



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

September 16, 2026

Sterling Select Board
Sterling Town Hall
1 Park Street
Sterling, MA 01564

Re: PWS Town: Sterling
PWS Name: Sterling DPW
WMA Permit #: 9P2-2-11-282.01
WMA Permit Amendment and Renewal

Dear Select Board:

Please find the attached documents:

- Findings of Fact in Support of the Water Management Act Permit #9P2-2-11-282.01; and
- Water Management Act Amended Renewed Permit #9P2-2-11-282.01 for the Town of Sterling in the Nashua River Basin.

The DRAFT Renewal Permit was posted in the Public Notice section of the July 22, 2026, edition of the Massachusetts Environmental Policy Act (MEPA) Environmental Monitor. Notice of the Draft Renewal Permit was also sent to all WMA Registrants and Permittees in the Connecticut River Basin and to other interested parties offering a 30-day comment period. No comment was received.

The signature on this cover letter indicates formal issuance of the attached documents. If you have any questions regarding this information, please contact Linjun Yao at: Linjun.Yao@mass.gov or (781) 686-3862, or me, Duane LeVangie, at duane.levangie@mass.gov or (617) 780-1962.

Sincerely,

Duane LeVangie, Chief
Water Management Program

Ecc: Ryan Mouradian, Superintendent, Sterling Department of Public Works
Dave Harwood, PG, LG, Verdantas
Jen Pederson, MWWA
Jessica Veysey Powell, Nashua River Watershed Association
Melissa Shapiro, Massachusetts Rivers Alliance
Lydia Olson, Massachusetts Rivers Alliance

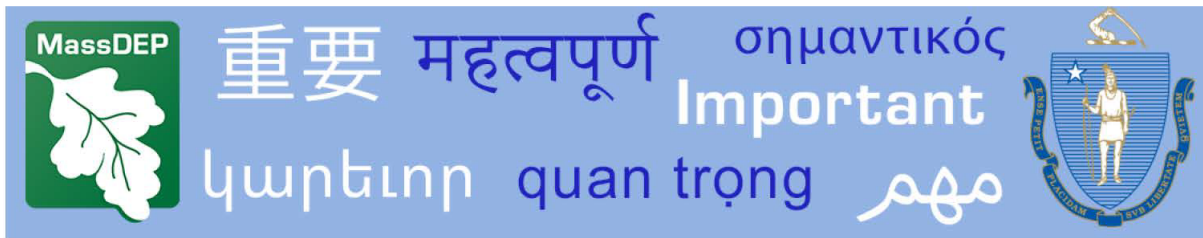
Randy Swigor, MassDEP CERO

Timothy O'Keefe, MassDEP CERO

Adam Kautza, Massachusetts Division of Fisheries & Wildlife

Misty-Anne Marold, Massachusetts Division of Fisheries & Wildlife

[mass.gov.sharepoint/DWPWMA/PermitRenewals/Nashua/Sterling/Sterling-2282000-WMA Final Permit 9P2-2-11-282.01 -9-16-2026_a11y](https://mass.gov/sharepoint/DWPWMA/PermitRenewals/Nashua/Sterling/Sterling-2282000-WMA%20Final%20Permit%209P2-2-11-282.01%20-9-16-2026_a11y)



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

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

Este documento é importante e deve ser traduzido imediatamente. Se você precisar traduzir este documento, entre em contato com o Diretor de Justiça Ambiental do MassDEP no número de telefone listado abaixo.

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

这份文件非常重要，需要立即翻译。
如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

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 número di telefoni menxionadu di baixo.

Deneen Simpson 857-406-0738
TTY# MassRelay Service 1-800-439-2370

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 على رقم الهاتف المذكور أدناه MassDEP البيئية في.

한국어 Korean

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

հայերեն 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 در شماره تلفن ذکر شده زیر تماس بگیرید MassDEP

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

स्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए।. यह दसदि 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।

Deneen Simpson 857-406-0738
TTY# MassRelay Service 1-800-439-2370



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Findings of Fact in Support of Water Management Permit #9P2-2-11-282.01 Town of Sterling

The Massachusetts Department of Environmental Protection (the Department or MassDEP) has completed its review of Town of Sterling's Department of Public Works (Sterling DPW or Sterling) Water Management Act (WMA) permit amendment application dated January 25, 2024, and permit renewal application filed on December 9, 2016. The Department hereby proposes to issue WMA Permit #9P2-2-11-282.01 (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).

Sterling's Water Withdrawal History

Registered Sources: Sterling holds Water Management Act Registration Statement #2-11-282.02 for an average annual daily withdrawal volume of 0.40 million gallons per day (MGD) from four wells in the Nashua Basin: Well #3 (03G), Worcester Road Well 2A (06G), Worcester Road Well 2B (07G), and Worcester Road Well 2C (08G).

Original Permit, November 1994: Sterling's permit (#9P2-2-11-282.01) authorized additional withdrawals of up to an additional 0.23 MGD for a total annual average withdrawal of up to 0.63 MGD including the registration. The permit included Wells #3 (03G), #4 (04G), and #5 (05G).

Modified Permit, June 2010: Sterling was issued a modified permit after DEP performed a compliance review. Permitted sources and annual authorized volumes did not change. The permit was modified to include new permit conditions: performance standards for Residential Gallons per Capita Day (RGPCD) and Unaccounted for Water (UAW), seasonal limits on nonessential outdoor water use, and baseline water use.

Permit Extension Act: Sterling's 2010 WMA Permit was initially set to expire on February 28, 2014. 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 Nashua River basin were extended to

February 28, 2018. In accordance with 310 CMR 36.17(1), the expiration date for all new permits in the Nashua River Basin will be February 28, 2034.

Permit Renewal Application: MassDEP received a WMA permit renewal application from Sterling for their withdrawal in the Nashua River Basin. MassDEP published notice of the permit renewal application in the Environmental Monitor on July 26, 2017. No comments were received.

On October 21, 2016, MassDEP informed Sterling that MassDEP would need additional time before making a determination on the renewal application 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 within the basin. Pursuant to M.G.L. c. 30A, § 13, and 310 CMR 36.18(7), Sterling's permit continued in force and effect until MassDEP issues a final decision on its renewal application.

WM03 Water Management Withdrawal Permit Amendment Application: On January 25, 2024 MassDEP received a WM03 permit amendment application from Sterling to add the Crowley Road Wellfield which consists of three wells (B, C and D). On November 15, 2024, MassDEP issued Sterling an Order to Complete (OTC) for the renewal and amendment applications outlining specific information that was required to complete MassDEP's review of the applications. Sterling responded to the OTC in a letter to DEP dated April 14, 2025. On September 8, 2025, MassDEP sent a Supplemental OTC requesting additional information and received Sterling's response dated October 31, 2025.

New Permit, September 16, 2026: This permit supersedes WMA Permit # 9P2-2-11-282.01 originally issued to Sterling in November 1994, and last amended in June 2010. The permit adds a wellfield consisting of three withdrawal permitted points, Wells B, C and D. The total authorized volume continues to be 0.63 MGD.

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

The Water Management Act (Act) requires MassDEP 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* ([Sustainable Water Management Initiative \(SWMI\) Technical Resources | Mass.gov](#)) was released.

On November 7, 2014, MassDEP 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 Water Resources Commission (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, MassDEP 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 Nashua Basin section of this document or 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 standards reviewed and approved by the WRC in July 2006 and revised in July 2018 (<https://www.mass.gov/doc/massachusetts-water-conservation-standards-2>) including:
 - 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;
 - mitigation of the impacts of increasing withdrawals.

Safe Yield in the Nashua River Basin

This permit is being issued under the safe yield methodology adopted by MassDEP 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 calculation for the Nashua River Basin is 255.50 million gallons per day (MGD), and total registered and permitted withdrawals are 180.72 MGD. The withdrawals authorized by this permit and all other permits within the Nashua River Basin will be within the safe yield of the Nashua River Basin and may be further conditioned as outlined in the regulations.

Findings of Fact for Permit Conditions in Sterling's Water Management Act Permit

The 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, Authorized Withdrawal Volume, reflects the registered withdrawal volume of 0.40 MGD and a permitted volume of 0.23 MGD, for a total authorized withdrawal volume of 0.63 MGD, which is consistent with the volume included in Sterling's original Water Management Act Permit. The Department of Conservation and Recreation (DCR) prepared two Water Needs Forecasts for Sterling (letter of January 5, 2017) that outlined potential future demands that could be used in Water Management Act permitting (See Table 1).

This permit authorizes withdrawals of up to 0.63 MGD, its previously total authorized volume. Water withdrawal above 0.63 MGD would require Sterling to file and obtain a new Water Management Act Permit.

Table 1: DCR Water Needs Forecast

Last Year of 5-Year Period	65/10 Forecast (MGD)	Current Trends Forecast (MGD)
2024	0.69	0.63
2029	0.69	0.63
2034	0.69	0.63
2034 plus 5% buffer	0.72	0.66

Sterling's water withdrawals in recent years have been:

Table 2: Sterling DPW Annual Average Withdrawals (in MGD)

2020	2021	2022	2023	2024
0.58	0.52	0.62	0.55	0.63

Special Condition 2, Maximum Authorized Daily Withdrawals from each Withdrawal Point, specifies the maximum daily withdrawal rates by source, according to the approved rates established by MassDEP's Drinking Water Program.

Table 3: Authorized and Actual Maximum Daily Water Withdrawal Volume

Source Name	Source ID	Authorized MAX Daily Withdrawal (MGD)	Reported MAX Daily Withdrawals (MGD)				
			2020	2021	2022	2023	2024
Well #3	2282000-03G	0.72	0.70	0.397	0.714	0.494	0.530
Well #4	2282000-04G	0.68	0.589	0.418	0.495	0.360	0.467
Well #5	2282000-05G	0.72	0.587	0.419	0.598	0.428	0
Crowley Road Wellfield	2282000-##G*	**					
* PWS Source ID will be assigned by the MassDEP Drinking Water Program when the wellfield is approved to be activated. ** The approved daily rate will be determined by the Drinking Water Program's New Source Approval process.							

Special Condition 3, Zone of Contribution Delineations

Sterling has DEP-approved Zone II delineations for all of its existing permitted wells. The Zone II for the Crowley Road Wellfield has not yet been approved by MassDEP's Drinking Water Program. When the Zone II is approved by MassDEP, Sterling must fully protect the Zone II with municipal controls that meet the Wellhead Protection Regulations 310 CMR 22.21(2). Compliance with 310 CMR 22.21(2) is required prior to the operation of the wellfield.

Special Condition 4, Groundwater Supply Protection

This condition of the permit requires that Sterling establish land use controls and water supply protection measures within the Zones of Contribution of its groundwater sources in order to comply with 310 CMR 22.21(2). Town of Sterling Protective By-law has met the requirements of 310 CMR 22.21(2) for all of its existing wells. This condition will also be required prior to the operation of the Crowley Road Wellfield. Per Sterling's OTC response dated April 14, 2025, the Town of Sterling stated they will pursue this requirement but request extra time to comply with the Wellhead Protections Regulation 310 CMR 22.21(2).

Special Condition 5, Performance Standards for Residential Gallons Per Capita Day Water Use and **Special Condition 6, Performance Standard for Unaccounted for Water** are part of the *Water Conservation Standards for the Commonwealth of Massachusetts* adopted by the MA Water Resources Commission in July 2018 and can be found at <https://www.mass.gov/files/documents/2018/09/11/ma-water-conservation-standards-2018.pdf>.

The RGPCD performance standard for Public Water System (PWS) permittees is 65 gallons per person per day. Permittees that cannot meet the performance standard within the timeframe in the permit must meet Functional Equivalence requirements outlined in Appendix A. Sterling met the RGPCD standard for the last 5 years.

The UAW performance standard for PWS permittees is 10% for 2 out of every 3 years. Permittees that cannot comply within the timeframe in the permit must meet 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. Sterling's UAW fluctuated significantly from 2020 to 2024, ranging from 1% to 29%. Sterling has not met the UAW standard of 10% or lower for 2 out of every 3 years and therefore is required to perform an M36 water audit. Sterling conducted an M36 audit in each of the past three years. The water audit has helped Sterling better track the Confidentially Municipal Estimated Use (flushing, loss from water breaks, known unmetered uses) and has helped focus efforts to reduce UAW. Sterling has performed leak detection annually, tested and calibrated source meters annually, replaced aging water mains and water meters. Also, Sterling has identified customer meter scaling issues resulting in incorrect reporting in 2023, which is one of the causes for high UAW reporting. Table 4 below shows Sterling's recent RGPCD and UAW values as approved by MassDEP.

Table 4: Sterling DPW RGPCD and UAW

Sterling	2020	2021	2022	2023	2024
RGPCD	61	54	55	57	56
UAW	1 %	25 %	29 %	10 %	25 %

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use requires restrictions on nonessential outdoor water use from May through September and has changed since the existing permit was issued in 2010. A review of the Annual Statistical Reports filed by Sterling in conjunction with the DEP-accepted RGPCD values shown above in Table 4, Performance Standard for RGPCD for the last five years support that the permittee has been complying with identified nonessential outdoor water use restrictions during the applicable period.

The Amended WMA Permit will update the requirements on nonessential outdoor water use restrictions. The updated seasonal limits will be based on:

- More stringent seasonal limits (e.g., two days per week) are required due to the presence of Coldwater Fishery Resources (CFR) and sensitive aquatic species (e.g., turtle habitat) within the vicinity of the Crowley Road Wellfield, as identified by the Massachusetts Division of Fisheries and Wildlife (MA DFW) and Natural Heritage & Endangered Species Program (NHESP);
- the permittee's compliance with the RGPCD performance standard during the preceding year; and
- 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.

Each year Sterling must 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. 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 Sterling selects the streamflow approach, it has been assigned the USGS local stream gage of #01095220 –Stillwater River near Sterling, MA. The local gage streamflow triggers at this site are 26 cubic feet per second (cfs) for May and June, and 10 cfs for July, August and September. Should the reliability of flow measurement at the Stillwater River gage be so impaired as to question its accuracy, Sterling 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.

- **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 Stillwater River at Sterling, MA gage is 1.8 cfs.

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

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

Guidance for Permittees Concerning Enforcement Authority

This permit condition does not confer enforcement authority to the permittee. For permittees that do not have the necessary local enforcement authority, MassDEP has developed a Model Outdoor Water Use Bylaw/Ordinance to help municipalities implement nonessential water use restrictions. The Model Bylaw also includes options for regulating private wells and in-ground irrigation systems. See [Model Water Use Restriction Bylaw/Ordinance Update | Mass.gov](#). Prior to April 30, 2027, Sterling must have by-laws that authorize enforcement of limits on nonessential outdoor water use and establishes penalties for violations of a Declaration of a State of Water Supply Conservation.

Special Condition 8, Mitigation of Impacts for Withdrawals that Exceed Baseline

This condition requires mitigation for withdrawals over a baseline volume. The 2010 WMA Permit provides that Sterling’s Baseline Withdrawal Volume is their compliance volume in 2005 of 0.60 MGD. The 2010 WMA Permit provides that if Sterling withdraws more than its baseline volume, it will have to conduct and implement an offset feasibility study. In 2014, the Water Management Act

Regulations were revised. The revised regulations included a new definition of baseline and new requirements for permittees that withdraw more than their baseline volume.

Baseline withdrawal 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.

Baseline Withdrawal: Sterling's baseline remains 0.60 MGD, based on their authorized volume for 2005.

Environmental Impact of Increased Withdrawals¹: MassDEP assesses impact of increased withdrawals over a permittee's Baseline on the subbasins² from which the withdrawals will be taken, specifically on the Groundwater Withdrawal Category (GWC) and the Biological Category (BC) of each subbasin as of 2004. MassDEP's assessment assumes that the entire withdrawal increase over baseline could come from any subbasin with permitted withdrawal points.

Table 5: Sterling's Potential Impact to Subbasin GWC

Subbasin	GWC	Additional water available before GWC change	Wells
11064	3	0.31 MGD	03G (Registered & Permitted)
11063	4	0.24 MGD	04G, 05G (Permitted)
11004	2	0.01 MGD	06, 07, 08G (Registered)
11005	3	0.55 MGD	Crowley Rd, Wellfield (TBD)

MassDEP's assessment has shown that Sterling's permitted withdrawal above baseline will not change the Groundwater Withdrawal Category (GWC) of any of the subbasins with permitted withdrawal points. Subbasin 11004 which has the potential to change a GWC category with an increase of only 0.01 MGD, includes only registered sources, and therefore is not authorized to increase their withdrawal volumes by this permit. Therefore, Sterling will be considered subject to Tier 2 requirements. Sterling is required to first provide all feasible direct mitigation for withdrawals over baseline and then provide indirect mitigation for all remaining withdrawals over baseline.

Wastewater Adjustment: Permittees must mitigate any increases in withdrawals above baseline commensurate with impact. A "wastewater adjustment" is calculated for water withdrawals that are returned to the ground as wastewater within the same major basin. MassDEP assumes that 85% of water delivered to customers with septic systems will be returned to the ground, thus reducing the amount of mitigation needed.

Mitigation Calculation: The mitigation calculation below assumes that Sterling's future withdrawals will be discharged to groundwater after treatment at the same rate (100%) as current water withdrawals. After calculating the adjustment for authorized withdrawals over baseline that will be returned to groundwater, Sterling will be required to provide mitigation for 0.0045 MGD (4,500 gpd) for withdrawals up to 0.63 MGD.

Table 6: Sterling's Wastewater Adjustment Calculation for Mitigation

Sterling's Baseline withdrawals = authorized volumes for 2005 = 0.60 MGD	
1. Permitted amount above Baseline = 0.03 MGD	
Permitted amount above Baseline: $0.63 - 0.60 = 0.03$ MGD	
2. Adjustment for Wastewater Discharge to Local Groundwater = 0.0255 MGD	
100% of increased withdrawals are delivered to areas where wastewater is discharged to groundwater after treatment: $0.03 \text{ MGD} \times 1.0 (100\%) = 0.03 \text{ MGD}$ 85% of water delivered to areas with local groundwater discharge returns to groundwater: $0.03 \text{ MGD} \times 0.85 (85\%) = 0.0255 \text{ MGD}$	
Mitigation Required after Adjustment for Wastewater Discharge to Groundwater = 0.0045 MGD Permitted amount above baseline (0.03 MGD) – adjustment for wastewater discharge to local groundwater (0.0255 MGD) = 0.0045 MGD or 4,500 gallons per day of direct mitigation and/or 1 indirect mitigation credit (10,000 gpd)	

Mitigation Credit: Water Management permits can include both direct and indirect mitigation activities.

- Direct mitigation credit, for activities which will improve streamflow as a result of increased groundwater recharge, decreased stormwater runoff to streams, or by surface water releases, must be considered first in mitigation planning.
- If the required mitigation cannot be achieved through direct mitigation, then the applicant must evaluate indirect mitigation activities that provide environmental improvements that will compensate for streamflow impacts, but which cannot be volumetrically quantified.
- Indirect mitigation activities are assessed on a credit system for the benefits of a particular action. Each indirect credit is equal to 10,000 gpd, and withdrawals that lower the GWC of any subbasin require twice the amount of credits.

Direct Mitigation can be provided through surface water releases to improve streamflow, recharging stormwater to the ground, improvements to the sewer collection system to reduce infiltration and inflow (I&I).

- Sterling identified the recently completed Stormwater Recharge Project at the Sterling Town Beach as the only direct mitigation available. Sterling calculated that this infiltration project can be expected to capture and infiltrate 401 gallons per day (gpd), based on average annual precipitation, and the capture area. Therefore, the first 401 gpd of Sterling's required mitigation will be direct mitigation.
- 4,099 gallons per day remains to be mitigated for withdrawals of up to 0.63 MGD.

Indirect Mitigation activities that result in environmental improvements that will compensate for streamflow impacts are required when a permittee has insufficient direct mitigation credit. Indirect mitigation activities are scored according to a qualitative credit system. Each indirect credit is equal to 10,000 gallons per day. Sterling's currently available mitigation credits are outlined in the table below.

Table 7: Sterling DPW's Direct and Indirect Mitigation Credits

Direct Mitigation	
Stormwater BMP credit	0.0004 MGD = direct credit for 401 gpd
Town of Sterling's Chapter 164, Stormwater Management Bylaw (9/3/2009, amended 10/11/2012)	1 credit for regulating projects of one acre or more in the stormwater bylaw.

Sterling has met the mitigation required for its withdrawals above baseline through direct and indirect mitigation.

Special Condition 9, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission in July 2018 (<https://www.mass.gov/doc/massachusetts-water-conservation-standards-2>).

Special Condition 10, Coldwater Fish Resource Protection was incorporated into the Water Management Regulations in November 2014. Permittees with withdrawals that impact streamflow at a CFR (identified on basin maps) must evaluate reducing impacts to CFRs through feasible optimization. Sterling has permitted sources in three subbasins (11063, 11064, and 11005) that contain CFRs identified by the Massachusetts Division of Fisheries and Wildlife (MA DFW), and also contain the habitat of the Wood Turtle (*Glyptemys insculpta*), a turtle species listed as a Special Concern.

Regarding the Wood Turtle concern, the pumping test report was submitted to the Natural Heritage & Endangered Species Program (NHESP) for review and comment on the potential impact to the Wood Turtle. NHESP responded to Sterling's application dated February 17, 2026.

After consultation with the MA DFW, a stand-alone monitoring plan (Attachment A) is required to investigate the potential impacts of the new Crowley Road Wellfield on the nearby Stillwater River and CFRs, and to identify the measures Sterling may take to minimize. On October 31, 2025, Sterling submitted the Stillwater River Monitoring Plan to evaluate withdrawal impacts on the Stillwater River's water temperature, streamflow conditions, habitat availability and utilization of spawning habitat. Monitoring activities will begin in early spring of 2027, and the first annual report will be submitted to MassDEP in January of 2028. Monitoring and annual reporting will continue until MassDEP and MA DFW is satisfied that pumping is not adversely impacting the CFR. MassDEP or Sterling may propose a modified monitoring plan if they believe that sufficient data has been collected to warrant modifications.

In the OTC response dated April 15, 2025, Sterling indicated its intent to split withdrawals generally evenly: 33% from the existing Stillwater sources (Wells 03G, 04G, and 05G on Redemption Rock Road), 33% from the new Stillwater source on Crowley Road, and 33% from sources in subbasin 11044 (Wells 06G, 07G, and 08G on Worcester Road). The Department recognizes this proposed distribution as a reasonable operational approach and supports the goal of maximizing the use of the registered wells in subbasin 11044.

In the email response dated October 31, 2025, Sterling noted if the monitoring identifies negative impacts on CFRs associated with this allocation, the permit may be reopened to require operational changes. In addition, the new permit will require more stringent seasonal nonessential outdoor water use restrictions. Such changes could include increasing reliance on subbasin 11044 registered sources (Wells 06G, 07G, and 08G) and reducing withdrawals from Stillwater sources.

Special Condition 11, Reporting Requirements ensures that the information necessary to evaluate compliance with the permit conditions is accurately reported.

Other Permit Considerations

Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins, requires permittees with permitted groundwater sources in subbasins with net groundwater depletion of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible.

Since Sterling's three subbasins with permitted sources in the Nashua River Basin are less than 25% August NGD, Sterling is not currently required to implement measures to minimize withdrawal impacts.



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

WATER WITHDRAWAL PERMIT MGL C 21G

This permit is issued pursuant to the Massachusetts Water Management Act (the Act) for the sole purpose of authorizing the withdrawal of a volume of water as stated herein 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: 9P2-2-11-282.01

RIVER BASIN: Nashua

PERMITTEE: Town of Sterling
Department of Public Works
171 Worcester Rd
Sterling, MA 01564

EFFECTIVE DATE: September 16, 2026

EXPIRATION DATE: February 28, 2034

NUMBER OF WITHDRAWAL POINTS: 4
Groundwater: 4 Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATION(S):

Table 1. Source Names and PWS Source ID Codes

Source Name	PWS Source Code
Well #3	2282000-03G
Well #4	2282000-04G
Well #5	2282000-05G
Crowley Road Wellfield	2282000-TBD*
* The PWS Source Code will be assigned when the source is approved to activate.	

SPECIAL PERMIT CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Sterling Water Department (SWD) to withdraw water from the Nashua River Basin at the rate described below in Table 2. The permitted withdrawal volume is in addition to the 0.40 million gallons per day (MGD) previously authorized to Sterling under Water Management Act Registration #211282.01 for withdrawal from the Nashua River Basin. The authorized volumes are expressed both as an annual average daily withdrawal rate (MGD) and as a total annual withdrawal volume (million gallons per year or MGY) for each period of the permit term.

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

Table 2: Maximum Authorized Annual Withdrawal Volumes

Permit Periods	Total Raw Water Withdrawal Volumes			
	Permit		Permit + Registration	
	Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
9/16/2026 to 2/28/2029	0.23	83.95	0.23 + 0.40 = 0.63	229.95
3/1/2029 to 2/28/2034	0.23	83.95	0.23 + 0.40 = 0.63	229.95

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 authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Maximum Authorized Daily Withdrawal Rates

Source Name	PWS Source ID Code	Approved Rate
Well #3	2282000-03G	0.72 MGD
Well #4	2282000-04G	0.68 MGD
Well #5	2282000-05G	0.72 MGD
Crowley Road Wellfield	2282000- TBD*	**

* The PWS Source Code will be assigned when the source is approved to be activated.

** The approved daily rate will be determined by the Drinking Water Program's New Source Approval process.

3. Zone of Contribution Delineations

Sterling has DEP-approved Zone II delineations for all of its existing permitted wells. MassDEP records indicate that the Zone II for the Crowley Road Wellfield has not yet been approved by MassDEP's Drinking Water Program. When the Zone II is approved by MassDEP, Sterling must

fully protect the Zone II with municipal controls that meet the Wellhead Protection Regulations 310 CMR 22.21(2). Compliance with 310 CMR 22.21(2) is required prior to the operation of the wellfield.

4. Groundwater Supply Protection

Sterling is in compliance with MassDEP's Drinking Water Program regulations "Wellhead Protection Regulations at 310 CMR 22.21(2)" requirement for existing permitted wells. Prior to the operation of the Crowley Road Wellfield, Sterling is required to comply with 310 CMR 22.21(2) by implementing required land use controls and water supply protection measures within the Zones of Contribution of all groundwater sources.

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

Sterling's performance standard for residential gallons per capita day (RGPCD) is 65 gallons per day or less. Sterling shall report its RGPCD water use annually in its Annual Statistical Report (ASR).

If Sterling does not meet the RGPCD standard at any time during the permit period, Sterling shall implement an on-going program that ensures "best practices" for controlling residential water use as described in the functional equivalence requirements in Appendix A of this permit.

6. Performance Standard for Unaccounted for Water

Sterling's Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for 2 of the most recent 3 years throughout the permit period. Sterling shall report its UAW annually in its Annual Statistical Report. Sterling's ASR shall include the calculation used 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 the 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 Audits and Loss Control Programs*. 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 Annual Statistical Report for public water systems.

If Sterling does not meet the standard beginning with calendar year 2025, 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 M36*, as outlined in Appendix B.

7. Seasonal Limits on Nonessential Outdoor Water Use

Sterling shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th annually 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 document compliance with the limits on nonessential outdoor water use annually in its ASR.

Table 4: Limits on Nonessential Outdoor Water Use from May 1 through September 30

Restrictions are triggered by USGS Gage 01095220 - Stillwater River at Sterling, MA (the Gage).
For Permittees Meeting the 65 RGPCD Standard for the Preceding Year When RGPCD was 65 or below as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table.
CALENDAR Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.: a) Two (2) days per week ; and b) One (1) day per week when flow at the Gage falls below 1.8 cfs for three (3) consecutive days.
Once implemented, restrictions shall remain in place until streamflow at Gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
STREAMFLOW Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m.: a) Two (2) days per week when flow at the Gage falls for three (3) consecutive days below: • 26 cfs from May 1 – June 30, and • 10 cfs from July 1 – September 30; except b) One (1) day per week whenever flow at the Gage falls below 1.8 cfs for three (3) consecutive days.
Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
For Permittees NOT Meeting the 65 RGPCD Standard for the Preceding Year When RGPCD was above 65 as reported in the ASR and accepted by MassDEP, choose either Calendar Triggered Restrictions or Streamflow Triggered Restrictions from this section of the Table.
CALENDAR Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. one (1) day per week.
STREAMFLOW Triggered Restrictions
Nonessential outdoor water use is allowed before 9 a.m. and after 5 p.m. one (1) day per week when flow at the Gage falls for three (3) consecutive days below: • 26 cfs from May 1 – June 30, and • 10 cfs from July 1 – September 30.
Once implemented, restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

Table 5: Tracking Streamflows through the USGS Website

Instructions for Accessing Streamflow Website Information

The permittee shall be responsible for tracking stream flows 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 quarter-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 for 3 consecutive days. 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, the Permittee must use the mean daily streamflow from the preceding day when tracking stream flows.

Mean daily streamflow gage readings are available at the USGS NWIS Web Interface at [USGS Stream Gage and Well-Monitoring Data webpage](#).

For additional questions or for additional support, contact the MassDEP Water Management Program at DEP.WMA@mass.gov (preferred), or the WMA Program contact identified in this permit.

Should the reliability of flow measurement at the USGS Gage 01095220 - Stillwater River at Sterling, MA be so impaired as to question its accuracy, Sterling may request MassDEP's review and approval to transfer to another gage to trigger restrictions.

MassDEP reserves the right to require the use of a different gage.

Nonessential Outdoor Water Uses 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 should be notified by April 15 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 website ([Outdoor Water Use Restrictions for Cities, Towns, and Golf Courses | Mass.gov](https://www.mass.gov/info-details/outdoor-water-use-restrictions-for-cities-towns-and-golf-courses)).

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

8. Mitigation of Impacts for Withdrawals that Exceed Baseline

Sterling is required to mitigate up to 0.0045 MGD (4,500 gpd) for its authorized withdrawals beyond its 0.60 MGD baseline withdrawal rate. The mitigation requirements to withdraw the fully authorized volume in this permit of 0.63 MGD is met through the following mitigation measures.

Table 6: Sterling Water Department's Direct and Indirect Mitigation Credits

Direct Mitigation	
Stormwater BMP credit at the Sterling Town Beach	Stormwater recharge project design: two stone trenches and a rain garden infiltration basin Effective impervious catchment area: 4,705 sq ft = 2,250 sq ft paved parking + 2,455 sq ft effective impervious gravel parking (17,441 sq ft × 14.08%) Annual average rainfall: 49.93 inches (Holden gauge, MA) Sterling estimated capture and infiltration volume: 0.0004 MGD = direct credit for 401 gpd

Indirect Mitigation	
Town of Sterling's Chapter 164, Stormwater Management Bylaw (9/3/2009, amended 10/11/2012)	1 credit (10,000 gpd) for regulating projects of one acre or more in the stormwater bylaw.

9. Water Conservation Requirements

At a minimum, Sterling shall implement the following conservation measures forthwith. Compliance with the water conservation requirements shall be reported to MassDEP upon request, unless otherwise noted below in Table 7.

Table 7: Minimum Water Conservation Requirements

System Water Audits and Leak Detection
- At a minimum, conduct a full leak detection survey every three years. A full leak detection survey shall be completed by December 31, 2026. - 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 MassDEP 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. - Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36. - Repair reports shall be kept available for inspection by MassDEP. 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. - Permittee shall have water use regulations in place that require property owners to expeditiously repair leaks on their property. The following exceptions may be considered: - Repair of leakage detected during winter months can be delayed until weather conditions become favorable for conducting repairs;* and - Leaks in freeway, arterial or collector roadways may be coordinated with other scheduled projects being performed on the roadway**. *Reference: MWRA regulations 360 CMR 12.09 **Mass Highway or local regulations may regulate the timing of tearing up pavement to repair leaks.
Metering
Calibrate all source, treatment and finished water meters at least annually and report date of calibration on the ASR.

2. One hundred percent (100%) metering of the system is required. 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. Sterling 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. Establish a water pricing structure that includes the full cost of operating the water supply system. Full cost pricing recovers all costs as applicable, including:
 - pumping and distribution equipment cost, repair and maintenance;
 - water treatment;
 - electricity;
 - capital investment, including planning, design and construction;
 - land purchase and protection;
 - debt service;
 - administrative costs including systems management, billing, accounting, customer service, service studies, rate analyses and long-range planning;
 - conservation program including audits, leak detection equipment, service and repair, meter replacement program, automated meter reading installation and maintenance, conservation devices, rebate program, public education program;
 - regulatory compliance; and
 - staff salaries, benefits training and professional development.
2. Evaluate rates at a minimum every three to five years and adjust costs as needed.
3. Permittee shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are prohibited by M.G.L. Chapter 40 Section 39L.
4. Continue to implement quarterly or more frequent meter reading and billing.

Residential and Public Sector Conservation

1. Meet all 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. Municipal buildings
 - Sterling reported that the building owned by Sterling complies with the latest plumbing code with respect to water conservation. Sterling submitted a letter dated November 6, 2020 to the Sterling Town Manager requesting that the Town complete retrofitting of public buildings with water saving devices and fixtures.
4. Prior to April 30, 2027, Sterling must have by-laws that provide enforcement authority for the specific Seasonal Limits on Nonessential Outdoor Water Use contained in Special Condition 7 of this permit.

Industrial and Commercial Water Conservation
1. Sterling shall ensure implementation of water conservation practices, including the installation of WaterSense compliant low flow plumbing fixtures where applicable, and low water use landscaping in all development proposals.
Public Education and Outreach
1. Develop and implement a water conservation and education plan designed to educate water customers on ways to conserve water. Without limitation, the 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 MassDEP, Sterling shall report on its public education and outreach efforts, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

10. Coldwater Fish Resource Protection was incorporated into the Water Management Regulations in November 2014. Permittees with withdrawals that impact streamflow at a CFR (identified on basin maps) must evaluate reducing impacts to CFRs through feasible optimization. Sterling has permitted sources in three subbasins (11063, 11064, and 11005) that contain CFRs identified by the Massachusetts Division of Fisheries and Wildlife (MA DFW).

Sterling shall implement its proposed withdrawal distribution plan submitted on April 15, 2025 with its response to the OTC- that identified that withdrawals would be evenly distributed among the existing Stillwater sources, the new Stillwater source on Crowley Road, and sources in subbasin 11044, as a reasonable operational approach and supports the goal of maximizing the use of the registered wells (list the wells) in subbasin 11044.

Sterling's shall also implement its Stillwater River Monitoring Plan submitted on October 31, 2025 (Attachment A). Sterling is required to implement this monitoring plan to evaluate withdrawal impacts on the nearby Stillwater River's water temperature, streamflow conditions, CFRs habitat availability and utilization of spawning habitat. Monitoring activities will begin in early spring of 2027, and the first annual report will be submitted to MassDEP in January of 2028.

If the monitoring identifies negative impacts on CFRs associated with this allocation, the permit may be reopened to require operational changes. Such changes could include increasing reliance on subbasin 11044 registered sources (Wells 06G, 07G, and 08G) and reducing withdrawals from Stillwater sources.

Monitoring and annual reporting will continue until MassDEP and MA DFW is satisfied that pumping is not adversely impacting the CFR. MassDEP or Sterling may propose a modified monitoring plan if they believe that sufficient data has been collected to warrant modifications.

11. Reporting Requirements: Sterling shall complete the electronic Annual Statistical Report (eASR) for public water systems, including reporting of raw and finished water volumes for the entire water system and the raw water volumes for each individual withdrawal point, and shall provide other reporting as specified in the Special Conditions above.

GENERAL PERMIT CONDITIONS (applicable to all permittees except Cranberry permits)

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 the Department has received a timely permit renewal 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, the Water Management Act regulations at 310 CMR 36.00, and all other 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 at reasonable times any property, facility, operation, equipment or activity involving the withdrawal of water, and to inspect and copy any relevant records, 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. 111, §§ 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 the submittal of a transfer application in accordance with 310 CMR 36.33 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 as set forth in 310 CMR 4.00.
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. For public water supplier permittees, the report form is the MassDEP Drinking Water Program Public Water Supply Annual Statistical Report.

7. **Annual Compliance Fee:** The permittee shall submit any applicable annual compliance fee as established in 310 CMR 4.00.
8. **Duty to Maintain Records:** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
9. **Metering:** All withdrawal points included within the permit shall be metered. Meters are to be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
10. **Amendment, Suspension or Termination:** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

NOTICE OF APPEAL RIGHTS

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 1.01 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 the 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, including a copy of the fee transmittal form and a copy of the check, 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 or money order 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.



September 16, 2026

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

Date

Attachments:

Endnotes

Attachment A: Stillwater River Monitoring Plan

Appendix A: Functional Equivalence with the 65 RGPCD Performance Standard

Appendix B: Functional Equivalence with the 10% UAW Performance Standard

ENDNOTES

1 Information on the Groundwater Withdrawal Category (GWC), the Biological Category (BC), or August Net Groundwater Depletion (August NGD) of subbasins can be found in the Sustainable Water Management Initiative Framework at <https://www.mass.gov/service-details/sustainable-water-management-initiative>, Information on specific subbasins can be found in the WMA Permitting Access Tool at <https://www.mass.gov/guides/sustainable-water-management-initiative-swmi-technical-resources>.

2 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).

Attachment A: Stillwater River Monitoring Plan



30 Shrewsbury Street
Holden, Massachusetts 01520
+1 (978) 679-1600

October 31, 2025

Linjun Yau
MassDEP Water Management Act Program
100 Cambridge Street, 8th Floor
Boston, MA 02114
linjun.yao@mass.gov

Stillwater River Monitoring Plan

Dear Ms. Yau:

On behalf of the Sterling Department of Public Works (Sterling DPW), Verdantas LLC (Verdantas) prepared the following stand-alone monitoring plan to address your September 8, 2025 e-mail request regarding our April 14, 2025 response to the Order to Complete dated November 15, 2024.

Monitoring Plan Overview and Schedule

Additional field data collection and analysis are needed to address the potential impacts of the Crowley Road Wellfield on the nearby Stillwater River, CFRs and associated fish and to identify the measures the Sterling DPW may take to minimize those potential impacts. The Sterling DPW proposes to conduct an investigation to evaluate water temperature, streamflow conditions, habitat availability, and utilization of spawning habitat in the area of influence in the Stillwater River.

The proposed investigation will consist of the following tasks:

1. Piezometer Installation and Monitoring
2. Instream Habitat Surveys
3. Redd¹ Surveys
4. Data Analysis and Reporting

The piezometer installation is anticipated to take place in early spring (ideally early March) of 2026 and data will be downloaded from the piezometers on a monthly basis until the end of the year. Four instream habitat surveys will take place in 2026 to coincide with the seasons i.e. spring, summer, fall, and winter. Redd surveys will be conducted in October and November. Survey and transducer data for the year will be summarized and presented to the DEP in an annual report with an anticipated delivery date of January 2027.

Monitoring activities in 2026 are intended to provide baseline stream and habitat conditions. It is anticipated that if suitable habitat is observed additional years of monitoring will take place after the Crowley Road Wellfield begins operation to assess impacts. Conditional approval by the DEP will be necessary prior to beginning wellfield operation. It is anticipated that monitoring plans for additional years will be the same as the proposed baseline monitoring, but changes to monitoring activities will be proposed, if necessary, in the annual report.

¹ A "redd" is the location selected by a female for laying eggs.

Stillwater River Monitoring Plan

October 31, 2025

Piezometer Installation and Monitoring

Piezometers with water temperature dataloggers will be installed at three riffle locations (see approximate locations on Figure 1) within the study reach. Water temperature dataloggers will be installed 6" above the stream bed and programmed to record data continuously at 1-hour intervals. Piezometers will be constructed of a 2-foot length of 1¼ inch screen with a 5-foot steel riser. The piezometers will be driven approximately 3 feet deep into the river bottom. Pressure transducers with dataloggers will be installed inside the piezometer to measure groundwater head and outside to measure surface water level.

Instream Habitat Surveys

Instream habitat surveys will be performed seasonally to quantify percent riffle habitat available within the study reach (Figure 1). In addition, substrate composition (zig-zag pebble count method) and sediment depth will be quantified within each riffle. One habitat survey will be performed each season, i.e. spring, summer, winter, and fall.

Redd Surveys

Two Redd surveys will be conducted, once in October and once in November, along the targeted study reach to quantify habitat use. Each Redd will be georeferenced and water depth recorded.

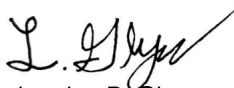
Data Analysis and Reporting

Data from these monitoring efforts will be analyzed to quantify natural variation in Stillwater River conditions to assess baseline conditions and the potential impacts of pumping on the Coldwater Fisheries Resource (habitat availability, quality, and use). Our observations and data will be presented and summarized in an annual report that we anticipate will be provided to DEP in January of 2027. The annual report will provide our recommendations for further monitoring.

Regarding wood turtle the pumping test report was submitted to NHESP for review and comment on the potential impact to the Wood Turtle. Their response is pending and will be provided to DEP when it is received. The NHESP initial review letter is included as Attachment B for review.

If you have any questions, please contact us at the numbers below.

Sincerely,
VERDANTAS LLC



Landon D. Glynn
Hydrogeologist III
(978) 506-5057



David G. Harwood, P.G., L.G.
Senior Hydrogeologist
(978) 506-5064



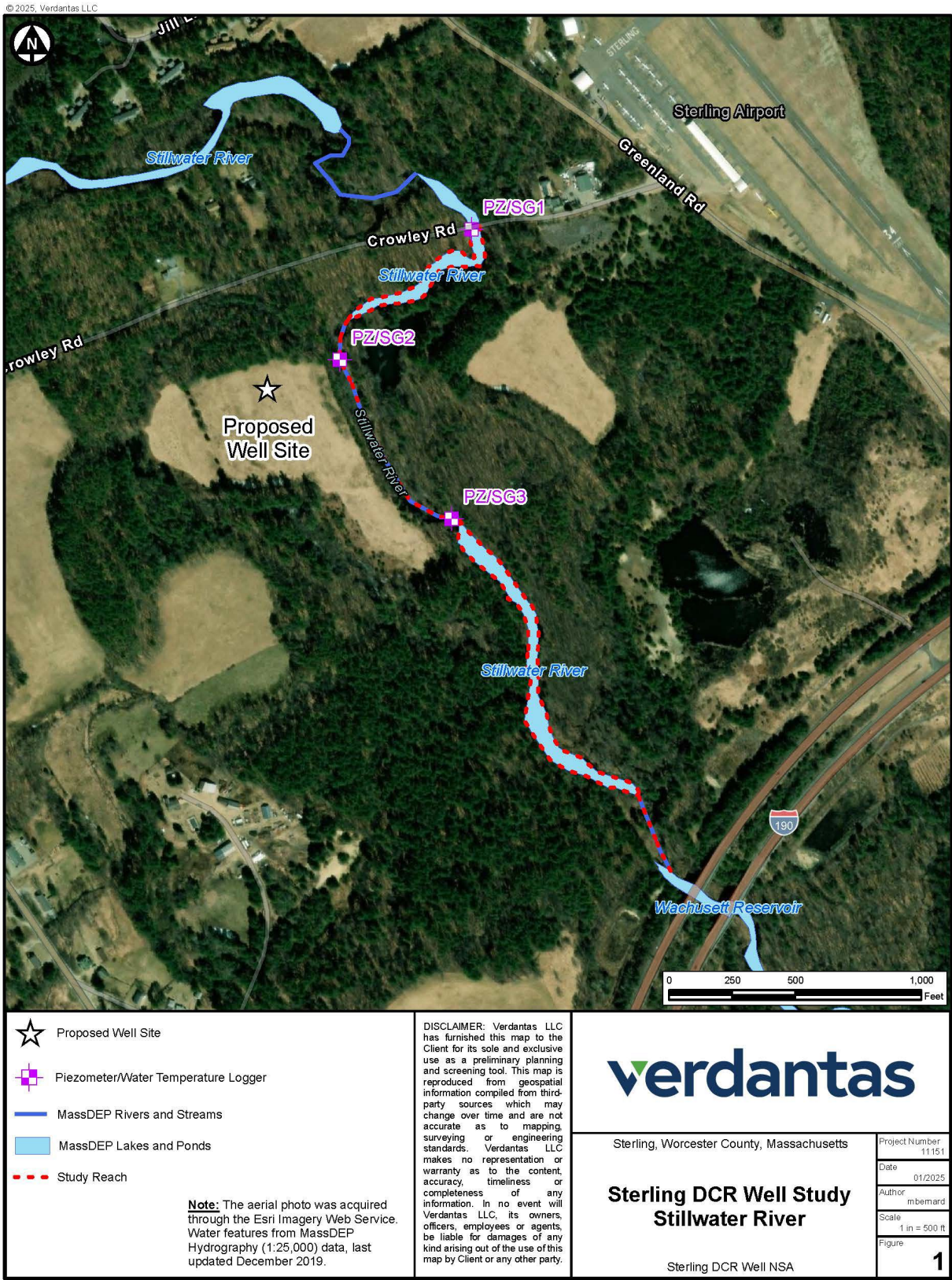
Stillwater River Monitoring Plan

October 31, 2025

CC: Ryan Mouradian, RMouradian@sterling-ma.gov

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

MassDEP will consider PWS 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 any Annual Statistical Report (ASR), 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) provide water saving devices such as faucet aerators and low flow shower heads at cost;
 - b) provide rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets), or
 - c) adopt and enforce 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) increasing block water rates or a seasonal water rates as a tool to encourage water conservation;
 - e) provide rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
 - f) adopt and enforce an ordinance, by-law or regulation to require that all new construction include water saving devices and low water use appliances;
 - g) adopt and enforce an ordinance, by-law or regulation to require all new construction to minimize lawn area and irrigated lawn area, maximize drought resistant landscaping, and maximize the use of topsoil with a high water retention rate;
 - h) encourage the use of cisterns or rain barrels for outside watering;
 - i) 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 measures, those must be included in the RGPCD plan for continued implementation, as well as implementation of at least one additional measure. The plan must include a public information component to inform customers of the plan and to encourage participation.

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 with the 10% Unaccounted for Water (UAW) 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 UAW 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 MassDEP.
4. Continued implementation will be a condition of the permit in place of meeting the 10% UAW performance standard.
5. Upon request of MassDEP, 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 MassDEP, 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.