



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Central Regional Office, 627 Main Street, Worcester, MA 01608

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

February 2, 2009

Acton Water Supply District
Attn: Christopher D. Allen, Superintendent
P.O. Box 953
Acton, MA 01720-0953

Town: Acton
PWS Number: 2002000
WMA Permit #: 9P4-2-14-002.02
Program: Water Management Act
Action: Water Management Act Permit
& 5 Year Review

Dear Mr. Allen:

Please find the attached documents:

- Findings of Fact in Support of the Amended Permit Decision; and
- Water Management Act Permit 9P4-2-14-002.02 (Concord Basin) issued to the Acton Water Supply District.

If you have any questions regarding the permit, please contact Susan Connors at (508) 767-2701, Barbara Kickham (508) 767-2724, or me at (508) 767-2827.

Sincerely,

Marielle Stone
Section Chief
Drinking Water Program

Cc: Acton Water Commissioners, P.O. Box 953, Acton, MA 01720
Duane LeVangie, MassDEP-WMA-Boston
Bruce Bouck, MassDEP-DWP-Boston
Catherine Hamilton, MassDEP-DWP-Boston
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Alison Field-Juma, OAR, 9 Damonmill Square, Suite 1E, Concord, MA 01742
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MWWA (electronically)
MassDEP-CERO-Water Management Act File Copy
MassDEP-CERO-Drinking Water Program Correspondence Copy

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

English

This document is important and should be translated immediately.

Spanish

Este documento es importante y se debe traducir inmediatamente.

Portuguese

Este original é importante e deve ser traduzido imediatamente.

Italian

Questo documento è importante e dovrebbe essere tradotto immediatamente.

Greek

Αυτό το έγγραφο είναι σημαντικό και πρέπει να μεταφραστεί αμέσως.

French

Ce document est important et devrait être traduit immédiatement.

Chinese (traditional)

這個文件重要和應該立刻被翻譯。
这个文件重要和应该立刻被翻译。



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**Findings of Fact in Support of the Final Amended Permit Decision
& 5-Year Review
Water Management Permit 9P4-2-14-002.02**

The Massachusetts Department of Environmental Protection (MassDEP) has completed a review of the permit amendment application to add Assabet Well No.3 to the Acton Water Supply District's (Acton's) Water Management Act permit in the Concord River Basin pursuant to the Water Management Act (WMA), M.G.L. ch. 21G. MassDEP also conducted a 5 year compliance review to insure that the terms of the permit and the goals of the Water Management program are being met. In response to Acton's response to the Order to Complete issued June 21, 2007 and Acton's comments on the draft WMA permit issued December 16, 2008, MassDEP hereby issues the Water Management Act Permit #9P4-2-14-002.02 (the "Permit") in accordance with the Act. MassDEP makes the following Findings of Fact in support of the attached Permit, and includes herewith its reasons for approving the Permit and for conditions of approval imposed, as required by MGL c 21G, s 11 and 310 CMR 36.00.

Acton Water District's Water Withdrawal History

Acton holds a registration statement (2-14-002.03) for an average annual daily withdrawal volume of 1.56 million gallons per day (MGD) and includes twelve sources. Acton was issued a Water Management Act permit in April 1999 in order to add the Marshall wellfield, Kennedy wells, and Conant II wellfield as sources and to increase their total authorized withdrawal volume. The attached amended permit includes Assabet well No. 3 as an additional withdrawal location and does not authorize additional withdrawal volumes above that previously authorized. Acton is currently authorized through their permit and registration to withdraw 1.94 MGD through August 2011 and has reported annual withdrawals below their combined registered and permitted volume. Acton withdrew an average of 1.71 MGD in 2006 and 2007.

The Water Management Act

The Act requires that MassDEP issue permits that balance a variety of factors including:

- Reasonable protection of existing water uses, land values, investments and enterprises;
- 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.

MassDEP has determined that there is documented evidence that water withdrawals and an increase in development and impervious area, combined with the out-of-basin export of wastewater, substantially

contribute to low flow in the Commonwealth. These low flows impact the ability of rivers and tributaries to adequately serve all of the competing uses described in the Act.

To better achieve the balance of competing water uses mandated by the Act, MassDEP has adopted the “Water Management Policy for Permit and Permit Amendment Applications and 5-Year Reviews, Effective Date: April 2, 2004” and the “Guidance Document for Water Management Act Permitting Policy, Effective Date: January 17, 2006”. The Policy, WMA Policy #: BRP/ DWM/DW/P04-1, and Guidance, Guidance #BRP/DWM/DW/G05-01, can be found on MassDEP’s web site at <http://www.mass.gov/dep/water/laws/policies.htm#wmgt> under “Water Management Policies”. MassDEP further revised the policy in December 2007 to provide additional flexibility on water use restrictions for systems meeting the residential gallons per capita day (RGPCD) performance standard. The Policy and Guidance identify specific performance standards and conditions to be applied to new Water Management permits and to existing permits at the time they are amended, during 5-year permit review or permit renewal. MassDEP has applied these performance standards and conditions in Acton’s permit.

Findings of Fact for the Performance Standards in Acton’s Water Management Permit

As required by MGL c 21G, s 11 and 310 CMR 36.00, MassDEP makes the following Findings of Fact in support of the Permit, and includes herewith its reasons for approving the Permit and for imposing the conditions of approval.

In determining the performance standards in Water Management permits, MassDEP relies primarily upon the stressed basin determinations contained in the Water Resources Commission’s (WRC) Stressed Basins Report approved December 13, 2001, and upon future revisions to these stressed basin determinations by the WRC. The map of stressed basins can be reviewed at the following link: <http://www.mass.gov/dep/water/laws/policies.htm#wmgt> under “Water Management Policies”, Flow Stress Map. MassDEP also conducts reviews of other available research and reports by the United States Geological Survey, MassDEP’s Watershed Water Quality Assessment Reports and any other pertinent reports available for specific river basins.

Acton’s Kennedy and Marshal sources are located in the portion of the Concord River Basin that is identified as being under “high stress” based upon the United States Geological Survey (USGS) gage on Nashoba Brook near Acton (Station #01097300). The remaining sources are in an area identified as being under “medium stress” based upon the USGS gages on the Assabet River at Maynard (Station #01097000) and the Concord River in Lowell (Station #01099500). For systems with sources permitted in multiple basins or sub-basins with different levels of basin stress, MassDEP has determined that the performance standards required of the higher stress condition will be applied Town wide. The Policy and Guidance establish the following performance standards for all towns that withdraw water from high stressed river basins:

1. Residential gallons per capita day water use (RGPCD) of 65 gallons or less;
2. Unaccounted for water (UAW) of 10% or less;
3. Summer Limits on Withdrawals implemented through either a calendar trigger or a streamflow trigger; and
4. Offset Feasibility Studies for towns that exceed the baseline withdrawal volume (Baseline) established for each town.

The performance standards of 65 gallons per day or less for residential per capita water use and 10% or less for unaccounted for water are taken from the Water Resources Commission performance standards for effective water conservation for public water suppliers. MassDEP believes these standards are

reasonable based on studies and data developed throughout the country, the 1996 AWWA Leak Detection and Water Accountability Committee report on water accountability (AWWA Journal; July 1996; pp. 108-111), and the fact that the average values in 2007 for Massachusetts were 67 RGPCD, and 14% UAW. While these performance standards represent the minimum standards required for compliance with the Permit, MassDEP believes that they are reasonable standards for effective water conservation and that through the implementation of all the terms and conditions of Water Management permits, towns can exceed the performance standards for RGPCD and UAW.

Baseline withdrawal is the volume withdrawn in compliance with the Act during the calendar year 2005, the average volume withdrawn in compliance with the Act from 2003 to 2005, or the registered volume, whichever is highest. Acton's Baseline is 1.70 MGD, or 621.419 MGY, based on the 2005 withdrawal volume.

The Guidance, as revised on January 17, 2006, provides implementation and enforcement guidelines for permitting. It establishes:

- timeliness for compliance with the performance standards;
- procedures and requirements for towns that fail to document compliance with the performance standards within those timelines;
- enforcement margins and enforcement forbearance that MassDEP will employ for towns in high and medium stress basins.

For more information on enforcement margins and forbearance, see the Guidance Document for Water Management Act Permitting Policy, Section II, paragraph 3, and Section III, paragraph 3 (<http://www.mass.gov/dep/water/laws/policies.htm#wmgt>).

Finding of Fact for Special Permit Conditions

In issuing permits, MassDEP looks primarily at site-specific impacts and other issues specific to the system, such as impacts to nearby streams, wetlands, or other water users, justification of long-term demand projections and the capacity of permitted withdrawal points. The conditions are intended to ensure the efficient use of water and to mitigate the potential impact of withdrawals.

The permit issued in 1994 included a requirement for wetlands monitoring in the vicinity of the Marshall Wellfield and Kennedy Wells. Wetlands monitoring in the vicinity of the Conant II Wellfield was a requirement of the permit amended in 1999. The monitoring requirements for the Marshall Wellfield and Kennedy Wells were satisfied and removed from the 2002 modified permit because no impacts were identified. MassDEP has reviewed the water level monitoring reports submitted for the Conant II Wellfield for the years 1999 through 2008. The reports have indicated that since the commencement of pumping of the Conant II Wellfield in 1999 there have been no demonstrable impacts to hydrology in either the vernal pool or the wetland system. MassDEP is concluding that the water level monitoring conducted from 1999 to 2008 has sufficiently demonstrated that the Conant II Wellfield is not causing an adverse affect to the vernal pool or Bordering Vegetated Wetlands and that further wetlands monitoring is not necessary or required. These conditions have been removed from this modified permit.

Special Condition 1, Maximum Authorized Annual Average Withdrawal Volume, reflects the registered withdrawal volume of 1.56 MGD and a permitted increase of 0.38 MGD for a total authorized withdrawal of 1.94 MGD through August 2011. Continued water use above the 1.70 MGD Baseline for Acton will require offsets where identified if feasible. These volumes will be reviewed and revised as necessary at the time of permit renewal in 2011.

Special Condition 2, Maximum Authorized Daily Withdrawals from each Withdrawal Point, reflects the maximum daily withdrawal rates by source, according to MassDEP approved Zone II rates. The maximum daily withdrawal of the Conant II Wellfield was based on Acton's recommended operational plan provided with the original pumping test results. The Permit includes the maximum authorized daily withdrawal rate of 0.30 MGD for the Marshall Wellfield (2002000-09G), 0.54 MGD for the Kennedy Wells (2002000-10G through 2002000-13G), 0.216 MGD for the Conant II Wellfield (2002000-14G through 2002000-18G) and 0.518 MGD for Assabet #3.

Special Condition 3, Zone of Contribution Delineations, requirement has been met and no further delineations are required as a condition of this permit.

Special Condition 4, Water Supply Source Protection, specifies that the "Best Effort" requirement be met for the permitted sources. MassDEP records indicate that the Acton Water District is in compliance with MA Wellhead Protection requirements 310 CMR 22.21(2), for the Zone II areas for the existing wells located within the Town of Acton. Acton must satisfy MassDEP's "Best Effort" requirement for the revised Zone II of the Assabet Wells and with all towns into which their permitted wells Zone II areas extend. Acton's Zone II areas extend into the Towns of Boxborough, Carlisle, Concord and Westford. Acton Water District must demonstrate Best Effort to comply with MA Wellhead Protection requirements for the revised Zone II of Assabet Wells #1, 2 and 3 prior to activation of Assabet #3. Until each of the towns covered by Acton's Zone IIs passes Wellhead Protection requirements that satisfy the regulations, MassDEP' Best Effort requirement must be met for new source approval (including replacement wells); monitoring waiver applications; WMA water withdrawal permit reviews or amendments; Zone II re-delineations; and Sanitary Survey stipulations.

Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use, discussed previously. As reported in the 2007 Annual Statistical Report, the RGPCD for Acton was 63 gallons.

Special Condition 6, Performance Standard for Unaccounted for Water, discussed previously. As reported in the 2007 Annual Statistical Report, Acton's unaccounted-for-water was 12%.

Special Condition 7, Nonessential Outdoor Water Use, addresses limits on nonessential outside water use from May through September. Acton shall choose either calendar-triggered outdoor water restrictions between May 1st and September 30th each year or streamflow-triggered water restrictions that must be enforced whenever gaged mean daily streamflow falls below 0.50 cubic feet per second per square mile for 3 or more days. Acton may also choose to implement summer water restrictions that are stricter than those required in the permit.

Special Condition 8, Water Withdrawals that Exceed Baseline Withdrawal Volumes, discussed previously.

Special Condition 9, Requirement to Report Raw and Finished Water Volumes, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

Special Condition 10, Water Conservation Requirements, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the Water Resources Commission in July 2006.

The summary of permit conditions above as part of MassDEP's findings of fact is not intended to, and should not be construed as, modifying any of the Permit conditions. In the event of any ambiguity between the summary and the actual permit conditions, the Permit language shall be controlling.



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**WATER WITHDRAWAL PERMIT
 MGL C 21G**

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

PERMIT NUMBER: 9P4-2-14-002.02 **RIVER BASIN:** Concord

PERMITTEE: Acton Water Supply District

ISSUANCE DATE: July 7, 1994

AMENDMENT DATE: February 2, 2009

EXPIRATION DATE: August 31, 2011

NUMBER OF WITHDRAWAL POINTS: 11

Groundwater: 11 Surface Water: 0

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATION(S):

Table 1: Withdrawal Point Identification

Well Name	PWS Source ID Code(s)
Marshall Wellfield	2002000-09G
Kennedy Wells	2002000-10G through 2002000-13G
Conant II Wellfield	2002000-14G through 2002000-18G
Assabet Well #3	2002000-0BG*

* Source Code ID will be assigned when your source is approved to activate.

SPECIAL PERMIT CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This permit authorizes the Acton Water District (Acton) to withdraw water from the Concord River Basin at the rate described below in Table 2. The volume reflected by this rate is in addition to the 1.56 million gallons per day previously authorized to Acton under Water Management Act Registration #214002.03 for withdrawal from the Concord River Basin. 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) for each five-year period of the permit term.

The Department of Environmental Protection (MassDEP) bases these withdrawal volumes on the raw water withdrawn from the authorized withdrawal points, and will use the raw water amount to assess compliance with the registered and permitted withdrawal volumes. Acton’s baseline withdrawal for the purpose of triggering “Special Condition 8 Water Withdrawals that Exceed Baseline Withdrawal Volumes” is 621.419 MGY (1.70 MGD).

Table 2: Maximum Authorized Withdrawal Volumes

5-Year Periods		Total Raw Water Withdrawal Volumes			
		Permit		Permit + Registration	
		Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
Period One Years 1-5	7/7/1994 to 8/31/1996	0.27	98.55	1.83	667.95
Period Two Years 6-10	2/17/1998 to 8/31/2001	0.36	131.40	1.92	700.80
Period Three Years 11-15	9/1/2001 to 8/31/2006	0.37	135.05	1.93	704.45
Period Four Years 16-20	9/1/2006 to 8/31/2011	0.38	138.70	1.94	708.10

2. Maximum Authorized Daily Withdrawals from each Withdrawal Point

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below in Table 3 without specific advance written approval from MassDEP. The authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

Table 3: Withdrawal Point Identification

Well Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Marshall Wellfield	2002000-09G	0.30
Kennedy Wells	2002000-10G through 2002000-13G	0.54
Conant II Wellfield	2002000-14G through 2002000-18G	0.216
Assabet Well No. 3*	2002000-0BG	0.518

* Source Code ID will be assigned when your source is approved to activate. Rate will be assigned with final Zone II approval.

3. Zone of Contribution Delineations

MassDEP records indicate that Acton's permitted groundwater sources have approved Zone II delineations including Assabet Well #3. No further Zone II work is required as a condition of this permit.

4. Water Supply Source Protection

Acton Water Supply District must demonstrate its "Best Effort", as stated in 310 CMR 22.21(1)(d), in encouraging the towns of Acton and Concord to adopt land use controls, which meet the Drinking Water Regulations for wellhead compliance 310 CMR 22.21(2), for the revised Zone II of its Assabet Wells. Best effort letters and any changes to the map or final text of the control measures as adopted by the towns of Acton, Sudbury, and Concord must be submitted to the Wellhead Protection Program in Boston **before** AWS D receives final approval to place Assabet Well No. 3 online.

Contact the Town of Carlisle requesting protection of Acton's Zone II areas for the permitted wells that extend into that town. Provide to MassDEP copies of the letters within one year of the date of this permit. Although not required by this permit, MassDEP requests that you submit a letter to the town of Boxborough requesting protection of Acton's Zone II areas for the registered wells that extend into that town.

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

Acton's performance standard for residential gallons per capita day (RGPCD) is 65 gallons. Acton shall be in compliance with the performance standard by December 31, 2011. Acton shall report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this performance standard in its ASR for 2011 and each year thereafter.

Acton shall report its RGPCD and the calculation used to derive that figure as part of its ASR including, without limitation, the source of the data used to establish the service population and the year in which this data was developed. See Appendix A for additional information on the requirements if the performance standard for RGPCD is not met.

6. Performance Standard for Unaccounted for Water

Acton's performance standard for unaccounted for water (UAW) is 10% of overall water withdrawal. Acton shall be in compliance with the performance standard by December 31, 2011. Acton shall report its UAW annually in its Annual Statistical Report (ASR) and document compliance with this performance standard in its ASR for 2011 and each year thereafter.

Acton shall report its UAW and the calculation used to derive that figure as part of its ASR. See Appendix B for additional information on requirements if the performance standard for UAW is not met.

7. Nonessential Outdoor Water Use

Acton shall limit nonessential outdoor water use, as defined in Appendix C of this permit, during the summer months as outlined in Tables 4A and 4B below. Acton shall be prepared to implement and enforce the required restrictions starting no later than May 1, 2010, and shall document compliance with the limits on nonessential outdoor water use annually in its ASR for 2011, and each year thereafter. Acton shall be able to document the legal ability to implement and enforce mandatory water use restrictions. Nothing in this permit shall prevent Acton from implementing water use restrictions stricter than those set forth in this permit condition.

When RGPCD is below 65 for the previous year, Acton may continue to implement the restrictions and Best Management Practices that allowed Acton to achieve the performance standard. Additionally, Acton must implement MassDEP’s minimum restriction of no outdoor water use between 9 a.m. and 5 p.m. based on either the Calendar Option or the Streamflow Option in Table 4A. Further, if a Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force between May 1st and September 30th (See: <http://www.mass.gov/dcr/waterSupply/rainfall/drought.htm>), then no nonessential outdoor water use shall be allowed between 9 a.m. and 5 p.m. Restrictions must be implemented and remain in place until drought level is returned to “Normal”.

Table 4A: Limits on Nonessential Outdoor Water Use When RGPCD is 65 or Below (based on the previous year’s RGPCD as reported on the ASR and accepted by MassDEP)	
<p>Calendar Option For ease of implementation, communities with RGPCD below 65 may choose to implement calendar based restrictions that will be in place from May 1 through September 30.</p>	<p>Streamflow Option</p> <ul style="list-style-type: none"> • At a minimum, implement restrictions whenever stream flow falls below a mean daily streamflow of 0.50 cubic feet per second per square mile (cfsm) for three (3) consecutive days between May 1st and September 30th. • Stream flow shall be measured at the USGS River Gage #01097300, Nashoba Brook near Acton. At Gage 01097300, 0.50 cfsm is equal to 6.4 cubic feet per second (cfs). • Readings for Gage 01097300 can be accessed at: http://waterdata.usgs.gov/nwis/uv?01097300. • Once implemented, the restrictions shall remain in place until streamflow at Gage #01097300 meets or exceeds 0.50 cfsm (6.4 cfs) for seven (7) consecutive days. • See Appendix C for more detailed instructions on accessing mean daily streamflows.

When RGPCD is above 65 for the previous year, Acton must implement outdoor water use restrictions based on either the Calendar Option or the Streamflow Option in Table 4B, with MassDEP minimum restrictions of no outdoor water use between 9 a.m. and 5 p.m. Further, if a Drought Advisory or higher is declared by the Massachusetts Drought Management Task Force between May 1st and September 30th (See: <http://www.mass.gov/dcr/waterSupply/rainfall/drought.htm>), then no nonessential outdoor water use shall be allowed. Restrictions must be implemented and remain in place until drought level is returned to “Normal”.

Table 4B: Limits on Nonessential Outdoor Water Use When RGPCD is 65 or Above (based on the previous year’s RGPCD as reported on the ASR and accepted by MassDEP)	
<p>Calendar Option May 1 through September 30, nonessential outdoor water use allowed one day per week before 9 a.m. and after 5 p.m.</p>	<p>Streamflow Option</p> <ul style="list-style-type: none"> • No nonessential outdoor water use allowed whenever stream flow falls below a mean daily streamflow of 0.50 cubic feet per second per square mile (cfsm) for three (3) consecutive days between May 1st and September 30th. • Stream flow shall be measured at the USGS River Gage #01097300, Nashoba Brook near Acton. At Gage 01097300, 0.50 cfsm is equal to 6.4 cubic feet per second (cfs). • Readings for Gage 01097300 can be accessed at: http://waterdata.usgs.gov/nwis/uv?01097300. • Once implemented, the restrictions shall remain in place until streamflow at Gage #01097000 meets or exceeds 0.50 cfsm (57 cfs) for seven (7) consecutive days. • See Appendix C for more detailed instructions on accessing mean daily streamflows.

Calendar Option

If Acton chooses the Calendar Option, then Acton shall notify its customers each year by April 15th of the restrictions and the consequences for failing to adhere to the restrictions. Notice must include:

- The need to limit water use, especially nonessential outdoor water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
- Ways individual homeowners can limit water use, especially nonessential outdoor water use;
- 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 MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the Water Use Restrictions Form at: <http://www.mass.gov/dep/water/approvals/wmgforms.htm#conserve>.

Streamflow Option

If Acton chooses the Streamflow Option, when streamflow falls below 0.50 cfs (6.4 cfs) at USGS Gage 01097300 for three (3) consecutive days, Acton shall notify its customers as soon as possible, and in any event no more than three days after implementation, of the restrictions and the consequences for failing to adhere to the restrictions. Notice must include:

- The streamflow value triggering the required notification;
- The need to limit water use, especially nonessential outdoor water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
- Ways individual homeowners can limit water use, especially nonessential outdoor water use;
- A detailed description of the restrictions and penalties for violating the restrictions.

Notice that restrictions have been put in place shall be filed with MassDEP within 14 days of the restriction's effective date. Filing shall be in writing on the Water Use Restrictions Form at: <http://www.mass.gov/dep/water/approvals/wmgforms.htm#conserve>.

Notice to customers and MassDEP need not be provided if Acton has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

Should the reliability of flow measurement at Gage 01097300 be so impaired as to question its accuracy, Acton may request MassDEP's review and approval for the trigger mechanism to be transferred to another gage. MassDEP reserves the right to require use of a different gage.

8. Water Withdrawals that Exceed Baseline Withdrawal Volumes

Acton's baseline withdrawal volume (Baseline) is 621.419 MGY (1.70 MGD), the 2005 annual withdrawal volume. Acton shall perform an Offset Feasibility Study the first time its water withdrawals for a calendar year exceed its Baseline, beginning with calendar year 2011. Acton shall report its water withdrawal volumes annually in its ASR.

If Acton is required to perform an Offset Feasibility Study (Study), Acton shall:

- Within 60 days of the filing of an ASR indicating that a Study is required, submit a Study Scope of Work to MassDEP for approval;
- Within 6 months of MassDEP's approval of the Study Scope of Work, submit the completed Study to MassDEP for approval;
- MassDEP's approval of the Study Scope of Work and the completed Study will be presumed if MassDEP does not issue a written approval or denial of such submission within 60 days of the date submitted to MassDEP for approval.

If Acton files a subsequent ASR indicating that withdrawals for a calendar year again have exceeded its Baseline, then Acton shall:

- Implement the results of the Study;
- Document such implementation annually at the time it files its ASR; and
- Continue to implement the results of the Study as long as withdrawals exceed Baseline.

9. Requirement to Report Raw and Finished Water Volumes

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

10. Water Conservation Requirements

At a minimum, Acton shall implement the following conservation measures forthwith and shall be in compliance with these measures on or before August 31, 2011. MassDEP recognizes that Acton is currently implementing a number of these requirements. Compliance with the water conservation requirements shall be reported to MassDEP upon request or by August 31, 2011, the date of the renewal of the permit, unless otherwise noted below.

Table 5: Minimum Water Conservation Requirements
System Water Audits and Leak Detection
1. At a minimum, conduct a full leak detection survey every three years. The first full leak detection survey shall be completed no later than 3 yrs from the date of last documented leak detection survey.
2. Perform a leak detection survey of the entire distribution system within one year whenever the percentage of unaccounted for water 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, Acton shall submit to MassDEP for its review a report detailing the leak detection survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.
3. Conduct field surveys for leaks and repair programs in accordance with the <u>AWWA Manual 36</u> .
4. Acton shall have repair reports available for inspection by MassDEP. Acton shall establish a schedule for repairing leaks that is at least as stringent as the following: <ul style="list-style-type: none">- Leaks of 3 gallons per minute or more shall be repaired within 3 months of detection.- Leaks of less than 3 gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.- Leaks of less than 3 gallons per minute shall be repaired in a timely manner, but in no event more than 6 months from detection, except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway. Leaks shall be repaired in accordance with Acton's priority schedule including leaks up to the property line, curb stop or service meter, as applicable. Acton shall have water use regulations in place that require property owners to expeditiously repair leaks on their property.

Table 5 Continued: Minimum Water Conservation Requirements	
Metering	
1.	Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2.	Acton 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 <i>AWWA Manual M6 – Water Meters</i> , by the permit renewal date (August 31, 2011).
3.	Acton shall have an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by your 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 Acton’s annual water budget to calibrate, repair, or replace meters as necessary.
Pricing	
1.	Establish a water pricing structure that includes the full cost of operating the water supply system by the permit renewal date (August 31, 2011). Evaluate rates 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.	Acton 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.	Acton shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the Massachusetts Plumbing Code.
2.	Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
3.	Municipal buildings By January 1, 2010, submit an inventory of municipally owned public buildings in Acton’s service area. Identify a schedule to retrofit those which are not yet equipped with water saving devices (faucet aerators, low flow shower heads and low flow toilets) along with a proposed schedule to complete the retrofitting by January 1, 2012. This submission to the Town of Acton, copied to MassDEP, combined with subsequent updates, shall constitute “Best Effort” on the part of Acton. Municipally owned public buildings that may be scheduled for rehab or demolition after the January 1, 2012 deadline for completing the retrofits, may with MassDEP’s approval, be exempted from this condition based on the schedule of work.
Industrial and Commercial Water Conservation	
1.	Acton shall review the use records for its industrial, commercial and institutional water users and develop an inventory of the largest water users. Acton shall develop and implement, by the permit renewal date (August 31, 2011), an outreach program designed to inform and (where appropriate) work with its largest industrial, commercial and institutional water users on ways to reduce their water use. Such outreach plans can include, but are not limited to: information on water audits, meter sizing, water reuse, low-flow plumbing fixtures, mandatory outdoor water use restrictions, suggestions for contacting trade associations for process specific information on water use reductions, and information on contacting the Executive Office of Environmental Affairs Office of Technical Assistance for Toxics Use Reduction (OTA) which offers a range of assistance and information to help facilities improve water use efficiency and reduce wastewater discharge. OTA can be contacted at (617) 626-1060 or at www.mass.gov/envir/ota .

Table 5 Continued: Minimum Water Conservation Requirements	
Industrial and Commercial Water Conservation continued	
2.	Upon request by MassDEP, Acton shall report on industrial, commercial and institutional water conservation including the results of its review of water use records for industrial, commercial and institutional water users, the inventory of the largest water users, copies of any outreach materials distributed to industrial, commercial and institutional water users, and to the extent practical, a summary of water use reductions or savings that have resulted. Upon receipt of this report, MassDEP will take whatever action it deems appropriate to promote the interests of the Water Management Act, including without limitation requiring Acton to take additional actions to reduce industrial, commercial and institutional water use.
Lawn and Landscape	
1.	Review Acton's water use restrictions to determine if it provides authority to implement and enforce water use restrictions required by Special Condition #7. If it does not, adopt a water use restriction bylaw, ordinance or regulation by May 1, 2010, to implement the new restrictions.
Public Education and Outreach	
1.	Develop and implement a Water Conservation Education Plan. Acton's Water Conservation Education Plan shall be designed to educate Acton's water customers of ways to conserve water. Without limitation, Acton's plan may include the following actions: <ul style="list-style-type: none">• Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings;• Public space advertising/media stories on successes (and failures);• Conservation information centers perhaps run jointly with electric or gas company;• Speakers for community organizations;• Public service announcements; radio/T.V./audio-visual presentations;• Joint advertising with hardware stores to promote conservation devices;• Use of civic and professional organization resources;• Special events such as Conservation Fairs;• Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and• Make multilingual materials available as needed.
2.	Upon request of MassDEP, Acton 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.

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 MassDEP has received a renewal permit application pursuant to 310 CMR 36.00.

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of MassDEP to enter and examine any property for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by MassDEP pursuant to MGL c 21G ss 15-17, MGL c 150 ss 111, 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 complete and submit annually, on a form provided by MassDEP, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by MassDEP by the date specified on the form each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection
Drinking Water Program
Water Management Program
One Winter Street, 5th Floor
Boston, MA 02108

7. **Duty to Maintain Records** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
8. **Metering** All withdrawal points included within the permit shall be metered within one year of the date of issuance of the permit. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

APPEAL RIGHTS AND TIME LIMITS

This permit is a decision of MassDEP. Any person aggrieved by this decision may request an adjudicatory hearing under the provisions of MGL c 30A. 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 city or town in which the withdrawal point(s) 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 this 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 city or town (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.

Appendix A – Residential Gallons Per Capita Day

I. Compliance Plan Requirement

If Acton fails to document compliance with the RGPCD performance standard in its 2011 ASR, or in any ASR thereafter, then Acton must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall:

- a. meet the requirement set forth below in Section II;
- b. include measures to be implemented to meet the performance standard); and
- c. include the schedule for implementing such measures.

The filing of a RGPCD Plan shall not constitute a return to compliance, nor shall it affect MassDEP's authority to take action in response to Acton's failure to meet the performance standard.

If a RGPCD Plan is required, Acton must:

- a. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD Plan annually at the time it files its ASR; and
- b. continue to implement the RGPCD Plan until it complies with the performance standard and such compliance is documented in Acton's ASR for the calendar year in which the standard is met.

II. Contents of a Residential Gallons Per Capita Day Compliance Plan

At a minimum, all RGPCD Compliance Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the performance standard;
- b. analysis of the cause of the failure to meet the performance standard;
- c. description and schedule of the actions that will be taken to meet the performance standard; and
- d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

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 in paragraph above.

At a minimum, all RGPCD Plans for failure to meet the RGPCD performance standard must include implementation of at least one of the following residential conservation programs:

- 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, bylaw or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems.

If Acton 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.

Without limitation, RGPCD Plans for failure to meet the RGPCD performance standard may include the following actions in addition to those outlined in the paragraph above:

- a. the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;
- b. a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
- c. the adoption and enforcement of an ordinance, bylaw or regulation to require that all new construction include water saving devices and low water use appliances;
- d. the adoption and enforcement of an ordinance, bylaw 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;
- e. the implementation of a program to encourage the use of cisterns or rain barrels for outside watering; and
- f. the implementation of monthly or quarterly billing.

Appendix B – Unaccounted for Water

UAW is defined as the residual resulting from the total amount of water supplied to a distribution system as measured by master meters, minus the sum of all amounts of water measured by consumption meters in the distribution systems, and minus confidently estimated and documented amounts used for certain necessary purposes.

Examples of UAW include, but are not limited to: leakage, meter inaccuracies (unless they fall under the category of adjustment per results of source meter calibration described in the ASR), errors in estimation of stopped meters, unauthorized hydrant openings, illegal connections, data processing errors, and undocumented fire fighting uses.

Examples of uses that can be confidently estimated and documented in writing include storage tank overflow and drainage; water main flushing and flow testing; fire fighting; bleeding or blow-offs; sewer and stormwater system flushing; and cleaning and street cleaning. Generally, leakage is considered to be UAW, however, individual water main breaks can be discounted on a case-by-case basis. Any adjustment in the calculation of UAW made as a result of confidently estimated uses shall be documented as required in the ASR.

I. Compliance Plan Requirement

If Acton fails to document compliance with the UAW performance standard in its 2011 ASR, or in any ASR thereafter, then Acton must file with that ASR an Unaccounted for Water Compliance Plan (UAW Plan) which shall:

- a. meet the requirements set forth below in Section II;
- b. include measures to be implemented to meet the performance standard; and
- c. include the schedule for implementing such measures.

The filing of a UAW Plan shall not constitute a return to compliance, nor shall it affect MassDEP's authority to take action in response to Acton's failure to meet the performance standard.

If a UAW Plan is required, Acton must:

- a. submit information and supporting documentation sufficient to demonstrate compliance with its UAW Plan annually at the time it files its ASR; and
- b. continue to implement the UAW Plan until it complies with the performance standard and such compliance is documented in Acton's ASR for the calendar year in which the standard is met.

II. Contents of an Unaccounted for Water Compliance Plan

Acton has the choice to file a UAW Plan with measures tailored to the specific needs of its water supply system (Individualized UAW Plan) or a UAW Plan that includes Best Management Practices (BMP UAW Plan).

At a minimum, all UAW Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the applicable performance standard;
- b. analysis of the cause of the failure to meet the performance standard;
- c. description and schedule of the actions that will be taken to meet the performance standard; and
- d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

UAW Plans may be amended to revise the actions that will be taken to meet the performance standard. Amended UAW Plans must include the information set forth in the paragraph above.

Individualized UAW Compliance Plan

Without limitation, Individualized UAW Compliance Plans for failure to meet the UAW performance standard may include any of the actions set forth in the BMP UAW Compliance Plan below.

BMP UAW Compliance Plan

At a minimum, all BMP UAW Plans for failure to meet the UAW performance standard must include all of the following actions:

- a. within one year of filing the UAW Plan, complete a water audit and leak detection survey of the entire system and submit completed audit and survey to MassDEP;
- b. within one year of completing the audit and leak detection survey, conduct sufficient repairs to reduce by 75% (by water volume) all leaks detected in the survey; and
- c. within one year of completing such repairs, conduct additional repairs of leaks detected in the survey as may be necessary to reduce permittee's UAW to 10% or less;
- d. implementation of a program that ensures the inspection and evaluation of all water meters and, as appropriate, the repair, replacement and calibration of water meters in accordance with the following schedule:
 - Large Meters (2" or greater) - within one year of filing the BMP UAW Plan
 - Medium Meters (1" or greater and less than 2") - within two years of filing the BMP UAW Plan
 - Small Meters (less than 1") - within three years of filing the BMP UAW Plan
- e. implementation of monthly or quarterly billing within three years of filing the BMP UAW Plan; and
- f. within one year of filing the UAW Plan, implementation of a water pricing structure that achieves sufficient revenues to pay the full cost of operating the system including, without limitation, the costs of repairs under paragraph a., the costs of meter repairs, replacements and calibrations under paragraph b., the costs of employees and equipment, and ongoing maintenance and capital costs.

Appendix C – Nonessential Outdoor Water Use

I. Nonessential Outdoor Water Use

As stated in Special Condition 7, in Water Management Act permits, “nonessential outdoor water use” includes 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 (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).

Examples of **nonessential** outdoor water uses include:

- irrigation of lawns, via sprinklers or automatic irrigation systems; except by means of a hand-held hose outside the hours of 9AM and 5PM;
- washing of vehicles other than by means of a commercial car wash,; except as necessary for operator safety; and
- washing of exterior building surfaces, parking lots, driveways or sidewalks; except as necessary to apply paint, preservatives, stucco, pavement or cement.

Examples of **acceptable** outdoor water uses before 9 AM and after 5 PM include:

- irrigation to establish a new lawn during the months of May and September;
- irrigation by lawns, gardens, flowers, and ornamental plants via hand held hose only; and
- irrigation of public parks and recreational fields.

II. Accessing Mean Daily Streamflows for the Nashoba Brook Gauge Via the USGS Website

The USGS Streamflow website default shows Massachusetts streamflows in real time, i.e., the most recent periodic reading made at each USGS stream gauge. This real-time data can vary widely over the course of a day and is not used to trigger the Water Management Permit limits on Nonessential Outdoor Water Use.

To trigger the limits on Nonessential Outdoor Water Use, MassDEP relies on the mean daily streamflows. The mean daily cannot be calculated until after midnight each day when USGS computes the periodic data into a mean daily streamflow.

Go to <http://waterdata.usgs.gov/nwis/uv?01097300> for daily mean streamflow data at the Nashoba Brook Gage. Choose “Time-series: Daily Data” from the Available Data selection box. If you need assistance navigating the USGS web site to find the mean daily streamflow, contact Water Management Program staff at the MassDEP Boston Office at (617) 292-5706, or Water Management Act Program staff at the Central Regional Office at (508) 767-2701.