



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

Matthew A. Beaton  
Secretary

Martin Suuberg  
Commissioner

**FINAL**

March 6, 2017

Olde Barnstable Fairgrounds Golf Course  
Attention: Bruce McIntyre  
P.O.Box 68, 1460 Route 149  
Marstons Mills, MA 02648

Town: Barnstable  
Program: Water Management Act (WMA)  
WMA Permit: #9P-4-22-020.05  
Action: Final Permit

Dear Mr. McIntyre:

Please find the following attached:

- FINAL Findings of Fact in Support of the renewal of permit #9P-4-22-020.05; and,
- FINAL Water Management Act Permit #9P-4-22-020.05 for the Olde Barnstable Fairgrounds Golf Course.

If you have any questions regarding this information, please contact Shi Chen at (617) 292-5532 or via e-mail at [shi.chen@state.ma.us](mailto:shi.chen@state.ma.us).

Sincerely,

Rebecca Weidman  
Division of Watershed Management  
Bureau of Water Resources

ecc: Tom Crambareri, Cape Cod Commission

Y:\DWPARCHIVE\SERO\2017\Barnstable-Olde Barnstable Fairgrounds GC-9P42202005-WMA Final Permit  
Renewal-2017-03-06

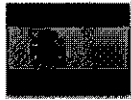


**Massachusetts Department of Environmental Protection**  
**One Winter Street, Boston MA 02108 • Phone: 617-292-5751**  
**Communication For Non-English Speaking Parties - 310**  
CMR 1.03(5)(a)



**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，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.*



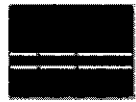
**6 Việt (Vietnamese):**

*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។ ប្រសិនបើអ្នកត្រូវបានបកប្រែឯកសារនេះសូមទំនាក់ទំនងភ្នាក់ងារជាតំណាងរបស់ 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.*



**10 العربية (Arabic):**

*هذه الوثيقة الهامة وينبغي أن تترجم على الفور. إذا كنت بحاجة إلى هذه الوثيقة المترجمة، يرجى الاتصال مدير التنوع في MassDEP على أرقام الهواتف المدرجة أدناه.*



**11 한국어 (Korean):**

*이 문서는 중요하고 즉시 번역해야 합니다. 당신이 번역이 문서가 필요하다면 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 բարձրագույնությունը տնօրեն է հեռախոսահամարների թվարկված են ստորև.*



**13 فارسی (Farsi (Persian)):**

*این سند مهم است و باید فوراً ترجمه شده است. اگر شما نیاز به این سند ترجمه شده، لطفاً با ما تماس تنوع مدیر MassDEP 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 दस्तावेज की जरूरत है, नीचे सूचीबद्ध फोन नंबरों पर MassDEP की विविधता निदेशक से संपर्क करें.*



# Department of Environmental Protection

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

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Matthew A. Beaton  
Secretary

Martin Suuberg  
Commissioner

## **Findings of Fact in Support of FINAL Water Management Permit #9P-4-22-020.05 Olde Barnstable Fairgrounds Golf Course**

The Department of Environmental Protection (“MassDEP” or “the Department”) makes the following Findings of Fact in support of the attached Final Water Management Permit #9P42202005, and includes herewith its reasons for issuing the Final Permit and for conditions of approval imposed, as required by M.G.L. c.21G, s. 11. The issuance of this permit is in response to a water withdrawal permit renewal application by the Olde Barnstable Fairgrounds Golf Course for the purpose of golf course irrigation.

**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 and ensure thoughtful and implementable permits.**

### **Olde Barnstable Fairgrounds Golf Course Water Withdrawal History**

The Olde Barnstable Fairgrounds Golf Course is an 18-hole golf course located in the Marstons Mills village of Barnstable, Massachusetts. Olde Barnstable Fairgrounds Golf Course was first issued a Water Management Act permit in January 31, 1992 for its withdrawal from two irrigation wells in the Cape Cod Basin at a rate of 75.6 million gallons over 270 days, or 0.28 million gallons per day (MGD). MassDEP conducted a 5 Year Review of the permit on 2003 and reduced the authorized annual withdrawal volume to 27 million gallons over 214 days, or 0.13 MGD based on review of the irrigation data from 1992 through 2002. Olde Barnstable Fairgrounds Golf Course has reported annual withdrawals below their permitted volume from 2011 to 2015. The average daily withdrawal volume for the Olde Barnstable Fairgrounds Golf Course in 2015 was 0.12 MGD.

### **The Permit Extensions**

Olde Barnstable Fairgrounds Golf Course’s WMA permit was initially issued on January 31, 1992 and was set to expire on November 30, 2010. The Permit Extension Act (PEA), 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 Cape Cod basin were extended to November 30, 2014. The Department

accepted a renewal application from the Olde Barnstable Fairgrounds Golf Course on August 25, 2010. The Department published notice of the permit renewal application in the Environmental Monitor on September 22, 2010. No comments were received.

In addition, in a letter of November 24, 2014, the Department informed the Olde Barnstable Fairgrounds Golf Course that the Department would need additional time before making a determination on the application in order to ensure that all permit renewal applicants in the Cape Cod Basin 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), Olde Barnstable Fairgrounds Golf Course's permit continues in force and effect until the Department issues a final decision on the permit renewal application.

The expiration date for all permits going forward in the Cape Cod Basin will be November 30, 2030, in order to restore the staggered permitting schedule set forth in the regulations.

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

The WMA requires the Department to issue permits that balance a variety of factors including without limitation:

- Impact of the withdrawal on other water sources;
- Water available within the safe yield of the water source;
- Reasonable protection of existing water uses, land values, investments and enterprises;
- Proposed use of the water and other existing or projected uses of water from the water source;
- Municipal and Massachusetts Water Resources Commission (WRC) water resource management plans;
- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, flood plains; and
- Reasonable economic development and job creation.

### **Water Management Regulation Revisions**

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

On November 7, 2014, the Department adopted revised Water Management Regulations at 310 CMR 36.00 that incorporate elements of the SWMI framework and the Water Conservation Standards adopted by the Massachusetts WRC. The regulations reflect a carefully developed

balance to protect the health of Massachusetts' water bodies while meeting the needs of businesses and communities for water.

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

- Safe yield determinations for the major river basins based on a new methodology developed through SWMI (see the Safe Yield in the South Coastal Basin section of this document);
- 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; and

### **Safe Yield in the Cape Cod 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 Cape Cod Basin is 266 million gallons per day (MGD), and total registered and permitted withdrawals are 51.87 MGD, leaving 214.13 MGD potentially available. The maximum withdrawals that will be authorized in this permit, and all other permits currently under review by the Department within the Cape Cod Basin, will be within the safe yield and may be further conditioned as outlined in the regulations.

### **Findings of Fact for Permit Conditions in Olde Barnstable Fairgrounds Golf Course's Water Management Act Permit**

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

**Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume,** reflects the permitted withdrawal volume of 0.13 million gallons per day (MGD) over a 214 days seasonal period through November 30, 2030 for a total of 27 million gallons per year.

**Special Condition 2, Maximum Authorized Daily Withdrawal From Withdrawal Points,** reflects the volume of groundwater withdrawal expressed as a maximum daily rate for the irrigation wells included in the permit. Withdrawals in excess of these maximum daily rates require approval from the Department.

**Special Condition 3, Water Conservation Requirements** The Olde Barnstable Fairgrounds Golf Course Water Conservation Methods Update, submitted as part of its responses to the Order to Complete, has been combined with the Best Management Practices that Olde Barnstable indicated as being implemented (according to the attached Seasonal Demand Management Plan). This combination constitutes the water conservation requirements of the renewed permit.

#### **Special Condition 4, Seasonal Demand Management Plan**

Consistent with good water conservation practices, permitted golf courses will be required to implement a drought triggered Seasonal Demand Management Plan (SDMP) as a condition of their Water Management Permit. The SDMP, at a minimum, restricts nonessential outdoor water use between May 1<sup>st</sup> and September 30<sup>th</sup> when the Massachusetts Drought Management Task Force declares a drought level of “Advisory” or higher (“Watch, Warning or Emergency”) for the region in which the golf course is located.

The SDMP shall also be implemented at times when groundwater level falls below a designated groundwater trigger measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) groundwater gage from May 1st through September 30th. At a minimum, restrictions shall commence when groundwater levels decline to or below the trigger for 60 consecutive days. The groundwater-triggered response actions shall be consistent with the drought-triggered response actions at the Advisory level. Once implemented, the restrictions shall remain in place until the daily value of the groundwater levels at the assigned USGS monitoring well have been recovered to less than the trigger for 30 consecutive days.

Olde Barnstable Fairgrounds Golf Course has been assigned the USGS monitoring well 414124070265901 (MA-SDW 253) in Sandwich, MA. Should the reliability of the SDW 253 monitoring well be so impaired as to question its accuracy, the Permittee may request MassDEP’s review and approval to transfer to another monitoring well to trigger restrictions. MassDEP reserves the right to require use of a different groundwater trigger.

Olde Barnstable Fairgrounds Golf Course shall be responsible for tracking the Massachusetts Drought Management Task Force drought declarations and recording when drought-triggered restrictions are implemented. Olde Barnstable shall also be responsible for tracking groundwater levels and recording when groundwater-triggered restrictions are implemented. See the SDMP in Table 5 and attached USGS Groundwater Level instructions for tracking information.

The SDMP is intended to address the necessary minimums of acceptable demand management required as dry conditions begin to impact our environment from May through September. Of particular importance in developing your SDMP and in evaluating its effect on your golf course’s irrigation, is the recognition of nonessential outside water uses. MassDEP considers the irrigation of tees and greens as essential uses, but fairways and roughs less so.

Section C of the SDMP provides three options for water use reduction. Two options for water use reduction are in table format with the third option being an open-ended alternative approach. The Acres Table requires that you identify the number of acres you irrigate for tees and greens, fairways, roughs, landscaping and ornamentals, along with a percent reduction per unit area with worsening drought. The Time Table requires that you identify irrigation in timing reduction cycles.

As part of the Order to Complete (OTC) responses, Olde Barnstable submitted an SDMP using the Time Table reductions. MassDEP has accepted Olde Barnstable’s proposed SDMP and it is included as a condition of this renewed permit.



**Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals** requires mitigation of the impacts of withdrawals above the permittee's baseline, which is based on withdrawals made during 2003-2005. The calculated baseline withdrawal volume for Olde Barnstable Golf Course is 0.13 MGD, the authorized withdrawal volume for 2005. Mitigation is not required at this time because volumes greater than the baseline are not allocated by this permit. Should Olde Barnstable needs more than 0.13 MGD they will need a new permit and mitigation will be required if feasible.

**Minimization of Groundwater Withdrawal Impacts in Stressed Subbasins**, requires permittees with permitted groundwater sources in subbasins<sup>1</sup> with net groundwater depletion of 25% or more during August to minimize their withdrawal impacts on those subbasins to the greatest extent feasible.

Since Olde Barnstable's permitted sources are located in the Cape Cod Basin where August net groundwater depletion has not been established, they are not currently required to implement measures to minimize the withdrawal impact.

**Coldwater Fish Resource Protection** was incorporated into the Water Management Regulations in November 2014. Coldwater Fish Resource Protection is not a condition of this permit because Olde Barnstable's withdrawal do not impact any waters that MA Division of Fisheries and Wildlife has identified as supporting coldwater fish at this time.

---

<sup>1</sup> 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).



# Department of Environmental Protection

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

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Matthew A. Beaton  
Secretary

Martin Suuberg  
Commissioner

## FINAL WATER WITHDRAWAL PERMIT #9P42202005 Olde Barnstable Fairgrounds Golf Course

This renewal of Permit #9P42202005 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-4-22-020.05

**RIVER BASIN:** Cape Cod

**PERMITTEE:** Olde Barnstable Fairgrounds Golf Course

**EFFECTIVE DATE:** March 6, 2017

**EXPIRATION DATE:** November 30, 2030

**NUMBER OF WITHDRAWAL POINTS:** 2  
Groundwater: 2

**USE:** Golf Course Irrigation

**DAYS OF OPERATION:** 214

### LOCATION(S):

Source	Latitude	Longitude	Location
Well #1	41° 40' 52.5"	70° 23' 58"	Rte.149 & Race Lane, Barnstable
Well #2	41° 40' 49.9"	70° 23' 51.2"	Rte.149 & Race Lane, Barnstable

**SPECIAL CONDITIONS**

**1. Maximum Authorized Annual Average Withdrawal Volume**

This Permit authorizes Olde Barnstable Fairgrounds Golf Course to withdraw water from the Cape Cod Basin at the rate described below (Table 1). The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY).

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

**Table 1: Maximum Authorized Annual Average Withdrawal Volumes**

5-Year Periods	Total Water Withdrawal Volumes	
	Daily Average (MGD)	Total Annual (MGY)
03/06/2017 to 11/30/2020	0.13	27.0
12/1/2020 to 11/30/2025	0.13	27.0
12/1/2025 to 11/30/2030	0.13	27.0

**2. Maximum Authorized Daily Withdrawals From Withdrawal Points**

Withdrawals from withdrawal points are not to exceed the approved maximum daily volumes listed below (Table 2) without specific advance written approval from MassDEP.

**Table 2: Maximum Daily Withdrawal Volumes**

Source	Maximum Daily Rate
Well #1	0.58 MGD
Well #2	0.43 MGD

**3. Water Conservation Requirements**

The Olde Barnstable Fairgrounds Golf Course Water Conservation Methods Update, submitted as part of its responses to the Order to Complete (OTC), has been combined with the Best Management Practices that Olde Barnstable Fairgrounds Golf Course indicated as being implemented (according to the attached Seasonal Demand Management Plan). This combination constitutes the water conservation requirements of the renewed permit.

**Table 3. Water Conservation Requirements**

a. Metering 100% of water use, and calibrating source meters annually.
b. Implementation of an irrigation system inspection and maintenance program that includes the following on a routine basis:

<ul style="list-style-type: none"><li>• Leak detection and repair: Daily monitoring of the golf course to insure no leaks throughout the system are present.</li><li>• Weekly Sprinkler head maintenance and replacement to ensure proper trajectory, pressure, and rotation</li><li>• Weekly cleaning or replacing clogged nozzles.</li></ul>
c. Use of a computerized-control irrigation system that allows for irrigation of only those areas in need.
d. Use of portable soil moisture sensors and golf weather apps to increase the efficiency of the irrigation system
e. Irrigating in the early morning or evening hours when evaporation rates are at their lowest, to extent practicable to maintain the turf
f. Regular aerating of turf to increase the percolation of water into the soil
g. Use of mulch materials in planting beds to improve water-holding capacity of the landscaping
h. Use of environmentally safe wetting agents to improve water infiltration and minimize evaporation
i. Use of low water use or native drought tolerant plants to the greatest extent practicable
j. Employee training in water conservation and management

#### 4. Seasonal Demand Management Plan

The Olde Barnstable Fairgrounds Golf Course shall limit nonessential outdoor water use through mandatory restrictions from May 1<sup>st</sup> through September 30<sup>th</sup> as outlined in the Seasonal Demand Management Plan (SDMP). At a minimum, restrictions shall commence when the Massachusetts Drought Management Task Force declares a drought level of “Advisory” or higher (“Watch, Warning or Emergency”) for the region in which the golf course is located.

The SDMP shall also be implemented at times when groundwater level falls below a designated groundwater trigger measured at an assigned, web-based, real-time U.S. Geologic Survey (USGS) groundwater gage from May 1<sup>st</sup> through September 30<sup>th</sup>. At a minimum, restrictions shall commence when groundwater levels decline to or below the trigger for 60 consecutive days. The groundwater-triggered response actions shall be consistent with the drought-triggered response actions at the Advisory level. Once implemented, the restrictions shall remain in place until the daily value of the groundwater levels at the assigned USGS monitoring well have been recovered to less than the trigger for 30 consecutive days.

Olde Barnstable Fairgrounds Golf Course has been assigned USGS monitoring Well 414124070265901 (MA-SDW 253) in Sandwich, MA. The water levels at the assigned USGS well are outlined below (Table 4).

**Table 4. Groundwater Trigger Values for Outdoor Water Use Restrictions**

USGS Monitoring Well 414124070265901 (SDW-253) in Sandwich, MA							
Monthly 25 <sup>th</sup> Percentile Trigger Values							
Month	March	April	May	June	July	August	Sept
Depth to water level feet below land surface	50.96	50.84	50.37	50.49	50.7	50.8	51.09

Olde Barnstable Fairgrounds Golf Course selected a time-reduction approach, which requires that the club reduces irrigation by time (Table 5).

**Table 5. Olde Barnstable Fairgrounds Golf Course Time-Reduction in its SDMP**

Massachusetts Drought Levels	Irrigating Less Volume as Drought Severity Increases Reduced Minutes in Irrigation Cycles							
	Action Levels	Irrigated Tees & Greens	Irrigated Fairways		Irrigated Roughs		Irrigated Landscape & Ornaments	
			Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)
Normal	Full cycle (100%)	Full cycle	20	Full cycle	15	100%	0	
Advisory†^	Full cycle	80%	16	50%	10	*		
Watch†	Full cycle	60%	12	*	XXX	*		
Warning†	Full cycle	40%	8	*	XXX	*		
Emergency**	TBD	TBD	TBD	*	XXX	*		

† Nonessential outdoor irrigation use shall not occur between the hours of 9 am and 5 pm, except that hand-watering of hot spots may occur at any time

^ Advisory-level reductions should also be implemented when the assigned groundwater trigger is hit

\* No irrigation allowed

\*\* Mitigation actions to be determined by the Governor's Emergency Proclamation.

**GENERAL PERMIT CONDITIONS (applicable to all Permittees)**

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

1. **Duty to Comply** The Permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The Permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The Permittee or the Permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property over which Permittee has authority, title or control, for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to M.G.L. c. 21G, §§ 15-17, M.G.L. c. 150, § 111, or any other enabling authority.
5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.33.
6. **Duty to Report** The Permittee shall submit annually, on a form provided by the Department, a certified statement of the withdrawal. Such report is to be received by the Department by the date specified by the Department. Such report must be submitted as specified on the report form.
7. **Duty to Maintain Records** The Permittee shall be responsible for maintaining withdrawal and all other records as specified by this permit.
8. **Metering** Withdrawal points shall be metered. Meters shall be calibrated annually. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.
9. **Right to Amend, Suspend or Terminate** The Department may amend, suspend or terminate the permit in accordance with M.G.L. c. 21G and 310 CMR 36.29.

### **APPEAL RIGHTS AND TIME LIMITS**

This permit is a decision of the Department. Any person aggrieved by this decision may request an adjudicatory hearing as described herein and in accordance with the procedures described at 310 CMR 36.37. Any such request must be made in writing, by certified mail or hand delivered and received by the Department within twenty-one (21) days of the date of receipt of this permit. The hearing request, including proof of payment of the filing fee, must be mailed to:

Case Administrator  
MassDEP Office of Appeals and Dispute Resolution  
One Winter Street  
Boston, MA 02108

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 the Department.

### **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 the Department 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 Department's fee transmittal form, 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

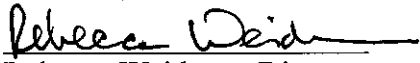
The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

### **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**

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department 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.



Rebecca Weidman, Director  
Division of Watershed Management  
Boston Office

3/6/17  
Date





**Massachusetts Department of Environmental Protection  
Bureau of Resource Protection – Water Management Act  
Program  
Seasonal Demand Management Plan  
For Permitted Water Management Golf Courses**

Olde Barnstable Golf  
Course  
Facility Name  
9P42202005  
Permit #  
Barnstable  
City or Town

**Plan Requirements**

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Permitted golf courses with irrigation sources under the Water Management Act (WMA) are required to implement a Seasonal Demand Management Plan (SDMP) at permit renewal that, at a minimum, reduces nonessential outdoor water use<sup>1</sup> based on the criteria below.

The SDMP must be consistent with the following when a "Drought Advisory" or greater level (i.e., Watch, Warning or Emergency) is declared by the Massachusetts Drought Management Task Force<sup>2</sup> (MDMTF) from May 1st to September 30th.

During a Drought Advisory or greater level, nonessential outdoor water use shall not occur between the hours of 9 am to 5 pm when evapotranspiration rates are highest. Hand-watering of hot spots may occur at anytime as necessary.

During a Drought Advisory or greater level, reductions are required in the irrigation (as applicable) of fairways and roughs consistent with those percentages outlined in Section C of this document.

During a Drought Emergency, should the Governor proclaim a state of Emergency, more stringent water use reductions may be required. At a minimum, all non-essential water use (including fairways and roughs) must cease.

Restrictions shall be based on the drought level for the MDMTF region where the golf course is located. Drought levels may be monitored at:  
<http://www.mass.gov/dcr/watersupply/rainfall/drought.htm>.

Golf course facility managers shall be responsible for tracking drought declarations and recording when restrictions are implemented.

Complete and return this document to your MassDEP Regional Office.

Should you have any questions, contact Duane LeVangie at 617-292-5706, or Tom LaMonte at 617-292-5532.

**A. Golf Facility Information**

Olde barnstable Fairgrounds Golf Course  
Facility Name  
Marstons Mills  
City/Town  
Bruce McIntyre  
Course Manager  
508-362-2606 x201      bruce.mcintyre@town  
Phone Number                      .barnstable.ma.us

<sup>1</sup> "Nonessential outside water use" means uses that are not required: (a) for health or safety reasons; (b) by regulation; (c) for the production of food and fiber; (d) for the maintenance of livestock; or (e) to meet the core functions of a business. Examples of nonessential outdoor water use includes: the irrigation of lawns or landscaping, washing vehicles, parking lots, driveways and/or sidewalks, etc.

Examples of essential water use not subject to restrictions are: irrigation to establish a new lawn during the months of May and September; irrigation for the production of food and fiber or the maintenance of livestock; irrigation by plant nurseries as necessary to maintain stock; Irrigation by golf courses as necessary to maintain greens and tees, and limited fairway watering; and irrigation of public parks and recreational fields.

<sup>2</sup> See Massachusetts Drought Management Task Force at <http://www.mass.gov/dcr/watersupply/rainfall/drought.htm>.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection – Water Management Act  
Program  
**Seasonal Demand Management Plan**  
**For Permitted Water Management Golf Courses**

Olde Barnstable Golf  
Course  
Facility Name  
9P42202005  
Permit #  
Barnstable  
City or Town

7/1/2015

Date

**B. Best Management Practices (BMPs)**

Check the following BMPs for water conservation and management that you implement.

- Yes     No    1. Water use is 100% metered.
- Yes     No    2. Source meters are regularly calibrated.
- Yes     No    3. New and existing irrigation ponds are lined with impervious material.
- Yes     No    4. Implementation of an irrigation system inspection and maintenance program that includes leak detection and repair, sprinkler head maintenance and replacement.
- Yes     No    5. Regular inspection of course to determine irrigation needs.
- Yes     No    6. Implementation of a Turf Management Plan.
- Yes     No    7. Use of soil sensors and/or soil samples to monitor soil moisture.
- Yes     No    8. Use of weather stations to generate irrigation cycles.
- Yes     No    9. Use of computer control irrigation system.
- Yes     No    10. Use of low trajectory sprinkler heads.
- Yes     No    11. Use of wetting agents.
- Yes     No    12. Use of drought tolerant grasses and shrubs.
- Yes     No    13. Regular aerating of turf to increase the percolation of water into the soil.
- Yes     No    14. Use of mulch materials in planting beds to improve water-holding capacity.
- Yes     No    15. Elimination of irrigation whenever possible, such as in rough areas.
- Yes     No    16. Limited ornamental watering.
- Yes     No    17. Employee training in water conservation and management.
- Yes     No    18. Raising turf height during dry weather and drought conditions.
- Yes     No    19. Reuse of wastewater and/or stormwater for irrigation.

Comment:



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Water Management Act  
 Program

**Seasonal Demand Management Plan**  
**For Permitted Water Management Golf Courses**

Olde Barnstable Golf  
 Course  
 Facility Name  
 9P42202005  
 Permit #  
 Barnstable  
 City or Town

**C. Seasonal Demand Management Approach for Water Use Reductions**

Demand management protocols frequently require more stringent water use reductions as the water supply availability worsens and triggers dictate when different responses are needed.

The two tables below reflect two approaches to indicate water use reductions. You may choose to complete (fill in the appropriate table) the Acres Table or the Time Table to reflect your water use reduction approach, or otherwise describe your specific water use reduction plan (Option 3). The Acres Table reduces water use by limiting the number of irrigated acres for fairways, roughs, and ornamentals. Notice the water use acreage percent reduction per unit area. The Time Table reduces irrigation by limiting the length of irrigation cycles.

Check and complete Option 1, 2 or 3.

Check box if choosing Option 1.

1. ACRES TABLE (Fill in number of acres in all blank cells)

Massachusetts Drought Levels	Watering Less Irrigated Acreage as Drought Severity Increases							
	Watering allowed up to designated percent							
	Irrigated Tees & Greens		Irrigated Fairways		Irrigated Roughs		Irrigated Landscape & Ornamentals	
Action Levels	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres
Normal	100%	7	100%	25	100%	50	100%	0
Advisory †	100%	XXX	80%	20	50%	25	*	XXX
Watch †	100%	XXX	60%	15	*	XXX	*	XXX
Warning †	100%	XXX	40%	10	*	XXX	*	XXX
Emergency **	TBD	TBD	TBD	TBD	*	XXX	*	XXX

† Nonessential outdoor irrigation use shall not occur between the hours of 9 am and 5 pm, except that hand-watering of hot spots may occur at any time

\* No irrigation allowed.

\*\* Mitigation actions to be determined by the Governor's Emergency Proclamation.



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Water Management Act  
 Program  
**Seasonal Demand Management Plan**  
**For Permitted Water Management Golf Courses**

Olde Barnstable Golf  
 Course  
 Facility Name  
 9P42202005  
 Permit #  
 Barnstable  
 City or Town

**C. Seasonal Demand Management Approach for Water Use Reductions**

Check box if choosing Option 2.

**2. TIME TABLE (Fill in time in minutes in all blank cells)**

Massachusetts Drought Levels	Irrigating Less Volume as Drought Severity Increases Reduced Minutes in Irrigation Cycles						
	Irrigated Tees & Greens	Irrigated Fairways		Irrigated Roughs		Irrigated Landscape & Ornaments	
		Percent	Time (min.)	Percent	Time (min.)	Percent	Time (min.)
Normal	Full cycle (100%)	Full cycle	20	Full Cycle	15	100%	0
Advisory †	Full cycle	80%	16	50%		*	
Watch †	Full cycle	60%	12	*	XXX	*	
Warning †	Full cycle	40%	8	*	XXX	*	
Emergency **	TBD	TBD	TBD	*	XXX	*	

- † Nonessential outdoor irrigation use shall not occur between the hours of 9 am and 5 pm, except that hand-watering of hot spots may occur at any time
- \* No irrigation allowed.
- \*\* Mitigation actions to be determined by the Governor's Emergency Proclamation.

Along with completing one of the tables, provide any additional description or narrative explanation as warranted on how your golf course plans to implement required irrigation reductions as drought conditions worsen. This could be through such practices as: limited rotation of sprinkler heads, limits on water pressure, limiting irrigation to hot spots, eliminate non-target watering, etc. (Attach additional pages as necessary.)

Check box if choosing Option 3.

**3. Alternative Approach**

The Department offers flexibility for equivalent irrigation use reductions. Golf courses that have developed an equivalent plan that quantifies real water use reductions by other means that can relate to the Massachusetts Drought Management Task Force action levels, may submit their plan for the Department's review and approval.

(Attach additional pages as necessary.)



**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection – Water Management Act**  
**Program**  
**Seasonal Demand Management Plan**  
**For Permitted Water Management Golf Courses**

Olde Barnstable Golf  
Course

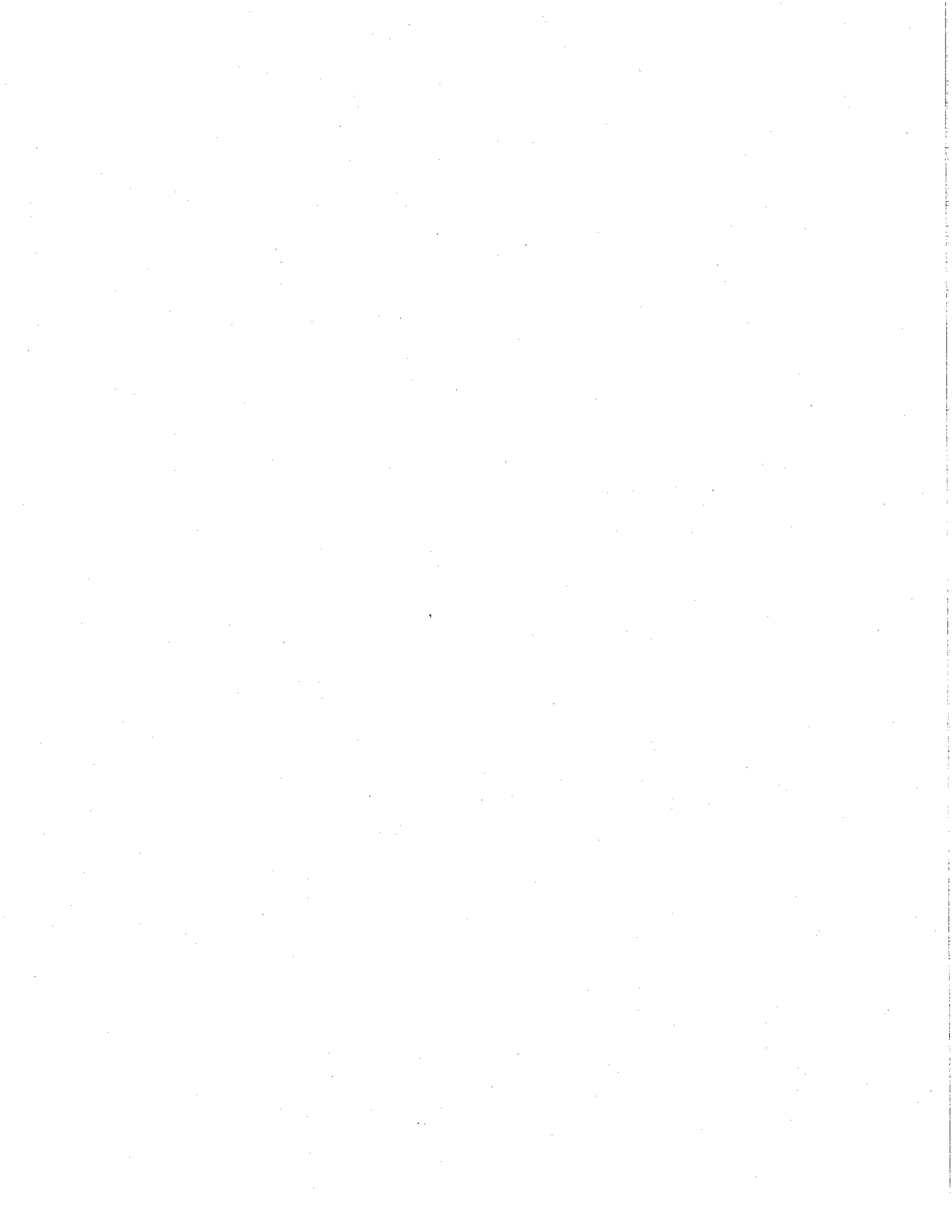
Facility Name

9P42202005

Permit #

Barnstable

City or Town



**Instructions for Accessing U.S. Geologic Survey Groundwater Level and Massachusetts Drought Advisory Website Information**

**Groundwater level information** is available at the USGS National Water Information System (NWIS): Web Interface. The USGS NWIS default shows Massachusetts groundwater levels in real time, i.e., the most recent, usually hourly, water level measured and recorded at each USGS monitoring well.

Seasonal Limits on Nonessential Outdoor Water Use are implemented when the daily mean depth to water level exceeds the designated trigger for 60 consecutive days (*i.e.*, when the depth to water becomes larger than the trigger value as the water table elevation declines). The daily water level is compared to the trigger for that month. To determine if restrictions must be implemented on May 1 it is necessary to monitor the daily water level in March and April.

**Mean daily groundwater level** readings are available at the USGS NWIS Web Interface at [http://waterdata.usgs.gov/ma/nwis/current/?type=gw&group\\_key=county\\_cd](http://waterdata.usgs.gov/ma/nwis/current/?type=gw&group_key=county_cd)

- Scroll down to 414124070265901 MA-SDW 253, Sandwich, MA.
- Click on the station number.
- On the pull-down menu "Available data for this site" choose "Daily data".
- Under "Available Parameters" click on "72019 Water level, depth L(Mean)".
- Under "Output Format" click on "Table" and enter the number of days of records (the default is 7 days; entering 60 will give you 60 days of data) and hit "GO".
- The table provides the "Daily Mean Depth to water level, feet below land surface" for the most recent number of days chosen.
- Compare each day's value to its month's trigger value (25<sup>th</sup> percentile) in your permit. Outdoor water use restrictions must be implemented when the daily depth to water level is at or below the trigger for 60 consecutive days.

**Drought Advisory** information is available at the Massachusetts Department of Conservation and Recreation (DCR) Drought Status Website at

<http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/drought-status.html>

- The color coded map displays the six drought regions in Massachusetts. Restrictions are implemented when a Drought Advisory, Watch, Warning or Emergency is announced through the DCR website.

