Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

January 5, 2021

Hanson Board of Water Commissioners
1073 West Washington Street
Hanson, MA 02341

RE: Hanson – BRP/WMA
Hanson Water Department
PWS ID #4123000
Water Management Act Permit
Permit #9P425123.01

Dear Board Members,

Attached please find:

- Final Findings of Fact in support of the renewal of Permit #9P425123.01, and
- Final WMA Permit #9P425123.01for the Hanson Water Department.

The signature on this cover letter indicates formal issuance of the attached documents. If you have any questions regarding this information, please contact Jen D'Urso at (617) 654-6591 or via e-mail at jen.durso@state.ma.us.

Sincerely,

Duane LeVangie
Chief, Water Management Act Program
Bureau of Resource Protection

Y:\DWP Archive\SERO\2021\Hanson-4123000-WMA FINAL Permit 9P425123.01 2021-01-05

Ecc: Jerry Davis, Superintendent, Hanson Water Department
Tom Sexton, GZA GeoEnvironmental, Inc.
Patti Kellogg, MassDEP SERO
Anne Carrol, DCR OWR
Jen Pederson, MWWA
Julia Blatt and Sarah Bower, MA Rivers Alliance

Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY# MassRelay Service 1-800-439-2370.
http://www.mass.gov/eea/agencies/massdep/service/justice/ (Version 3.30.15)

1 English:

This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.

2 Español (Spanish):

Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, por favor póngase en contacto con el Director de Diversidad MassDEP a los números de teléfono que aparecen más abajo.

3 Português (Portuguese):

Este documento é importante e deve ser traduzida imediatamente. Se você precisa deste documento traduzido, por favor, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.

4(a) 中國（傳統）(Chinese (Traditional):

本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與MassDEP的多樣性總監聯繫。

4(b) 中国（简体中文）(Chinese (Simplified):

本文件非常重要，应立即翻译。如果您需要翻译这份文件，请用下面列出的电话号码与MassDEP的多样性总监联系。

5 Ayisyen (franse kreyòl) (Haitian) (French Creole):

Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.

6 Việt (Vietnamese):

Tài liệu này là rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc MassDEP đa dạng tại các số điện thoại được liệt kê dưới đây.

7 ប្រទេសកម្ពុជា (Kmer (Cambodian):

ឯកសារនេះគឺមានសារៈសំខាន់និងគួរត្រូវបានបកប្រែភ្លាម។ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងឆ្មោតជានាយក MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។

8 Kriolu Kabuverdianu (Cape Verdean):

Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.

9 Русский язык (Russian):

Этот документ является важным и должно быть переведено сразу. Если вам нужен этот документ переведенный, пожалуйста, свяжитесь с директором разнообразия MassDEP по адресу телефонных номеров, указанных ниже.

Communication For Non-English Speaking Parties - 310 CMR 1.03(5)(a)

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY# MassRelay Service 1-800-439-2370.
http://www.mass.gov/eea/agencies/massdep/service/justice/ (Version 3.30.15)

10 العربية (Arabic):
هذه الوثيقة الهامة وينبغي أن تترجم على الفور. اذا كنت بحاجة الى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في PMassDEعلى أرقام الهواتف المدرجة أدناه.

11 한국어 (Korean):
이 문서는 중요하고 즉시 번역해야합니다. 당신이 번역이 문서가 필요하면 아래의 전화 번호로 MassDEP의 다양성 감독에 문의하시기 바랍니다.

12 հայերեն (Armenian):
Այս փաստաթուղթը շատ կարեւոր է եւ պետք է թարգմանել անմիջապես. Եթե Ձեզ անհրաժեշտ է այս փաստաթուղթը թարգմանվել դիմել MassDEP բազմազանությունը տնօրեն է հեռախոսահամարների թվարկված են ստորեւ.

13 فارسی (Farsi (Persian):
این سند مهم است و باید فورا ترجمه شده است.
اگر شما نیاز به این سند ترجمه شده، لطفا با ما تماس تنوع مدیر PMassDE در شماره تلفن های ذکر شده در زیر.

14 Français (French):
Ce document est important et devrait être traduit immédiatement. Si vous avez besoin de ce document traduit, s'il vous plaît communiquer avec le directeur de la diversité MassDEP aux numéros de téléphone indiqués ci-dessous.

15 Deutsch (German):
Dieses Dokument ist wichtig und sollte sofort übersetzt werden. Wenn Sie dieses Dokument übersetzt benötigen, wenden Sie sich bitte Diversity Director MassDEP die in den unten aufgeführten Telefonnummern.

16 Ελληνική (Greek):
Το έγγραφο αυτό είναι σημαντικό και θα πρέπει να μεταφραστούν αμέσως. Αν χρειάζεστε αυτό το έγγραφο μεταφράζεται, παρακαλούμε επικοινωνήστε Diversity Director MassDEP κατά τους αριθμούς τηλεφώνου που αναγράφεται πιο κάτω.

17 Italiano (Italian):
Questo documento è importante e dovrebbe essere tradotto immediatamente. Se avete bisogno di questo documento tradotto, si prega di contattare la diversità Direttore di MassDEP ai numeri di telefono elencati di seguito.

18 Język Polski (Polish):
Dokument ten jest ważny i powinien być natychmiast przetłumaczone. Jeśli potrzebujesz tego dokumentu tłumaczone, prosimy o kontakt z Dyrektorem MassDEP w różnorodności na numery telefonów wymienionych poniżej.

19 **हिन्दी** (Hindi):
यह दस्तावेज महत्वपूर्ण है और तुरंत अनुवाद किया जाना चाहिए. आप अनुवाद इस दस्तावेज़ की जरूरत है, नीचे सूचीबद्ध फोन नंबरों पर MassDEP की विविधता निदेशक से संपर्क करें.

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

Findings of Fact in Support of Final Permit Issuance
Water Management Permit #9P425123.01
Town of Hanson

The Department of Environmental Protection (the Department) makes the following Findings of Fact in support of the attached Final Water Management Permit #9P425123.01, and includes herewith its reasons for issuing the Final Permit and for conditions of approval imposed, as required by M.G.L. c. 21G, § 11. The issuance of this permit is in response to a water withdrawal permit renewal application by the Town of Hanson, Water Department, (Hanson) for the purpose of public water supply.

Hanson operates four (4) permitted sources in the Taunton River Basin. Hanson was issued its initial Taunton River Water Management Permit on June 1, 1991, which was then amended on October 20, 2005 to increase the maximum daily withdrawal rate from the Crystal Spring Wellfield, without increasing the total authorized volume. Hanson's permit was further amended in April, 2008 to add the Pleasant Street Wellfield with no increase in the total authorized volume. In August of 2012, Hanson informed the MassDEP that the town was discontinuing further development of the proposed Pleasant Street well, due to an ongoing appeal that had not been resolved. At that time, MassDEP eliminated that source and its Zone II area from all of our databases.

On November 24, 2009, Hanson applied to MassDEP for a permit renewal in the Taunton River Basin. In February 2010, Hanson was issued an interim Water Management Act Permit that authorized the continued withdrawal of its previously permitted volume. On October 2, 2018, Hanson was issued a Permit Renewal Order to Complete (OTC) outlining specific information that was required to renew Hanson's permit. Hanson responded on January 2, 2019.

The Department adopted revised Water Management Regulations at 310 CMR 36.00 on November 7, 2014, (described in greater detail below). Since that time, the Department has been working closely with each Water Management Act (WMA) permittee to fully consider all aspects of their individual situations to ensure thoughtful and implementable permits.

<u>The Water Management Act (M.G.L. c. 21G)</u>
The Water Management Act (Act) requires the Department to issue permits that balance a variety of factors including without limitation:

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

- 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 Taunton 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;
    - mitigation of the impacts of increasing withdrawals.

Safe Yield in the Taunton 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 Taunton River Basin is 134.4 million gallons per day (MGD), and total registered and permitted withdrawals are 93.86 MGD. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Taunton River Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

Findings of Fact for Permit Conditions in Hanson'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 The volume authorized in this permit is unchanged from those included in the amended permit issued on October 20, 2005. The following summarizes how that volume was established and will be applied in Hanson's permit.

The Department of Conservation and Recreation's Office of Water Resources (DCR) developed draft demand projections for Hanson in the Taunton River Basin in September 2009. After several exchanges of information, final projections were issued on October 29, 2009. DCR projected a range of values for Hanson that identified potential demands from 0.75 MGD to 0.88 MGD. Hanson requested in its permit renewal application, and the Department has approved that request, to hold Hanson's total authorized withdrawal at 0.78 MGD.

TABLE 1: Summary of Hanson Water Department's WMA Authorizations	
WMA Authorization	**Volume Authorized**
WMA Permit #9P425123.01	0.27 MGD (598.55 MGY)
WMA Registration #42512301	0.51 MGD (186.15 MGY)
Total WMA Authorization	0.78 MGD (784.70 MGY)

In 2018, Hanson's average daily withdrawal from the Taunton River Basin was 0.62 MGD. If water needs are expected to exceed the maximum authorized in this permit and Hanson is meeting all of its permit conditions, Hanson may apply for additional volume at any time by submitting a new Water Management Permit application BRPWM03.

Special Condition 2, Maximum Daily Withdrawals from Groundwater Withdrawal Points, reflects the MassDEP-approved Zone II maximum daily pumping rate for each of Hanson's permitted wells based on prolonged pumping tests. Withdrawals in excess of these maximum daily rates require approval from the Department. This Permit does not include the Pleasant Street wells, whose development was discontinued in 2012.

Special Condition 3, Zone II Delineation requirements have been met and no further delineations are required as a condition of this permit.

Special Condition 4, Wellhead Protection requirements have been met and are up to date as of the issuance of this permit.

Special Condition 5, Residential Gallons per Capita Day (RGPCD) requires Hanson to meet 65 RGPCD. From 2012 to 2018, Hanson met the RGPCD requirement every year, with an average of 50 RGPCD.

Special Condition 6, Performance Standard for Unaccounted for Water (UAW) has not changed from the prior permit. The UAW required for all PWS permittees is 10%. Hanson's retired permit required them to complete an audit of their system every year Hanson was over the 10% performance standard. This was not done. In the renewed permit, Hanson will be required to meet the 10% standard for 2 out of every 3 years Based on previous non-compliance with this Performance Standard, Hanson shall be in compliance with Steps 1-4 of developing a Municipal Water Loss Control Program as part of their the functional equivalence requirements (Appendix B) by December 31, 2020.

Should Hanson not meet the 10% standard in 2019 they will be required to continue to follow the Functional Equivalence requirements.

2018	2017	2016
19%	10%	11%

Special Condition 7, Seasonal Limits on Nonessential Outdoor Water Use, includes revisions to your existing outdoor water use restriction requirement. The streamflow-triggered restrictions will continue to be determined by flows measured at USGS streamflow gage, #01108000, Taunton River near Bridgewater, MA. However, because Hanson's withdrawals are located in a subbasin (#24019) with an August net groundwater depletion of 25% or more (44%), Hanson will be required to implement more stringent water conservation requirements. Both the calendar option and the streamflow triggered option will allow nonessential outdoor watering outside the hours of 9 am – 5 pm up to 2 days per week from May 1 to September 30. Under both the calendar and streamflow trigger options, watering must be reduced to one day per week when the annual 7-day low-flow trigger of 47 cfs occurs. Watering by hand-held hoses is allowed, as is watering necessary for the core function of a business, to grow food and fiber, and other specific allowances. The town can always impose restrictions that are more stringent than the permit requires.

Special Condition 8, General Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the WRC in July 2018. (Details on the 2018 Massachusetts Water Conservation Standards | Mass.gov).

Prior Special Condition 9, Streamflow Monitoring, required Hanson to submit a Streamflow Monitoring Plan for Poor Meadow Brook that was first included in Hanson's permit in 2005 when the maximum daily withdrawal rate at the Crystal Spring Wellfield was increased. This plan was never submitted. After discussions with the Division of Ecological Restoration (DER), it was determined that streamflow monitoring should no longer be required. Efforts to control demand through nonessential use restrictions and other conservation activities have minimized peak daily demands, and average annual daily demands have not increase in Hanson. Efforts to control Hanson's high UAW are the focus of additional effort at this time and the former Special Condition 9 has been deleted.

Special Condition 9, 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, through optimization of groundwater source use, surface water releases to improve streamflow, outdoor water use restrictions and water conservation programs that go beyond standard Water Management permit requirements.

All 4 of Hanson's wells are located in the same subbasin (#24019) which has an August net groundwater depletion (NGD) of 43.6%. Based on Department records and information submitted by Hanson, the Department finds that minimization requirements will be met as follows:

- Hanson has no surface water supplies and, therefore, cannot make releases to improve streamflow.
- The limits on nonessential outdoor water use set forth in Special Condition 7 are restrictions developed to minimize withdrawals in August NGD subbasins.
- Hanson is currently undergoing a system-wide residential water meter replacement program with automated, remote read meters. Complete implementation of this program by December 31, 2020 is required.
- Hanson's Mandatory Water Use Restrictions by-law (Town of Hanson Water Division Regulations, Article 3-15, Water Supply Restriction, and General Bylaw Article 4-1) includes enforcement authority and establishes penalties for violations of the permit restrictions.
- Hanson will conduct a comprehensive water audit of the water system every five years, with the first audit to be completed by December 31, 2020.
- Hanson will develop and implement an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation by December 31, 2022.
- Hanson will increase its billing frequency to at least quarterly by December 31, 2022.
- On water bills, Hanson will provide customers with water consumption information in gallons and show consumption history, by December 31, 2022.

Special Condition 10, Mitigation of Impacts for Withdrawals that Exceed Baseline[1], requires mitigation of the impacts of withdrawals above the permittee's baseline by direct and/or indirect mitigation activities. Hanson's Baseline in the Taunton River Basin (0.72 MGD) is based on the average annual withdrawals made during 2003-2005 plus 5%.

The mitigation volume calculation below assumes that Hanson's future withdrawals will be discharged to on-site septic systems at the same rate (100%) as current water withdrawals. A "wastewater adjustment" is calculated for water withdrawn that is returned to the ground as wastewater within the same major basin. MassDEP will assume that 85% of water delivered to customers with septic systems will be returned to the ground within the same major basin as the withdrawal, thus reducing the amount of mitigation needed. After calculating the adjustment for authorized withdrawals over baseline that will be returned to groundwater through septic system discharge (Step 2 below), Hanson's total mitigation requirement is up to 9,000 gallons per day (Step 3 below).

Hanson's Mitigation Calculation
1. Permitted amount above Baseline = 0.06 MGD • Permitted amount above Baseline: 0.78 – 0.72 = 0.06 MGD
2. Adjustment for Wastewater Discharge to Local Groundwater = 0.051 MGD • 100% of increased withdrawals are delivered to areas with on-site septic systems: 0.06 MGD x 1.00 (100%) = 0.06 MGD • 85% of water delivered to areas with on-site septic systems returns to groundwater: 0.06 MGD x 0.85 (85%) = 0.051 MGD
3. Amount to be Mitigated after Adjustment for Wastewater Discharge to Local Groundwater = 0.009 MGD

[1] Baseline is the volume of water withdrawn in 2005 plus 5%, or the average volume withdrawn from 2003 to 2005 plus 5%, which is greater. Baseline cannot be less than the registered volume, and cannot be more than the authorized volume during the 2003-2005 period. For suppliers with authorizations in multiple major basins, baseline is computed for each basin and for the entire system.

- Permitted amount above baseline (0.06 MGD) – adjustment for wastewater discharge to local groundwater (0.051 MGD) = 0.009 MGD or 9,000 gallons per day

Direct Mitigation, which will improve streamflow as a result of increased groundwater recharge, decreased stormwater runoff to streams, or surface water releases, must be considered first in mitigation planning.

Hanson has no wastewater collection system, and therefore has no infiltration and inflow removal program that could provide streamflow benefits with repairs, no eligible stormwater projects completed since 2005, and no surface water sources from which to make releases to improve streamflow. Therefore, Hanson has not identified any direct mitigation opportunities at this time.

Indirect Mitigation, activities that result in environmental improvements that will help to compensate for streamflow impacts, are required when a permittee has insufficient direct mitigation credit. Hanson's mitigation need of 0.009 MGD (9,000 gpd) is met by its Wetlands Bylaw and Regulations.

Hanson's Mitigation Credit		
General Bylaw Article 3-13 Wetlands Protection Updated 10/89	1 credit for enforceability of the bylaw 1 credit for jurisdiction to resource areas "*whether or not they border surface waters"*	2 credits: 20,000 gpd

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

Special Condition 12, General Permit Requirements, contains conditions that pertain to all permittees.

Coldwater Fishery Resource (CFR) Protection requires permittees with withdrawals that may impact the streamflow of a CFR (identified on subbasin maps) to evaluate reducing impacts to CFRs through feasible optimization. There have been no CFRs identified in subbasin 24019 at this time that can be impacted by Hanson's Taunton basin sources. Therefore, this requirement is not part of Hanson's permit at this time.

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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Charles D. Baker
Governor

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Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

FINAL WATER WITHDRAWAL PERMIT RENEWAL
Permit #9P425123.01
Town of Hanson

This renewal of Permit #**9P425123.01** 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: 9P-4-25-123.01 **RIVER BASIN**: Taunton

PERMITTEE: Town of Hanson
Board of Selectmen
Town Hall, First Floor
542 Liberty Street
Hanson, MA 02341

EFFECTIVE DATE: January 5, 2021
EXPIRATION DATE: February 28, 2030

TYPE AND NUMBER OF WITHDRAWAL POINTS: Groundwater: 4 Surface Water: 0
USE: Public Water Supply
DAYS OF OPERATION: 365

AUTHORIZED WITHDRAWAL POINTS:

Table 1: Withdrawal Point Identification

Source Code	Source
4123000-01G	Crystal Springs Well
4123000-03G 4123000-04G 4123000-05G	Crystal Spring Wellfield

1. Maximum Authorized Annual Average Withdrawal

This permit authorizes the Town of Hanson to withdraw water from the Taunton River Basin at the rate described in Table 2 below. The permitted volumes are expressed both as an 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 outlined. 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 rates.

Table 2: Taunton River Authorized Withdrawal Rates

Permit Periods	Total Raw Water Withdrawal Volumes		Total Raw Water Withdrawal Volumes		Total Raw Water Withdrawal Volumes	
	Permit		Registration		Permit + Registration	
	Daily Average (MGD)	Total Annual(MGY)	Daily Average (MGD)	Total Annual(MGY)	Daily Average (MGD)	Total Annual(MGY)
1/5/2021 to 2/28/2025	0.27	98.55	0.51	186.15	0.78	284.7
3/1/2025 to 2/28/2030	0.27	98.55	0.51	186.15	0.78	284.7

2. Maximum Daily Withdrawals from Groundwater Withdrawal Points

Withdrawals from permitted groundwater sources are not to exceed the approved maximum daily rates listed in Table 3 below without advance written approval from the Department.

Table 3: Maximum Daily Withdrawal Rates from Authorized Groundwater Withdrawal Points

Source	Maximum Daily Rate
Crystal Springs Well, 4123000-01G	0.50 MGD
Crystal Spring Wellfield, 4123000-03G, 4123000-04G, 4123000-05G	Combined Maximum Daily Rate of 0.864 MGD

3. Zone II Delineation

Department records show that all of the Town of Hanson's sources have approved Zone II delineations, therefore, no further Zone II work is required.

4. Wellhead and Surface Water Protection

Department records show that Hanson has implemented municipal controls that comply with Wellhead Protection Regulations at 310 CMR 22.21(2).

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

The Town of Hanson's performance standard for residential gallons per capita day (RGPCD) is 65 gallons or less. Hanson shall be in compliance with this performance standard by December 31, 2020. If Hanson does not meet the standard, Hanson shall be in compliance with the functional equivalence requirements (Appendix A). Hanson shall report its RGPCD water use annually in its Annual Statistical Report (ASR).

6. Performance Standard for Unaccounted for Water

The Town of Hanson's Performance Standard for Unaccounted for Water (UAW) is 10% or less of overall water withdrawal for 2 of the most recent years 3 throughout the permit period. Based on previous non-compliance with this Performance Standard, Hanson shall be in compliance with Steps 1-4 of developing a Municipal Water Loss Control Program as part of their the functional equivalence requirements (Appendix B) by December 31, 2020.

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*.

Permittees meeting the Performance Standard for Unaccounted for Water through implementation of 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 suppliers.

7. **Seasonal Limits on Nonessential Outdoor Water Use**

Hanson shall limit nonessential outdoor water use through mandatory restrictions from May 1st through September 30th as outlined in Table 4 below. Hanson shall start implementing the seasonal limits on nonessential outdoor water use on May 1, 2020.

Hanson shall be responsible for tracking steamflow gages and drought advisories and recording and reporting when restrictions are implemented if triggered restrictions are implemented. See Table 3 *Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information.* Hanson shall also document compliance with the seasonal limits on nonessential outdoor water use annually in its Annual Statistical Report (ASR), and indicate whether it anticipates implementing calendar triggered restrictions or USGS monitoring well triggered restrictions during the next year.

Restricted Nonessential Outdoor Water Uses

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

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

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

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

Water uses NOT subject to mandatory restrictions are those required:

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

Public Notice of Seasonal Nonessential Outdoor Water Use Restrictions

Hanson shall notify its customers of the restrictions, including a detailed description of the restrictions and penalties for violating the restrictions. Notice that restrictions have been put in place shall be filed each year with the Department within 14 days of the restriction's effective date. Filing shall be in writing on the form "Notification of Water Use Restrictions" available on MassDEP website.

Table 4: 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	Nonessential outdoor water use is allowed: a) **Two (2) days per week** before 9 am and after 5 pm; **and** b) **one (1) day per week** before 9 am and after 5 pm when USGS stream gage 01108000 – Taunton River at Bridgewater, MA falls below **47 cfs** for three (3) consecutive days. Once streamflow triggered restrictions are implemented, they shall remain in place until streamflow at the gage meets or exceeds 47 cfs for seven (7) consecutive days.
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed: a) **Two (2) days per week** before 9 am and after 5 pm when USGS stream gage 01108000 – Taunton River at Bridgewater, MA falls below: • May 1 – June 30: **265 cfs** for three (3) consecutive days • July 1 – September 30: **119 cfs** for three (3) consecutive day**s** b) **one (1) day per week** before 9 am and after 5 pm when USGS stream gage 01108000 – Taunton River at Bridgewater, MA falls below **47 cfs** for three (3) consecutive days. Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.
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	Nonessential outdoor water use is allowed **one (1) day per week** before 9 am and after 5pm;
Streamflow Triggered Restrictions	Nonessential outdoor water use is allowed one **(1) day per week** before 9 am and after 5 pm when USGS stream gage 01108000 – Taunton River at Bridgewater, MA falls below: • May 1 – June 30: **265 cfs** for three (3) consecutive days • July 1 – September 30: **119 cfs** for three (3) consecutive days Once implemented, the restrictions shall remain in place until streamflow at the gage meets or exceeds the trigger streamflow for seven (7) consecutive days.

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

8. Water Conservation Requirements

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

Table 5: Minimum Water Conservation Requirements
Leak Detection
1. At a minimum, conduct a full leak detection survey every three years.
2. Conduct leak detection of the entire distribution system within one year whenever the percentage of UAW increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, submit to the Department a report detailing the survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
3. Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36.
4. Hanson shall have repair reports available for inspection by the Department. Hanson shall establish a schedule for repairing leaks that is at least as stringent as the following: o Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection. o Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible. o 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 Hanson's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Hanson 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. Hanson reports its system is 100% metered. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in AWWA Manual M6 – Water Meters.
3. Hanson 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. Hanson shall maintain a water pricing structure that includes the full cost of operating the water supply system. Hanson shall evaluate rates at a minimum every three to five years and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2. Hanson shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed by M.G.L. Chapter 40 Section 39L.
Residential and Public Sector Conservation
1. Hanson shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.

Table 5: Minimum Water Conservation Requirements
2. Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3. Hanson has reported that all municipally owned public buildings have been retrofitted with water saving devices (faucet aerators, low flow shower heads and low flow toilets). Hanson shall continue to ensure that water savings devices are installed in all municipal buildings as they are renovated, and shall ensure water conserving fixtures and landscaping practices are incorporating into the design of new municipal capital projects.
Industrial and Commercial Water Conservation
1. Hanson shall ensure water conservation practices in all development proposals, particularly low flow devices and water-wise landscaping practices.
Public Education and Outreach
1. Hanson shall continue to implement its water conservation and education efforts designed to educate the Town's water customers on ways to conserve water. Without limitation, Hanson's plan may include the following actions: o 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; o Public space advertising/media stories on successes (and failures); o Conservation information centers perhaps run jointly with electric or gas company; o Speakers for community organizations; o Public service announcements; radio/T.V./audio-visual presentations; o Joint advertising with hardware stores to promote conservation devices; o Use of civic and professional organization resources; o Special events such as Conservation Fairs; o Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and o Provide multilingual materials as needed.
2. Upon request of the Department, the Town of Hanson 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.

9. Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins

Hanson's minimization requirements will be met as follows:

- Hanson is currently undergoing a system-wide residential water meter replacement program with automated, remote read meters. Complete implementation of this program by December 31, 2021 is required.
- Hanson's Mandatory Water Use Restrictions by-law (Town of Hanson Water Division Regulations, Article 3-15, Water Supply Restriction, and General Bylaw Article 4-1) includes enforcement authority and establishes penalties for violations of the permit restrictions.
- Hanson will conduct a comprehensive water audit of the water system every five years, with the first audit to be completed by December 31, 2021.
- Hanson will use develop and implement an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation by December 31, 2022.
- Hanson will increase its billing frequency to at least quarterly by December 31, 2022.

- On water bills, Hanson will provide customers with water consumption information in gallons and show consumption history, by December 31, 2022.

Hanson shall notify MassDEP should there be changes to the status of the minimization measures.

10. Mitigation of Impacts for Withdrawals that Exceed Baseline

Hanson is required to mitigate 0.009 MGD (9,000 gpd) for its renewed permitted withdrawals over baseline in the Taunton River Basin. The Taunton River mitigation requirement of 0.009 MGD will be met with one Indirect Mitigation credit achieved through the implementation and enforceability of its Wetlands Bylaw.

Table 6: Hanson's Mitigation Credit

General Bylaw Article 3-13 Wetlands Protection Updated 10/89	1 credit for enforceability of the bylaw 1 credit for jurisdiction to resource areas "*whether or not they border surface waters"*	2 credits: 20,000 gpd

Hanson shall notify MassDEP should there be changes to the status of the mitigation measures.

11. Reporting Requirements

Hanson shall report annually as required by completing the electronic Annual Statistical Report (eASR) for public water suppliers, and shall provide other reporting as specified in the Special Conditions above.

12. 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 up to the authorized volume 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 MassDEP to enter and examine any property, inspect and monitor the withdrawal, and 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 MassDEP 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 MassDEP approves such transfer in writing, pursuant to a transfer application on forms provided by MassDEP requesting such approval and received by MassDEP at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.

6. Duty to Report The Permittee shall submit annually, on a form provided by MassDEP, a certified statement of the withdrawal. Such report is to be received by MassDEP by the date specified by MassDEP. Such report must be mailed or hand delivered to the address specified on the report form.

7. Duty to Maintain Records The Permittee shall be responsible for maintaining withdrawal records as specified by this permit.

8. Metering Withdrawal points shall be metered. Meters shall be calibrated annually. Meter shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

9. Amendment, Suspension or Termination The Department may amend, suspend or terminate this permit in accordance with M.G.L. c. 21G or 310 CMR 36.29.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of MassDEP. Any person aggrieved by this decision may request an adjudicatory hearing. Any such request must be made in writing, by certified mail and received by MassDEP within twenty-one (21) days of the date of receipt of this permit.

No request for an appeal of this permit shall be validly filed unless a copy of the request is sent 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 applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to MassDEP.

CONTENTS OF HEARING REQUEST

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of MassDEP is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of his permit.

FILING FEE AND ADDRESS

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of $100 must be mailed to:

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

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

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

Duane LeVangie
Chief, Water Management Act Program

1/5/2021
Date

Bureau of Water Resources

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 its 2018 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 top soil with a high water retention rate;
    h) the implementation of a program to encourage the use of cisterns or rain barrels for outside watering;
    i) the implementation of monthly or quarterly billing.
4. A schedule for implementation; and
5. An analysis of how the planned actions will address the specific circumstances that resulted in the failure to meet the performance standard.

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

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

If a RGPCD plan is required, the permittee must:

1. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD plan annually at the time it files its ASR, and

2. continue to implement the RGPCD plan until it complies with the performance standard and such compliance is documented in the permittee's ASR for the calendar year in which the standard is met.

Appendix B – Functional Equivalence with the 10% Unaccounted for Water (UAW) Performance Standard

Water Loss Control Program: 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 Water Loss Control Program in place that ensures best practices for controlling water loss.

Developing a Municipal Water Loss Control Program: A permittee who fails to document compliance with the 10% UAW performance standard for 2 out of the 3 years during the permit period, shall develop a Municipal Water Loss Control Program in accordance with the *AWWA M36 Water Audits and Loss Control Program*. Within 5 full calendar years of failing to meet the standard, the permittee shall:

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 as an attachment to the 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 component analysis and long-term program to reduce real and apparent water losses.
        i. 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.
        ii. 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. Submit the Municipal Water Loss Control Program that includes an M36 component analysis and implementation schedule, and identifies implementation funding to the Department.
4. Upon request of the Department, the permittee shall report on its implementation of the water loss control program.
5. Continued implementation of the Program will be required in order for the permittee to be considered functionally equivalent with the 10% UAW performance standard and in compliance with their permit.

A PWS permittee may choose to discontinue the Municipal Water Loss Control 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 Water Loss Control Program: If the permittee is required to develop a Water Loss Control Program in order to be to functionally equivalent with the 10% Unaccounted for Water Performance Standard, and the permittee has not developed a Municipal Water Loss Control Program that includes a component analysis and identifies implementation funding after 5 full calendar years of failing to meet the standard, the permittee will be required to implement the MassDEP UAW Water Loss Control Program measures outlined below:

- Complete an annual water audit and leak detection survey, as described in the AWWA M36 Manual, for 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.
- Review the permittee's water pricing structure and ensure revenues are 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 Water Loss Control Program 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 Program.

MassDEP will review a permittee's detailed, written analysis to determine whether unique circumstances make specific water loss control measures less cost-effective than alternatives, or infeasible for the permittee.