COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
EXISTING USER PERMIT
TO WITHDRAW GROUNDWATER IN THE EASTERN VIRGINIA GROUNDWATER MANAGEMENT AREA

Permit Number: GW00130EU
Effective Date: November 1, 2015
Expiration Date: October 31, 2025

Pursuant to Section 62.1-256 of the Ground Water Management Act of 1992 (Chapter 25, Title 62.1 of the Code of Virginia) and the Groundwater Withdrawal Regulations (Regulations)(9VAC25-610-10 *et seq.*), the State Water Control Board (Board) hereby authorizes the Permittee to withdraw and use groundwater in accordance with this permit.

Permittee	Aqua Virginia, Inc.
Facility	Gwynnfield Subdivision Public Water System
Facility Address	202 Bruce Rd. Essex, VA 22560

The Permittee's authorized groundwater withdrawal shall not exceed:

9,820,000 gallons per year,
1,440,000 gallons per month,
66,800 gallons per day.

The permitted withdrawal will be used to provide a non-municipal public water supply. Other uses are not authorized by this permit.

The Permittee shall comply with all conditions and requirements of the permit.

By direction of the State Water Control Board, this Permit is granted by:

Signed _____ Date 10/30/15

Director, Office of Water Supply

This permit is based on the Permittee's application submitted on May 20, 2014, and subsequently amended to include supplemental information provided by the Permittee. The following are conditions applicable to all permits and govern the system set-up and operation, monitoring, reporting, and recordkeeping pertinent to the Regulations.

Part I
Operating Conditions

A. Authorized Withdrawal

1. The withdrawal of groundwater shall be limited to the following wells identified in the table below. Withdrawals from wells not included in Table 1 are not authorized by this permit and are therefore prohibited. 9VAC25-610-140(A)

Table 1

Owner Well Name	*DEQ Well #*	*Well Depth (ft)*	*Screen Intervals (ft)*	*Aquifer*	*Latitude*	*Longitude*
Well 1A	128-00091	405	365-370, 385-400	Not determined	37°58' 19.78"	76° 53' 52.69"
Well 2	128-00015	554	528-548	Not determined	37°58' 17.04"	76° 53' 38.63"

2. Any actions that result in a change to the status, construction, or pump intake setting of wells included in this permit must be pre-approved by the Department of Environmental Quality (Department) in writing prior to implementing the change, and a revised GW-2 Form must be submitted to the Department within 30 days after the physical construction of a well is altered or the pump intake setting has been changed. If changes are a result of an emergency, notify the Department within 5 days from the change. 9VAC25-610-140(C)

B. Public Water Supplies

1. Daily withdrawal limits set forth in this permit are consistent with the requirements and conditions of the Virginia Department of Health Waterworks Operation Permit No. 4057400. 9VAC25-610-140(A)(5)

2. The Permittee shall submit copies of an updated Waterworks Operation Permit and the associated Engineering Description Sheets to the Department within 30 days of receipt from the Virginia Department of Health. 9VAC25-610-140(C)

C. Pump Intake Settings

The Permittee shall not knowingly place a pump or water intake device lower than the top of the uppermost confined aquifer that a well utilizes as a groundwater source or lower than the bottom of an unconfined aquifer that a well utilizes as a groundwater source in order to prevent dewatering of the aquifer, loss of inelastic storage, or damage to the aquifer from compaction. 9VAC25-610-140(A)(6)

D. Withdrawal Reporting

1. Water withdrawn from each well shall be recorded monthly at the end of each month and reported to the Groundwater Withdrawal Permitting Program, in a paper or electronic format provided by the Department, by the tenth (10th) day of each January, April, July and October for the respective previous standard quarter. Records of water use shall be maintained by the Permittee in accordance with Part III, Condition F, of this permit. 9VAC25-610-140(A)(9)

2. The Permittee shall report any amount in excess of the permitted withdrawal limit by the fifth (5th) day of the month following the month when such a withdrawal occurred. Failure to report may result in compliance or enforcement activities. 9VAC25-610-140(C)

E. Well Tags

1. Each well that is included in this permit shall have affixed to the well casing, in a prominent place, a permanent well identification plate that records, at a minimum, the DEQ well identification number, the groundwater withdrawal permit number, the total depth of the well, and the screened intervals in the well. Such well identification plates shall be in a format specified by the Board and are available from the Department. 9VAC25-610-140(12)

2. Well tags shall be affixed to the appropriate well casing within 30 days of receiving the tags from the Department. The accompanying well tag installation certification form shall be returned to the Department within 60 days of receipt of the tags. 9VAC25-610-140(C)

Part II
Special Conditions

Pursuant to 9VAC25-610-140(B) and (C), the following Special Conditions apply to this permit in order to protect the public welfare, safety, and health or conserve, protect and help ensure the beneficial use of groundwater.

A. Pump Intake Depth Determination and/or Reset

Prior to a request for expansion, renewal, or expiration of the permit, the Permittee shall ensure that the pump intake depths for both production wells are set above the maximum pump setting depth as provided by Department staff based on new geophysical log data obtained by the Permittee. At least two weeks prior to the scheduled pump intake determinations; the Permittee shall notify the Department of the work schedule. The Permittee shall advise DEQ, in writing, of the pump setting within 30 days of the depth determination or pump depth adjustment.

B. Water Conservation and Management

1. The Water Conservation and Management Plan (WCMP) submitted on August 21, 2015 as an addendum to the application, and subsequently amended and then approved by the Department, is incorporated by reference into this permit and shall have the same effect as any condition contained in this permit and may be enforced as such. 9VAC25-610-100(B)

2. By the end of the first year of the permit cycle (November 1, 2016), the Permittee shall submit documentation to the Department that the leak detection and repair program defined in the WCMP has been implemented. This documentation shall include activities completed during the first year of the permit term. 9VAC25-610-100(B)(1b)(2b)(3b)

3. As soon as completed but not later than the end of the second year of the permit cycle (November 1, 2017), the Permittee shall submit to the Department results of an audit of the total amount of groundwater used in the distribution system and operational processes. 9VAC25-610-100(B)(1b)(2b)(3b)

4. A report on the plan's effectiveness in reducing water use, including revisions to those elements of the WCMP that can be improved and addition of other elements found to be effective based on operations to date, shall be submitted by the end of years four (November 1, 2019) and eight (November 1, 2023) of the permit term. Pursuant to 9VAC25-610-140 (C), these reports shall include as appropriate:

   a. Any new water saving equipment installed or water saving processes adopted.
   b. WCMP actions taken to reduce the volume of water needed to supply the system.
   c. Planned short or long term efforts and actions to be added to the WCMP to improve the efficiency of water use in the system or by customers and for reducing the loss of water.
   d. Results of additional water audits completed.
   e. Review of water use category per-connection use in municipal systems.
   f. Evaluation of the leak detection and repair program.
   g. Description of educational activities completed.
   h. Identification of any water reuse opportunities identified.

5. If revisions or additions to the WCMP are necessary, an updated WCMP shall be submitted to the Department for approval prior to implementation of the revised WCMP.

6. Upon the Departments review of the associated WCMP leak detection and repair documents, audit results or reports required in conditions above, the Department may request revisions to the WCMP.

7. Records of activities conducted pursuant to the WCMP shall be maintained for the term of the permit.

8. The Permittee is required to maintain individual in-line totalizing flow meters on the system connections and conduct regular monitoring of the meters. The permitted amount includes a water savings allotment of 426,890 gallons based on 95% of the connections being metered. Annual water system audit reports based on the meter data shall be submitted following the end of the second year of the permit cycle (November 1, 2017), and the end of years four (November 1, 2019) and eight (November 1, 2023) of the permit term.

C. Geophysical Borehole Logging 9VAC25-610-140(C)

By December 31, 2017, a complete suite of geophysical logs (Spontaneous Potential, Single Point Resistance, 16/64 Short and Long Normal, Natural Gamma at a scale of 20 ft per inch) shall be obtained from a geophysical bore hole at a location approved by the Department. An electronic and hard copy of

the report shall be submitted to the Department to allow determination of the top and bottom of the aquifer in use.

At least two weeks prior to the scheduled geophysical logging, the Permittee shall notify the Department of the drilling timetable to receive any further guidance needed on performing the geophysical logging and to allow scheduling of Department staff to make a site visit during the logging.

Part III
General Conditions

A. Duty to Comply

The Permittee shall comply with all conditions of this permit. Nothing in this permit shall be construed to relieve the permit holder of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any permit violation is a violation of the law and is grounds for enforcement action, permit termination, revocation, modification, or denial of a permit application. 9VAC25-610-130(A)

B. Duty to Cease or Confine Activity

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a permit has been granted in order to maintain compliance with the conditions of the permit. 9VAC25-610-130(B)

C. Duty to Mitigate

The Permittee shall take all reasonable steps to avoid all adverse impacts that may result from this withdrawal as defined in 9VAC25-610-10 and provide mitigation of the adverse impact when necessary as described in 9VAC25-610-110(D)(3)(g). 9VAC25-610-130(C)

D. Inspection, Entry, and Information Requests

Upon presentation of credentials, the Permittee shall allow the Board, the Department, or any duly authorized agent of the Board, at reasonable times and under reasonable circumstances, to enter upon the Permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the permit conditions, and to inspect any facilities, well(s), water supply system, operations, or practices (including sampling, monitoring and withdrawal) regulated or required under the permit. For the purpose of this section, the time for inspection shall be deemed reasonable during regular business hours. Nothing contained herein shall make an inspection time unreasonable during an emergency. 9VAC25-610-130(D)

E. Duty to Provide Information

The Permittee shall furnish to the Board or Department, within a reasonable time, any information that the Board may request to determine whether cause exists for modifying or revoking, reissuing, or terminating the permit, or to determine compliance with the permit. The Permittee shall also furnish to

the Board or Department, upon request, copies of records required to be kept by regulation or this permit. 9VAC25-610-130(E)

F. Monitoring and Records Requirements

1. The Permittee shall maintain a copy of the permit on-site and/or shall make the permit available upon request. 9VAC25-610-130(E)

2. Monitoring of parameters shall be conducted according to approved analytical methods as specified in the permit. 9VAC25-610-130(F)(1)

3. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. 9VAC25-610-130(F)(2)

4. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three years from the date of the expiration of a granted permit. This period may be extended by request of the Board at any time. 9VAC25-610-130(F)(3)

5. Records of monitoring information shall include as appropriate (9VAC25-610-130(F)(4)):

   a. the date, exact place and time of sampling or measurements;
   b. the name(s) of the individual(s) who performed the sampling or measurements;
   c. the date the analyses were performed;
   d. the name(s) of the individual(s) who performed the analyses;
   e. the analytical techniques or methods supporting the information, such as observations, readings, calculations and bench data used;
   f. the results of such analyses; and
   g. chain of custody documentation.

G. Environmental Laboratory Certification

The Permittee shall comply with the requirement for certification of laboratories conducting any tests, analyses, measurements, or monitoring required pursuant to the State Water Control Law (§ 62.1-44.2 *et seq.*), Environmental Laboratory Certification Program (§ 2.2-1105 *et seq.*), Certification for Noncommercial Environmental Laboratories (1VAC30-45), and/or Accreditation for Commercial Environmental Laboratories (1VAC30-46), and:

a. Ensure that all samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
b. Conduct monitoring according to procedures approved under 40CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency.
c. Periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements. (1VAC30-45-20)

H. Future Permitting Actions

1. A permit may be modified or revoked as set forth in Part VI of the Regulations. 9VAC25-610-290 and 9VAC25-610-130(G)

2. If a Permittee files a request for permit modification or revocation, or files a notification of planned changes, or anticipated noncompliance, the permit terms and conditions shall remain effective until the Board makes a final case decision. This provision shall not be used to extend the expiration date of the effective permit. 9VAC25-610-130(G)

3. Permits may be modified or revoked upon the request of the Permittee, or upon Board initiative, to reflect the requirements of any changes in the statutes or regulations. 9VAC25-610-130(G)

4. The Permittee shall schedule a meeting with the Department prior to submitting a new, expanded or modified permit application. 9VAC25-610-85

5. A new permit application shall be submitted 270 days prior to any proposed modification to this permit (i) that will result in an increase of withdrawal above permitted limits or violate the terms and conditions of this permit; or (ii) to continue a withdrawal greater than 300,000 gallons in any month while an application for renewal is being processed. 9VAC25-610-96

6. The Permittee shall provide all information described in 9VAC25-610-94 for any reapplication. 9VAC25-610-96(C)

7. The Permittee must notify the Department in writing of any changes to owner and facility contact information within 30 days of the change. 9VAC25-610-140(C)

I. Metering and Equipment Requirements

1. Each well and/or impoundment or impoundment system shall have installed an in-line totalizing flow meter to read gallons, cubic feet, or cubic meters on each permitted well prior to beginning the permitted use. Meters shall produce volume determinations within plus or minus 10% of actual flows. 9VAC25-610-140(7)(A)(b)

   a. A defective meter or other device must be repaired or replaced within 30 days.
   b. A defective meter is not grounds for not reporting withdrawals. During any period when a meter is defective, generally accepted engineering methods shall be used to estimate withdrawals. The period during which the meter was defective must be clearly identified in the groundwater withdrawal report required by Part I, Subsection D of this permit. An alternative method for determining flow may be approved by the board on a case-by-case basis.

2. Each well shall be equipped in a manner such that water levels can be measured during pumping and non-pumping periods without dismantling any equipment. Any opening for tape measurement of water levels shall have an inside diameter of at least 0.5 inches and be sealed by a removable plug or cap. The Permittee shall provide a tap for taking raw water samples from each permitted well. 9VAC25-610-140(A)(7)(e)

J. Minor Modifications

1. A minor modification to this permit must be made to replace an existing well(s) or add an additional well(s) provided that the well(s) is screened in the same aquifer(s) as the existing well(s) and is in the near vicinity of the existing well(s), the total groundwater withdrawal does not increase, the area of impact does not increase, and the well has been approved by the Department prior to construction. 9VAC25-610-330(B)(4) and (5)

2. A minor modification to this permit must be made to combine withdrawals governed by multiple permits when the systems are physically connected as long as interconnection will not result in additional groundwater withdrawal and the area of impact will not increase. 9VAC25-610-330(B)(6)

3. Minor modifications to this permit must also be made to.

   a. Change an interim compliance date up to 120 days from the original compliance date, as long as the change does not interfere with the final compliance date. 9VAC25-610-330(B)(7)
   b. Allow for change in ownership when the Board determines no other change in the permit is necessary and the appropriate written agreements are provided in accordance with the transferability of permits and special exceptions. 9VAC25-610-320 and 9VAC25-610-330(B)(8)
   c. Revise a Water Conservation and Management Plan to update conservation measures being implemented by the Permittee that increase the amount of groundwater conserved. 9VAC25-610-330(B)(9)

K. Well Construction

At least two weeks prior to the scheduled construction of any well(s), the Permittee shall notify the Department of the construction timetable and receive prior approval of the well(s) location(s) and acquire the DEQ Well number. All wells shall be constructed in accordance with the following requirements.

1. A well site approval letter or well construction permit must be obtained from the Virginia Department of Health prior to construction of the well. 9VAC25-610-130(A)

2. A complete suite of geophysical logs (Spontaneous Potential, Single Point Resistance, 16/64 Short and Long Normal, Natural Gamma) shall be completed for the well and submitted to the Department along with the corresponding completion report. 9VAC25-610-140(C)

3. The Permittee shall evaluate the geophysical log and driller's log information to estimate the top of the target aquifer, and therefore, a depth below which the pump shall not be set. The Permittee's determination of the top of the target aquifer shall be submitted to the Department for review and approval, or approved on site by the Department's Groundwater Characterization staff, prior to installation of any pump. 9VAC25-610-140(A)(6)

4. The Permittee shall install gravel packs and grout in a manner that prevents leakance between aquifers. Gravel pack shall be terminated close to the top of the well screen(s) and shall not extend above the top of the target aquifer. 9VAC25-610-140(C)

5. A completed GW-2 Form and any additional water well construction documents shall be

submitted to the Department within 30 days of the completion of any well and prior to the initiation of any withdrawal from the well. 9VAC25-610-140(C)

6. The assigned DEQ Well number shall be included on all well documents. 9VAC25-610-140(C)

L. Permit Reopening

This permit may be reopened for the purpose of modifying the conditions of the permit as follows:

1. To meet new regulatory standards duly adopted by the Board. 9VAC25-610-140(A)(11)

2. When new information becomes available about the permitted withdrawal, or the impact of the withdrawal, which had not been available at permit issuance and would have justified the application of different conditions at the time of issuance. 9VAC25-610-310(B)(1)

3. When the reported withdrawal is less than 60% of the permitted withdrawal amount for a five year period. 9VAC25-610-310(B)(2)

4. If monitoring information indicates the potential for adverse impacts to groundwater quality or level due to this withdrawal. 9VAC25-610-140(C)

Part IV
Items needed for Re-Application, Expansion, or Modification

To ensure uninterrupted operation of the Permittee's withdrawal system, a complete application must be submitted 270 days prior to the expiration date of this permit (February 4, 2025) or the start of a proposed modification. The following is a list of items or actions that, along with the completed application, will be required, at a minimum, to ensure an application would be deemed complete. 9VAC25-610-10 *et seq.*

1. A pre-application meeting with Department staff

2. A Water Conservation and Management Plan

   A Water Conservation and Management Plan (WCMP) is an operational plan and shall be consistent with local and regional water supply plans in the Permittee's geographic area. The WCMP shall be specific to the type of water use and include the following: 9VAC25-610-100(B)

   a. Requirements for the use of water saving plumbing and processes to ensure the most efficient use of groundwater and decrease the water demand;
   b. A water loss reduction program which defines the applicant's leak detection and repair program;
   c. A water use education program which contains requirements for the education of water users and training of employees controlling water consuming processes to assure that water conservation principles are well known by the users of the resource;
   d. An evaluation of potential water reuse options and assurances that water shall be reused in all instances where reuse is practicable and not prohibited by other regulatory programs;

e. Requirements for mandatory water use reductions and compliance with restrictions during water shortage emergencies declared by the local governing body or water authority consistent with §§ 15.2-923 and 15.2-924 of the Code of Virginia. This should include, where appropriate, ordinances in municipal systems prohibiting the waste of water generally and requirements providing for mandatory water use restrictions in accordance with drought response and contingency ordinances implemented to comply with 9VAC25-780-120 during water shortage emergencies. Penalties for failure to comply with mandatory water use restrictions should be included in municipal system plans.

3. Evaluation of potential alternative water sources, including potential reuse sources, storm water capture, and surface water sources, municipal supplies, etc.

4. Signed Local Government Ordinance Form (LGOF). This form is supplied by the Department that the applicant sends to the local governing body in which the withdrawal is to occur, to obtain notification that the location and operation of the withdrawing facility is in compliance with all ordinances adopted pursuant to Chapter 22 (§ 15.2-2200 et seq.) of Title 15.2 of the Code of Virginia.

5. Mitigation Plan. This is a plan to mitigate potential adverse impacts from the proposed withdrawal on existing groundwater users for systems where the predicted area of impact extends beyond the property owned by the Permittee.

6. Permit fee for non-agricultural applicants

7. Submittal of an Aquifer Test Plan, Aquifer Test Report, and DEQ templates upon completion of an Aquifer Test that is developed based on guidelines outlined in the DEQ Aquifer Test Advisory (2007) and conducted under the guidance of DEQ

8. Installation of monitoring well(s) when required for an Aquifer Test