G	Comins Pond, Warren

SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Warren Water District (“Warren” or the “Permittee”) to withdraw water from the Chicopee River Basin at the rate described below in Table 2. This permit does not authorize any additional volumes beyond the 0.20 million gallons per day (73 million gallons per year) previously authorized to Warren under Water Management Act Registration #1-08-311.02 for withdrawals from the Chicopee River Basin. The permit instead authorizes the use of Well 1 (02G) and Well 2 (03G) to withdraw the registered volume in the Chicopee River Basin. The authorized withdrawal volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD) and as a total annual withdrawal volume (million gallons per year or MGY) for each permit period of the permit term.

The Department of Environmental Protection (MassDEP) will use the raw water withdrawal volume from all authorized withdrawal points to assess compliance with the registered and permitted withdrawal volumes.

Table 2: Maximum Authorized Withdrawal Volumes

Permit Periods	Total Water Withdrawal Volumes			
	Permit		Permit + Registration	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
TBD to 5/30/2028	0.0	0.0	0.20	73.0
5/31/2028 to 5/31/2033	0.0	0.0	0.20	73.0

2. Maximum Authorized Daily Withdrawals from Withdrawal Point

Withdrawals from the following sources are not to exceed the approved maximum daily rate listed in Table 3 without advance approval from the Department.

Table 3: Maximum Daily Withdrawal Rate

Source Name	PWS Source Code ID	Maximum Daily Rate (MGD)
Well #1	1311000-02G	0.576*
Well #2	1311000-03G	

**This is a combined rate for both wells*

3. Zone II Delineations

MassDEP records indicate that all of Warren’s sources have approved Zone II delineations.

4. Wellhead Protection

MassDEP records indicate that Warren has adopted land use controls and water supply protection measures meeting the requirements of the Wellhead Protection Regulations at 310 CMR 22.21(2).

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

For all public water suppliers (PWSs), the performance standard for RGPCD is 65. Permittees that cannot comply with the RGPCD Performance Standard are required to develop and implement a functional equivalence program as set forth in Appendix A: Functional Equivalence with the RGPCD Performance Standard. Warren shall report its RGPCD annually in its Annual Statistical Report (ASR).

6. Performance Standard for Unaccounted for Water (UAW)

For all public water suppliers (PWSs), the performance standard for UAW is 10% or less of overall water withdrawal for 2 of the most recent years 3 throughout the permit period. Permittees that cannot comply with the UAW Performance Standard are required to develop and implement the functional equivalence requirements based on the *AWWA/IWA Water Audits and Loss Control Programs, Manual of Water Supply Practices M36*, as outlined in Appendix B. Warren shall report its UAW annually in its Annual Statistical Report (ASR).

Nothing in the permit shall prevent a permittee who meets the 10% performance standard from demonstrating compliance with the UAW performance standard by developing and implementing a water loss control program following the *AWWA M36 Water Audits and Loss Control Programs*.

7. Seasonal Limits on Nonessential Outdoor Water Use

The Warren shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4 below. The Permittee shall be responsible for tracking streamflow gages and recording and reporting when restrictions are implemented (see Table 5). The Permittee 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.

To the extent feasible all summer outdoor water use should take place before 9 am and after 5 pm when evaporation and evapotranspiration rates are lower.

**Table 4: Warren’s Seasonal Limits on Nonessential Outdoor Water Use
May 1 to September 30**

For Permittees meeting the 65 RGPCD Standard for the preceding year RGPCD ≤ 65 as reported in the ASR and accepted by MassDEP	
Calendar Triggered Restrictions	<p>Nonessential outdoor water use is allowed:</p> <ul style="list-style-type: none"> 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 <p>when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA falls below the 7-day low-flow statistic 30 cfs for three (3) consecutive days.</p> <p>Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at the gage meets or exceeds 30 cfs for seven (7) consecutive days.</p>

Streamflow Triggered Restrictions	<p>Nonessential outdoor water use is restricted to:</p> <ul style="list-style-type: none"> a) two (2) day per week before 9 am and after 5 pm when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA falls below: <ul style="list-style-type: none"> • May 1 – June 30: 130 cfs for three (3) consecutive days • July 1 – September 30: 67 cfs for three (3) consecutive days b) one (1) day per week before 9 am and after 5 pm <ul style="list-style-type: none"> • when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA falls below the 7-day low-flow statistic 30 cfs for three (3) consecutive days. <p>Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.</p>
For Permittees NOT meeting the 65 RGPCD standard for the preceding year RGPCD > 65 as reported in the ASR and accepted by MassDEP	
Calendar Triggered Restrictions	<p>Nonessential outdoor water use is allowed:</p> <ul style="list-style-type: none"> a) one (1) days per week before 9 am and after 5 pm; and b) one (1) day per week before 9 am and after 5 pm <p>when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA falls below 30 cfs for three (3) consecutive days.</p> <p>Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at the gage meets or exceeds 30 cfs for seven (7) consecutive days</p>
Streamflow Triggered Restrictions	<p>Nonessential outdoor water use is restricted to:</p> <ul style="list-style-type: none"> a) one (1) day per week before 9 am and after 5 pm when USGS stream 01176000 – Quaboag River at W. Brimfield, MA falls below: <ul style="list-style-type: none"> • May 1 – June 30: 130 cfs for three (3) consecutive days • July 1 – September 30: 67 cfs for three (3) consecutive days b) one (1) day per week before 9 am and after 5 pm <ul style="list-style-type: none"> • when USGS stream gage 01176000 – Quaboag River at W. Brimfield, MA falls below the 7-day low-flow statistic 30 cfs for three (3) consecutive days. <p>Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.</p>

Table 5: Instructions for Accessing Streamflow Website Information

If the Permittee chooses Streamflow Triggered Restrictions, the Permittee shall be responsible for tracking streamflows and recording and reporting to MassDEP when restrictions are implemented.
Streamflow information is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts streamflows in real time, i.e., the most recent, usually quarterly hourly, reading made at each USGS stream gage.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the mean daily streamflow falls below the designated trigger. The mean daily flow is not calculated until after midnight each day when the USGS computes the hourly data into a mean daily streamflow. As a result, permittees must use the mean daily streamflow from the preceding day when tracking streamflows.

Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at <http://waterdata.usgs.gov/ma/nwis/current/?type=flow>.

- Scroll down to gage 01176000 – Quaboag River at W. Brimfield, MA.
- Click on the gage number.
- Click on Legacy real-time page.
- Scroll down to “Provisional Date Subject to Revision – Available data for this site” and click on the drop-down menu.
- Click on “Time-series: Daily data” and hit GO.
- Scroll down to the “Available Parameters” box. Within the box, be sure “00060 Discharge (Mean)” is checked, then, under “Output Format” click “Table” and hit GO.
- Scroll down to “Daily Mean Discharge, cubic feet per second” table and find the current date on the table.
- Compare the cubic feet per second (cfs) measurement shown on the table to the cfs shown under Streamflow Triggered Restrictions above.

The Permittee shall document compliance with the Seasonal Nonessential Outdoor Water Use Restrictions annually in its Annual Statistical Report (ASR) and indicate whether it anticipates implementing calendar triggered restrictions or streamflow triggered restrictions during the next year.

Restricted Nonessential Outdoor Water Uses:

Nonessential Outdoor Water Use means a use that is not required:

- a) for health or safety reasons, including public facilities used for cooling such as splash pads and swimming pools, and for washing of boats, engines, or marine equipment to prevent negative saltwater impacts or the transfer of invasive aquatic species;
- b) by permit, license, statute or regulation;
- c) for the production of food, including vegetable gardens, and fiber;
- d) for the maintenance of livestock;
- e) to meet the core functions (those functions essential to the commercial operations) of a business, including but not limited to:
 1. plant nurseries as necessary to maintain stock;
 2. golf courses as necessary to maintain greens and tees, and limited fairway watering per 310 CMR 36.07(2)(c)2.a. through c.;
 3. venues used for weddings or similar special events that limit watering to hand-held hose or drip irrigation as necessary to maintain gardens, flowers and ornamental plants;
 4. professional washing of exterior building surfaces, parking lots, driveways and/or sidewalks as necessary to apply surface treatments such as paint, preservatives, stucco, pavement, or cement in the course of construction, reconstruction or renovation work;
- f) for irrigation of public parks before 9:00 a.m. and after 5:00 p.m.,

- g) for irrigation of public and private recreation fields, including those operated by schools, colleges, universities and athletic associations, before 9:00 a.m. and after 5:00 p.m.,
- h) for irrigation of publicly funded shade trees and trees in the public right-of-way; or
- i) to establish a new lawn as necessary to stabilize soil in response to new construction or following the repair or replacement of a Title 5 system.

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

The Permittee shall notify its customers of the restrictions and the consequences of failing to adhere to the restrictions.

- For calendar-triggered restrictions, customers shall be notified by April 15th each year.
- For streamflow-triggered restrictions, when streamflow at the assigned USGS local stream gage falls below a streamflow trigger for three consecutive days, customers shall be notified as soon as possible, but within three days of implementing the restrictions.

Notice that restrictions have been put in place shall be filed each year with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP's website. Should the reliability of flow measurement at the Quaboag River gage be so impaired as to question its accuracy, the Permittee may request MassDEP's review and approval to transfer to another gage to trigger restrictions. MassDEP reserves the right to require use of a different gage.

Nothing in the permit shall prevent the Permittee from implementing water use restrictions that are more stringent than those set forth in this permit.

8. Water Conservation Requirements

At a minimum, Warren shall implement the following conservation measures forthwith. Compliance with the water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted in Table 6.

Table 6: Minimum Water Conservation Requirements

Leak Detection
1. At a minimum, conduct a full leak detection survey every three years. The first full leak detection shall be completed no later than 3 years from the date of the last documented leak detection survey.
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 Permittee shall have repair reports available for inspection by the Department. The Permittee shall establish a schedule for repairing leaks that is at least as stringent as the following:

- 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.

Leaks shall be repaired in accordance with the Permittee's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. The Permittee shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.

Metering

1. Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2. The Permittee shall maintain its system as 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 AWWA Manual M6 – Water Meters.
3. The Permittee 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 Permittee shall maintain a water pricing structure that includes the full cost of operating the water supply system. The Town shall continue to evaluate rates annually at a minimum 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 Permittee shall continue to implement an increasing block rate structure.

Residential and Public Sector Conservation

1. The Permittee shall continue to ensure that the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code are met when buildings are constructed or renovated.
2. The Permittee shall continue to meter and bill for water used by contractors using fire hydrants for pipe flushing and construction.
3. The Permittee shall continue to ensure that water conserving fixtures and landscaping practices are incorporated into the design of new municipal capital projects.

Industrial and Commercial Water Conservation

1. The Permittee reports that it has limited industrial or commercial properties.

Public Education and Outreach
<p>1. The Permittee shall implement water conservation and education efforts designed to educate the Permittee's water customers on ways to conserve water. Without limitation, the Permittee's plan may include the following actions:</p> <ul style="list-style-type: none">○ 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.
<p>2. Upon request of the Department, the Permittee 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.</p>

9. Minimization of Groundwater Withdrawal Impacts in Stressed Basins

Warren shall minimize the impacts of its groundwater withdrawals from its permitted sources in Subbasin 17023 as follows:

Since 2005, Warren has implemented conservation measures to promote sustainable water use. Warren shall ensure these measures remain operable and effective for the duration of this permit. The measures include:

- Utilizing a remote meter reading system and issuing fines for incidents of water theft;
- Monitoring high-use residential customers and conducting outreach to encourage water conservation efforts.
 - On the first usage flag, owners are notified and warned of a potential leak.
 - On the second usage flag, Warren offers leak detection services for a fee.
 - On the third usage flag, Warren reserves the right to investigate potential causes of high usage and may shut off water service if repairs are not scheduled in a timely manner.

MassDEP review has determined that:

- Warren has no surface water supply impoundments, and therefore surface water releases are not part of the applicant's Minimization Plan, and
- All of Warren's wells are in Subbasin 17023 and therefore Warren is unable to shift its withdrawals to a less impacted subbasin.

10. Requirement to Report Raw and Finished Water Volumes

Warren shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system and the raw water volumes for individual water withdrawal points.

GENERAL PERMIT CONDITIONS (applicable to all Permittees)

- 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 over which Permittee has authority, title or control, 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 M.G.L. c. 21G, §§ 15-17, M.G.L. c. 150, § 111, 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 36.33.
- 6. Duty to Report** The Permittee shall submit annually, on a form provided by the Department, a certified statement of the withdrawal. Such report is to be received by the Department by the date specified by the Department. Such report must be submitted as specified on the report form.
- 7. Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal and all other records as specified by this permit.
- 8. Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
- 9. Right to Amend, Suspend or Terminate** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

APPEAL RIGHTS AND TIME LIMITS

Any person aggrieved by this decision may request an adjudicatory hearing on this Permit by timely filing a Notice of Claim for an Adjudicatory Appeal (“Notice of Claim”) in accordance with 310 CMR 36.37 and 310 CMR 1.01 within twenty-one (21) days of its 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 Permittee, unless such person notifies the Permittee 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 by certified mail or hand delivered to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
100 Cambridge Street, Suite 900
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.

EXEMPTIONS

The filing fee is not required if the appellant is a municipality (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

WAIVER

MassDEP may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of MassDEP that the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.

Duane LeVangie
Water Management Program Chief
Bureau of Water Resources

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 an 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).
 - a) 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.
 - b) 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.
 - c) 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:

- a) 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.
- b) 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.
- c) Bill at least quarterly within three years.
- d) 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:

- a) Document economic hardship and present an analysis demonstrating that implementation of specific measures will cause or exacerbate significant economic hardship;
- b) 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
- c) 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.