

**Commonwealth of Massachusetts**

**Executive Office of Environmental Affairs ■ MEPA Office**

**ENF**

**Environmental Notification Form**

*For Office Use Only*  
*Executive Office of Environmental Affairs*  
 EOEA No.: 13447  
 MEPA Analyst: Bill GAGE  
 Phone: 617-626-1025

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Jacques Wells #1 & #2 Water Treatment Facility Upgrade		
Street: 173 Main Street		
Municipality: Millbury	Watershed: Blackstone River	
Universal Transverse Mercator Coordinates:	Latitude: 42:11:55	Longitude: -71:46:15
Estimated commencement date: March 2005	Estimated completion date: July 2005	
Approximate cost: \$1,400,000	Status of project design: 50% complete	
Proponent: Aquarion Water Company of Massachusetts		
Street: 200 Cordwainer Drive, Suite 200		
Municipality: Norwell	State: MA	Zip Code: 02061
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Michelle DeSorcy		
Firm/Agency: Aquarion Water Co. of MA	Street: 24 Providence Street	
Municipality: Millbury	State: MA	Zip Code: 01527
Phone: (508)865-3998	Fax: (508) 865-1384	E-mail: mdesorcy@aquarionwater.com

- Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?  
 Yes  No
- Has this project been filed with MEPA before?  
 Yes (EOEA No. \_\_\_\_\_)  No
- Has any project on this site been filed with MEPA before?  
 Yes (EOEA No. 13039 )  No
- Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:
- A Single EIR? (see 301 CMR 11.06(8))  Yes  No
  - A Special Review Procedure? (see 301CMR 11.09)  Yes  No
  - A Waiver of mandatory EIR? (see 301 CMR 11.11)  Yes  No
  - A Phase I Waiver? (see 301 CMR 11.11)  Yes  No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): Massachusetts Department of Environmental Protection Drinking Water State Revolving Fund (SRF) in the amount of up to \$1,464,000

Are you requesting coordinated review with any other federal, state, regional, or local agency?  
 Yes (Specify \_\_\_\_\_ )  No

List Local or Federal Permits and Approvals: Millbury Conservation Commission;  
Millbury Building Permit

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- |   |                                       |  |
|---|---------------------------------------|--|
| <input type="checkbox"/> Land             | <input type="checkbox"/> Rare Species | <input type="checkbox"/> Wetlands, Waterways, & Tidelands      |
| <input checked="" type="checkbox"/> Water | <input type="checkbox"/> Wastewater   | <input type="checkbox"/> Transportation                        |
| <input type="checkbox"/> Energy           | <input type="checkbox"/> Air          | <input type="checkbox"/> Solid & Hazardous Waste               |
| <input type="checkbox"/> ACEC             | <input type="checkbox"/> Regulations  | <input type="checkbox"/> Historical & Archaeological Resources |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
<b>LAND</b>				<input type="checkbox"/> Order of Conditions <input type="checkbox"/> Superseding Order of Conditions <input type="checkbox"/> Chapter 91 License <input type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> MHD or MDC Access Permit <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/ Extension Permit <input checked="" type="checkbox"/> Other Permits <i>(including Legislative Approvals) – Specify:</i> Water Treatment Approval: BRP WS 24 To Construct Facility >1mgd, BRP WS 12 Major New Technology Approval.
Total site acreage	19.1			
New acres of land altered		Less than 1		
Acres of impervious area	0	0	0	
Square feet of new bordering vegetated wetlands alteration		0		
Square feet of new other wetland alteration		0		
Acres of new non-water dependent use of tidelands or waterways		0		
<b>STRUCTURES</b>				
Gross square footage	0	2,000	2,000	
Number of housing units	0	0	0	
Maximum height (in feet)	0	20	20	
<b>TRANSPORTATION</b>				
Vehicle trips per day	2	0	2	
Parking spaces	2 (not paved)	0	2 (not paved)	
<b>WATER/WASTEWATER</b>				
Gallons/day (GPD) of water use	NA	0	0	
GPD water withdrawal	NA	0	0	
GPD wastewater generation/treatment	NA	0	0	
Length of water/sewer mains (in miles)	NA	0	0	

**CONSERVATION LAND:** Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

- Yes (Specify \_\_\_\_\_)  No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

Yes (Specify \_\_\_\_\_)  No

**RARE SPECIES:** Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

Yes (Specify \_\_\_\_\_)  No

**HISTORICAL /ARCHAEOLOGICAL RESOURCES:** Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes (Specify: Blackstone Canal Historic District)  No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

Yes (Specify \_\_\_\_\_)  No

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:** Is the project in or adjacent to an Area of Critical Environmental Concern?

Yes (Specify \_\_\_\_\_)  No

**PROJECT DESCRIPTION:** The project description should include (a) a description of the project site, (b) a description of both on-site and off-site alternatives and the impacts associated with each alternative, and (c) potential on-site and off-site mitigation measures for each alternative (You may attach one additional page, if necessary.)

On May 14, 2004, perchlorate was detected in Aquarion Water of Massachusetts' Jacques Well # 1 and Jacques Well # 2 located at 173 Main Street in Millbury, MA at concentrations of 42.6 parts per billion (ppb) and 18.45 ppb, respectively. The Jacques Wells are two out of a total of four production wells that provide approximately 50% of the potable water for the Millbury, MA water system. As required by Massachusetts Department of Environmental Protection (MADEP) regulations, any detection over 1 ppb requires public notification of the exceedance. The public was subsequently informed of the exceedance via public service announcements and hand-delivered notices. The wells were taken off-line and have not been reactivated. Throughout the summer months, Millbury has been purchasing drinking water from Worcester, MA to meet demands. An Administrative Consent Order has been issued by the MADEP requiring construction of a water treatment system to remove perchlorate from the groundwater prior to placing the Jacques wells back online.

The Jacques Wells site is located off North Main Street in north central Millbury along the east bank of the Blackstone River. At each production well, there is an existing well building. The buildings are located 100 feet and 130 feet from the river for Jacques Well #2 and Jacques Well #1, respectively. There is a gated, dirt access road which leads to each well building. The proposed treatment building will be constructed at a central location roughly midway between the wells that will allow the treatment of water from either of the Jacques Wells or both wells simultaneously. The treatment building will contain the perchlorate treatment system and all necessary chemical feed systems.

Aquarion Engineering Services (AES) and R.H. White Construction Co. have been developing and designing a treatment system for the Jacques Wells. The MADEP has been involved with all decision-making thus far. The design is based on results from a groundwater monitoring program and a hydrogeological investigation of the site which assessed the nature and extent of perchlorate contamination in groundwater in the surrounding area. Based on a substantial alternative evaluation and cost comparison of available perchlorate treatment alternatives, an ion-exchange treatment system using a perchlorate-selective resin is proposed. The alternative evaluation examined the possibility of continuing to purchase water from the City of Worcester (at a substantially higher cost to Millbury customers), using carbon filtration, and using other types of treatment technologies such as biological reduction. These alternatives were ruled out due to high costs (such was the case for purchase of water), or the inability to achieve perchlorate levels of less than 1 ppb. The only alternative that could achieve such high removal efficiency while still remaining relatively cost effective was ion exchange treatment with the specialized resin. Ion exchange treatment systems are a proven, accepted technology which works by capturing perchlorate with a specialized resin and releasing a chloride ion in its place. Aquarion has selected a treatment system manufacturer using a disposable ion exchange resin technology. Successful ion exchange treatment systems for potable water are operational in California, Maryland and West Virginia.

The ion exchange treatment system includes two 12-foot diameter vessels operating in series, which will achieve continuous filtration of the contaminated drinking water to reduce the levels of contamination to less than 1 ppb perchlorate. The lead/lag configuration of the vessels provides "double barrier" protection, and will provide 100% backup. Each vessel will contain 600

cubic feet of the perchlorate-specific resin. The vessels will be ASME pressure rated for 150 psi at 185° F, and will have an NSF approved lining.

The treatment system is designed to achieve continuous ion exchange treatment of the contaminated water to reduce the levels of perchlorate to less than 1 ppb perchlorate. The treatment system will have operational flow rates of up to 600 gpm from Jacques Well #1 and 800 gpm from Jacques Well #2, which is a combined flow of 1,400 gpm. The ion exchange treatment system will be able to run continuously, 24 hours per day, seven days per week in conjunction with the operation of the wells, and will have enough hydraulic capacity to treat flows from both wells simultaneously.

The proposed treatment building will also include new chemical feed systems for disinfection, pH adjustment and corrosion control. The chemical treatment will occur after the perchlorate treatment. Online instrumentation will include flow measurement, pressure measurement, pH monitoring, and chlorine residual monitoring.

In order to complete the construction of the building, some fill material will be necessary in the location of the proposed building, and on the roadway leading to the building. The elevation of the proposed building and roadway are below the flood plain elevation. In order to compensate for the flood plain storage that will be eliminated as part of this project, material will be removed from other areas of the site. The estimated storage volume in the flood plain that will be created is  $\pm 53$  cubic yards. The estimated storage volume in the flood plain removed due to the proposed building and the road modifications are  $\pm 23$  cubic yards and  $\pm 22$  cubic yards, respectively. Overall, approximately 8 cubic yards of flood plain storage will be created as part of the proposed project.