

DOCKET NO. D-2001-050 CP-3

DELAWARE RIVER BASIN COMMISSION

Ground Water Protected Area

Aqua Pennsylvania, Inc. – Perkiomen System

Groundwater Withdrawal

Perkiomen Township, Montgomery County, Pennsylvania

PROCEEDINGS

This docket is issued in response to an Application submitted by East Latitude, LLC on behalf of the Aqua Pennsylvania, Inc. (Aqua PA) to the Delaware River Basin Commission (DRBC or Commission) on February 18, 2014 (Application), for a renewal and approval of an allocation of groundwater and review of a groundwater withdrawal project in the Ground Water Protected Area of Southeastern Pennsylvania. The prior docket was approved by the Commission on September 21, 2011. The project wells were reviewed under the Pennsylvania Safe Drinking Water Act for public water supply permits and approved by the Pennsylvania Department of Environmental Protection (PADEP) as follows:

WELL NO.	PADEP PERMIT NO.	PADEP APPROVAL DATE
Cranberry Wells Nos. 2, 3 and 4	4696510	2/24/1997
Rahns Well No. 1	4680504	12/21/1980
Meyers Well A	4611512	2/1/2012
Meyers Well B	4601510	9/2/2003
Rahns Well No. 3	4613509	Pending

Aqua PA submitted an application to the PADEP for approval of the Water Supply Permit for Rahns Well No. 3 in October 2013. The PADEP will issue their permit contingent on Commission approval.

The Application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 and for a withdrawal permit under Section 10.3 of the *Delaware River Basin Compact*. The Montgomery County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on June 10, 2014.

A. DESCRIPTION

1. Purpose. The purpose of this project is for approval of Rahns Well No. 3 to replace Rahns Well No. 2 and to supply up to 18.8 million gallons per month (mgm) of water to the docket holder's public water supply distribution system from existing Wells Nos. Cranberry 2, 3

and 4, Meyers A and B and Rahns 1. Aqua PA is not requesting an increase in groundwater withdrawal allocation.

2. Location. The project wells are located in the Perkiomen Creek Watershed, in Perkiomen Township, Montgomery County, Pennsylvania. The Perkiomen Creek near the project site is designated by the Pennsylvania Department of Environmental Protection (PADEP) as supporting Trout Stocking Fishes (TSF) and Migratory Fishes (MF). The wells are completed in the Brunswick Formation.

Specific location information has been withheld for security reasons.

3. Area Served. The docket holder's distribution system supplies water to portions of Perkiomen Township, Montgomery County, Pennsylvania, as shown on the map entitled "Service Area and Source Location Plan" submitted with the Application. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

4. Physical features.

a. Design criteria. The Aqua PA – Perkiomen system currently serves an estimated population of 4,101 through 1,367 service connections with an average and maximum water demand of 0.347 million gallons per day (mgd) and 0.582 mgd, respectively. The docket holder projects an average and maximum water demand of 0.369 mgd and 0.615 mgd, respectively, by the year 2024. The allocation of 18.8 mgm should be sufficient to supply the docket holder's public water supply system.

b. Facilities. The docket holder's existing wells have the following characteristics:

WELL NO.	DEPTH (FEET)	CASED DEPTH/ CASING DIAMETER	PUMP CAPACITY (GPM)	YEAR DRILLED
Cranberry Well No. 2	550	126' / 10"	90	1988
Cranberry Well No. 3	700	144' / 10"	45	1988
Cranberry Well No. 4	650	102' / 10"	150	1990
Meyers Well A	247	61' / 10"	161	2001
Meyers Well B	505	84' / 10"	175	2001
Rahns Well No. 1	500	30' / 6"	45	1979
Rahns Well No. 3	703	140' / 10"	45	2011

The wells and all water service connections are metered.

Prior to entering the distribution system, the groundwater is chlorinated and filtrated for arsenic removal.

The project facilities are above the 100-year flood elevation.

The Aqua PA - Perkiomen water distribution system is presently interconnected with the Schwenksville Borough Authority system which has a 0.5 mgd capacity.

System storage facilities are 1.65 mg, which is approximately 3 days' supply for the Aqua PA Perkiomen system.

c. **Other.** Wastewater is conveyed to the Lower Perkiomen Valley Regional Sewer Authority's Oaks sewage treatment facility which received approval most by DRBC Docket No. D 2001-042 CP-3 on December 9, 2009. The existing Oaks WWTP has effluent limitations based on an annual average flow of 14.25 mgd. The Pennsylvania Department of Environmental Protection (PADEP) has established a hydraulic capacity of 20 mgd for this facility, which is adequate to receive wastewater from the proposed project. The PADEP issued its most recent NPDES Docket No. PA0026964 on June 30, 2009 for this treatment facility.

Wastewater derived through the Schwenksville interconnection is conveyed to the Schwenksville Borough Authority (SBA) sewage treatment facility, which received approval most recently by DRBC Docket No. D-1998-030 CP on May 31, 2002. The PADEP issued its most recent NPDES Permit No. PA0020303 on February 22, 2007. The SBA's sewage treatment facility has adequate capacity to receive wastewater from the project.

d. **Relationship to the Comprehensive Plan.** The existing project facilities were previously included in the Comprehensive Plan by the following DRBC Dockets:

Docket No.	Date Approved	Approved Wells
D-1988-084 CP	June 28, 1989	Cranberry Wells Nos. 2 and 3
D-1991-043 CP	December 9, 1992	Cranberry Wells Nos. 2, 3, and 4
D-1993-011 CP	February 23, 1994	Cranberry Wells Nos. 2, 3, 4, and Rahns Wells (PW-1 and 2) A and B
D-2001-050 CP	April 3, 2002	Meyers Well B
D-2001-050 CP-2	September 21, 2011	Cranberry Wells Nos. 2, 3, 4, and Rahns Wells (PW-1 and 2) A and B, Meyers Wells A and B

Issuance of this docket will approve Rahns Well No. 3 and remove Rahns Well No. 2 from the Comprehensive Plan and will continue this groundwater withdrawal project in the Comprehensive Plan.

B. FINDINGS

The project is located within the Southeastern Pennsylvania Ground Water Protected Area delineated by the DRBC pursuant to *Compact* Section 10.2. The project is designed to conform to the requirements of the *Water Code*, *Water Quality Regulations* and *Ground Water Protected Area Regulations (GWPAR)* of the DRBC.

Review and analysis of the application pursuant to Section 6.D. of the *GWPAR* result in the following:

1. The withdrawal is consistent with the Commission's Comprehensive Plan and the policies and purposes of these regulations.
2. Opportunities to satisfy water requirements on a timely basis from existing available supplies and facilities have been explored and found infeasible.
3. The withdrawal, in conjunction with other withdrawals in the applicable ground water basin, should not exceed withdrawal limits of the ground water basin, aquifer or aquifer system.
4. The withdrawal should not significantly impair or reduce the flow of perennial streams in the area.
5. Existing ground and surface water withdrawals should not be adversely impacted, or will be otherwise assured of adequate supplies in accordance with the requirements of Section 10 of the *GWPAR*.
6. The withdrawal should not cause substantial, permanent adverse impact to the overlying environment.
7. The docket holder adopted and will implement conservation and management programs as required by Section 7 of the *GWPAR*.

48-Hour Pumping Test of Rahns Well No. 3

The Rahns system is currently operating using two production wells Well No. 1 and Well No. 2. Rahns Well No. 2 was classified by the PADEP as Groundwater Under the Direct Influence of Surface Water (GUDI). In an attempt to eliminate this classification, Aqua PA made an attempt to sleeve the existing casing to improve the well seal. After the well was sleeved with additional steel casing and grouted, a Microscopic Particulate Analysis (MPA) sample was collected from Well No. 2. The PADEP reviewed the results and the well retained its GUDI status. In order to rectify this problem, Aqua PA drilled a new well (Rahns Well No. 3) to replace Well No. 2. A deep casing installation was used for Well No. 3 to prevent against surface water influences.

On May 31 through June 2, 2011, a 48-hour continuous-rate pumping test was conducted to assess withdrawal capabilities of Rahns Well No. 3. The constant rate pumping test was also conducted to assess the underlying aquifer characteristics, and potential impacts to the local hydrologic system. The average pumping rate of the test on Rahns Well No. 3 was approximately 42.9 gallons per minute (gpm). At the start of the pumping test, the pumping rate was 50 gpm, after 110 minutes the rate was decreased to 42.9 gpm for the remainder of the test. The test was extended, so that a constant rate of 42.9 gpm was sustained for a minimum of 48 hours. Discharge from the pumping well was directed away from the pumping well, outside of the estimated area where recharge effects might be expected. Rahns Well No. 3 was pumped for a total period of 3,006 minutes.

Groundwater response monitoring was conducted in the pumping well (Rahns Well No. 3), eight (8) domestic monitoring wells, the two existing Rahns production wells (1 and 2), a shallow piezometer and two staff gages. Monitoring wells ranged in distance from the pumping well from the Taney well (approximately 616 feet) to Shiner well (approximately 2,535 feet).

Prior to the start of the pumping test, Rahns Well No. 3 had a static water level of 10.68 feet below top of casing. Maximum drawdown observed at the pumping well, after approximately 48 hours of pumping was 181.32 feet. Approximately 3.49 feet of drawdown was observed in the Taney well as a result of pumping in Rahns Well No. 3. Drawdown was not observed in any other well, piezometer or staff gage.

The observed drawdown in Rahns Well No. 3 was used to calculate aquifer parameters to characterize the underlying aquifer. The estimated average transmissivity value for the Rahns Well No. 3 test data 1,250 gpd/ft. for the test rate of 42.9 gpm. A storage coefficient of 2.49×10^{-5} was calculated from the drawdown data observed at the Taney well.

The DRBC has reviewed the hydrogeological report for the Rahns Well No. 3 pumping test. No adverse impacts are expected to occur to the local hydrologic system due to pumping from Rahns Well No. 3.

Water Audits for Public Water Supply Systems Serving Greater than 100,000 gpd

Section 2.1.8 of the Water Code states that it is the policy of the Commission to establish a standardized water audit methodology for owners of water supply systems serving the public to ensure accountability in the management of water resources. Effective January 1, 2012, the owners of each public water supply system are required to implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance (Section 2.1.8.C). Water audits shall be submitted annually to the Commission by March 31. Aqua PA submitted their most recent Water Audit on August 28, 2013.

Aqua PA Cranberry Wells Nos. 2, 3, and 4, and Rahns Wells 1 and 3 are located in the Perkiomen - Lodal Creeks subbasin, where total net annual groundwater withdrawal (796 mgd) is less than the withdrawal limit set in Section 6.I of the *GWP*AR (1,600 mgd). The total annual groundwater allocation from these five wells is 130.8 mgd (10.9 mgm), a fraction of which will be returned to groundwater. However, even if no water from this project were returned to

groundwater, the total net annual groundwater withdrawal from this subbasin would remain below the withdrawal limits set in Section 6.I of the *GWP*AR. Therefore, the withdrawals from Aqua PA Cranberry Wells Nos. 2, 3, and 4, and Rahns Wells 1 and 3, in conjunction with other withdrawals in the subbasin, are in accordance with the requirements of Section 6.I of the *GWP*AR.

Aqua PA Meyers Wells A and B are located in the Perkiomen – Deep Creeks subbasin, where total net annual groundwater withdrawal (251 mgy) is less than the withdrawal limit set in Section 6.I of the *GWP*AR (1,396 mgy). The total annual groundwater allocation from Meyers Wells A and B is 94.8 mgy (7.9 mgm), a fraction of which will be returned to groundwater. However, even if no water from this project were returned to groundwater, the total net annual groundwater withdrawal from this subbasin would remain below the withdrawal limits set in Section 6.I of the *GWP*AR. Therefore, the withdrawals from the Meyers wells, in conjunction with other withdrawals in the subbasin, are in accordance with the requirements of Section 6.I of the *GWP*AR.

The project does not conflict with the Comprehensive Plan, and is designed to prevent substantial adverse impact to the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The DRBC estimates that the project withdrawals, used for the purpose of public water supply, result in a consumptive use of 10 percent of the total water use. The DRBC definition of consumptive use is defined in Article 5.5.1.D. of the *Administrative Manual – Part III – Basin Regulations – Water Supply Charges*.

C. DECISION

I. Effective on the approval date for Docket No. D-2001-050 CP-3 below:

a. The project described in Docket No. D-2001-050 CP-2 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2001-050 CP-3 ; and

b. Docket No. D-2001-050 CP-2 is rescinded and replaced by Docket No. D-2001-050 CP-3 ; and

c. The project and the appurtenant facilities described in the Section A “Physical Features” of this docket shall be added to the Comprehensive Plan.

II. The project as described in the Section A “Physical features” is approved pursuant to Section 3.8 of the *Compact* and is granted this withdrawal permit pursuant to Section 10.3 of the *Compact* and *GWP*AR, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s. Within 60 days (August 11, 2014),

the docket holder shall provide written confirmation to the Commission that it has registered and reported with PADEP all surface and groundwater sources described in this docket in accordance with the Pennsylvania Regulations (Title 25 - Environmental Protection, [25 PA. CODE CH. 110], Water Resources Planning).

b. The wells and operational records shall be available at all times for inspection by the DRBC.

c. The wells shall be operated at all times to comply with the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

d. During any month, the combined withdrawal from all well sources shall not exceed 18.8 mgm or 225.6 mgy. No well shall be pumped above the maximum instantaneous rate and monthly allocation as indicated below:

WELL NO.	INSTANTANEOUS RATE (GPM)	MONTHLY ALLOCATION (MILLION GALLONS)
Cranberry Well No. 2	90	4.02
Cranberry Well No. 3	45	2.07
Cranberry Well No. 4	150	6.696
Meyers Well A	161	7.182
Meyers Well B	175	7.936
Rahns Well No. 1	45	2.325
Rahns Well No. 3	43	1.919

e. The wells shall be equipped with readily accessible capped ports and drop pipes so that water levels may be measured under all conditions. Existing wells are to be similarly equipped, where possible, with readily accessible ports and drop pipes as repairs or modifications are made at each existing well.

f. The project withdrawals shall be metered with an automatic continuous recording device that measures to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted if maintenance of the 5 percent performance is not technically feasible or economically practicable. A record of daily withdrawals shall be maintained, and monthly totals shall be reported annually by March 31, to the PADEP. Withdrawal records shall be available at any time to the Commission if requested by the Executive Director.

g. Each new water service connection shall include a water meter in accordance with the DRBC's Resolution No. 87-7 (Revised).

h. The docket holder shall continue to implement its Water Conservation Plan as approved by PADEP, and shall report to the PADEP on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

i. No water service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

j. The docket holder shall implement to the satisfaction of the PADEP, a drought or other water supply emergency plan.

k. In accordance with DRBC Resolutions No. 87-6 (Revised) and No. 2009-1, the docket holder shall continue to implement to the satisfaction of the PADEP, the systematic program to monitor and control leakage within the water supply system. The program shall at a minimum include: periodic surveys to monitor leakage, enumerate non-revenue water and determine the current status of system infrastructure; recommendations to monitor and control leakage; and a schedule for the implementation of such recommendations. The docket holder shall proceed expeditiously to correct leakages and unnecessary usage identified by the program.

l. In accordance with DRBC Resolution No. 2009-1 and Section 2.1.8 of the Water Code, the docket holder shall implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding guidance. Water audits shall be submitted annually to the Commission by March 31.

m. A long-term monitoring program is required to obtain data on ground water and surface water hydrologic conditions in the project area. The docket holder shall continue to implement the long-term monitoring program outlined in the “Proposed Ground Water Monitoring Network Map” that was submitted with the docket holder’s previous Application. This program will include the following:

1. **Ground Water Level Monitoring** – Monitoring Wells Nos. 1, 2, 3, 4, 5, 6, 7, 13, 17, 18, and 20 shall be measured to estimate annual ground water fluctuations caused by seasonal changes and/or production well pumping, and detect water level declines that may affect the performance of public and private wells in the area of Meyers Wells A and B. Monitoring shall also be conducted on monitoring Wells Nos. 50, 51, 52, 53, 54, 55, and 56 to estimate annual groundwater fluctuations caused by seasonal changes and/or production well pumping, and detect water level declines that may affect the performance of public and private wells in the area of Cranberry Wells Nos. 2, 3, and 4, and Rahns Wells 1 and 3.
2. **Reports** - All monitoring data, including records required in Conditions “f.” and “m.” herein shall be submitted to the Commission annually, due by April 1. The docket holder is encouraged to submit the annual report electronically. The report shall be prepared by a hydrogeologist and shall assess the effects

of well withdrawals on hydrologic conditions in the area. This report shall include an evaluation of the monitoring data required by this docket approval and such information as deemed appropriate by the hydrogeologist or required by the Executive Director.

3. The Executive Director may modify the monitoring program or temporarily suspend or modify this docket at any time if review of the hydrologic data and/or any other information indicates such action is necessary or appropriate.

n. No new water service connections shall be made to premises connected to sewerage systems which are not in compliance with all applicable effluent limits contained in State permits and the *Water Quality Regulations* of the Commission.

o. The docket holder shall implement to the satisfaction of the PADEP, a continuous program to encourage water conservation in all types of use within the facilities served by this docket approval. The docket holder will report to the PADEP, on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

p. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

q. The area served by this project is limited to the service area as described above. Any expansion beyond this area is subject to review in accordance with Section 3.8 of the *Compact* and the *GWPAR*.

r. Unless an extension is requested and approved by the Commission in advance, in accordance with paragraph 11 of the Commission's Project Review Fee schedule (Resolution No. 2009-2), the docket holder is responsible for timely submittal of a docket renewal application on the appropriate DRBC application form at least 12 months in advance of the docket expiration date set forth below. The docket holder will be subject to late charges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below (or the later date established by an extension that has been timely requested and approved), the terms and conditions of the current docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

s. The issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the right to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

t. If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any domestic or other existing wells or surface water supplies, or if the docket holder receives a complaint by any user of wells or surface water supplies within the zone of influence of the withdrawal, the docket holder shall immediately notify the Executive Director of any complaints by users of wells or surface water supplies within the zone of influence of the withdrawal, and unless excused by the Executive Director, shall investigate such complaints. Any well or surface water supply which is substantially adversely affected, or rendered dry or otherwise unusable as a result of the docket holder's project withdrawal, shall be repaired, replaced or otherwise mitigated at the expense of the docket holder in accordance with Section 10B of the *GWP*AR. A report of investigation and/or mitigation plan prepared by a hydrologist shall be submitted to the Executive Director as soon as practicable. The Executive Director shall make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required. The Executive Director may modify or suspend this docket approval, or require mitigating measures, pending additional review.

u. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

v. For the duration of any drought emergency declared by either Pennsylvania or the Commission, water service or use by the docket holder pursuant to this approval shall be subject to the prohibition of those nonessential uses specified by the Governor of Pennsylvania, the Pennsylvania Emergency Management Council, PADEP, or the Commonwealth Drought Coordinator, to the extent that they may be applicable, and to any other emergency resolutions or orders adopted hereafter by the Commission.

w. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

BY THE COMMISSION

APPROVAL DATE: June 11, 2014

EXPIRATION DATE: June 11, 2024