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DOCKET NO. D-1992-052-4

DELAWARE RIVER BASIN COMMISSION

**Longwood Gardens, Inc.
Groundwater and Surface Water Withdrawal
East Marlborough Township, Chester County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) on June 27, 2024 for renewal of an allocation of groundwater and surface water and review of a groundwater and surface water withdrawal project (Application).

The Application was reviewed for approval under Section 3.8 and for a withdrawal permit under Section 10.3 *Delaware River Basin Compact*. The Chester County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on August 6, 2025.

A. DESCRIPTION

1. **Purpose.** The purpose of this docket is to approve the renewal of an existing supply of groundwater and surface water to the docket holder's public water supply system and irrigation for ornamental horticultural display gardens from existing Wells 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, new Wells 4 and 14 and an existing off-stream constructed ornamental lake (Intake 15). The approval will also remove Well No. B-169B from the docket. The total allocation of groundwater and surface water will remain 8.68 million gallons per month (mgm).

2. **Location.** The project wells are completed in Granitic Gneiss. The wells are located in the West Branch Red Clay Creek Watershed, in East Marlborough Township, Chester County, Pennsylvania.

Specific location information has been withheld for security reasons.

3. **Area Served.** The project withdrawals will be used to supply potable water and water for irrigation to the Longwood Gardens property only. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in Section C. DECISION of this docket.

4. **Design Criteria.** The project wells serve potable water to an estimated 1.6 million visitors and staff annually through 90 service connections to the facilities on-site and irrigates approximately 50 acres of ornamental horticultural display gardens. Potable water is supplied to the docket holder's facility by Wells 1 and 2. Wells 10 and 12 supply potable water to two (2) structures on the property that are not connected with the facility's public water supply system. Well 4 feeds water to the ornamental ponds on a seasonal basis (March through December). Well 6 is utilized on a seasonal basis to provide water to the Italian Water Garden fountain. The other project wells supply water for the irrigation system.

The docket holder utilizes surface water from its 1.3 acre on-site ornamental lake (Large Lake). Large Lake is interconnected to a second ornamental pond, (Small Lake) that is 0.6-acres in area. The ornamental ponds are sustained by water pumped from Well 4 plus storm water runoff from adjacent garden, woods and the visitors center building and parking lot. The surface water from the on-site ornamental ponds is utilized in early spring before the garden irrigation system is de-winterized.

The average and maximum demand is 0.217 million gallons per day (mgd) and 0.51 mgd, respectively. The docket holder projects an average and maximum water demand of 0.241 mgd and 0.563 mgd, respectively, by the year 2035. The allocation of 8.68 mgm should be sufficient to meet the future demands of the docket holder's system.

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

WELL NO.	DEPTH (FEET)	CASED DEPTH (FEET)	PUMP CAPACITY (GPM)	YEAR DRILLED
1	450	144	175	1950
2	123	98	220	1954
3	60	39	112	1921
4	243	100	39	2021
5	168	49	50	1963
6	68	15	25	1925
8	245	45	39	1996
9	185	27	75	1941
10	152	Unknown	25	1974
11	114	100	39	1953
12	150	67	25	1999
13	403	68	150	2010
14	400	78	30	2023

INTAKE ID.	PUMP CAPACITY (GPM)	STORAGE CAPACITY (MG)	YEAR CONSTRUCTED
Large Lake (Intake 15)	50	2 to 3	1920s

The wells and intake are metered.

Prior to entering the distribution system, water withdrawn from Wells 1 and 2 for potable use is subject to disinfection (using sodium hypochlorite). Water from Wells 10 and 12 are filtered in cartridge filters and passed through a water softener. Water going to the irrigation system from Wells 3, 4, 5, 6, 8, 9, 11 and 13 are not subject to treatment. Well 14 flow is treated for elevated iron utilizing a potassium permanganate and green sand filtration system.

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

The docket holder's potable water system is presently interconnected with Aqua Pennsylvania's public water supply system and is used for emergency purposes only.

6. **Other.** Wastewater is conveyed to the docket holder's sewage treatment facility most recently approved by DRBC Docket No. D-1987-053 on June 22, 1988. The Pennsylvania Department of Environmental Protection (PADEP) issued its most recent Water Quality Management Permit No. 1587416 for this treatment facility. The treatment facility has adequate capacity to receive wastewater from the proposed project.

B. FINDINGS

1. Surface Water Charges

The docket holder shall pay for surface water use if the irrigation water withdrawal exceeds the amount of the total combined well withdrawals into the ornamental off-stream lake (Large Lake), in accordance with *Basin Regulations-Water Supply Charges* 18 C.F.R. Part 420. See Section C. DECISION Condition C.4.

2. Well 4 Hydrogeologic Evaluation

On December 12, 2022 through December 16, 2022, a constant rate pumping test was conducted to assess groundwater withdrawal capabilities of Well 4 and the underlying aquifer characteristics and potential impacts to the local hydrologic system. The average pumping rate of the test on Well 4 was 38.7 gallons per minute (gpm). Discharge from the pumping test was directed into Small Lake located approximately 250 feet north of Well 4. Well 4 was pumped for a total period of 4,446 minutes.

Groundwater response monitoring was conducted in the pumping well. Well 4 was monitored using a datalogger.

Prior to the start of the pumping test, the water level in Well 4 was 25.86 feet below the top of casing (btoc). The maximum drawdown observed at the pumping well, after approximately 74.1 hours of pumping at an average rate of 38.7 gpm, was 31.06 feet (water level of 56.92 feet btoc). The predicted 180-day drawdown at a pumping rate of 38.7 gpm is 37.5 feet (water level of 63.36 feet).

The observed drawdown data was used to calculate aquifer parameters to characterize the underlying aquifer. A Transmissivity value for the Well 4 test data was 400 ft²/day from Well 4 data using the Cooper-Jacob drawdown at an average test rate of 38.7 gpm.

Commission staff have reviewed the Hydrogeologic Report for the Well 4 pumping test. No adverse impacts are expected to occur to the local hydrologic system due to the pumping from Well 4.

3. Well 14 Hydrogeologic Evaluation

On March 4, 2025 through March 6, 2025, a constant rate pumping test was conducted to assess groundwater withdrawal capabilities of Well 14 and the underlying aquifer characteristics and potential impacts to the local hydrologic system. The average pumping rate of the test on Well 14 was approximately 30 gallons per minute (gpm). Discharge from the pumping test was directed approximately 1,500 feet from Well 14 into the storm sewer in the basement of greenhouse G-33. Well 14 was pumped for a total period of 2,898 minutes.

Groundwater response monitoring was conducted in the pumping well (Well 14), Well B-46 and a shallow observation well. All wells had dataloggers installed in them. The monitoring well distance ranged from 21 feet from the pumping well (shallow observation well) to 1,730 feet (Well B-46).

Prior to the start of the pumping test, the water level in Well 14 was 24.14 feet below the top of casing (btoc). The maximum drawdown observed at the pumping well, after approximately 48 hours and 18 minutes of pumping at an average rate of approximately 30 gpm, was 67.67 feet (water level of 91.81 feet btoc). The predicted 365-day drawdown at a pumping rate of 30 gpm is 96.08 feet (water level of 71.94 feet).

During the aquifer test at the rate of approximately 30 gpm, the water level in the shallow observation well exhibited a 0.22 ft decrease. No discernable drawdown was observed in the other observation well due to the pumping of Well 14.

The observed drawdown data was used to calculate aquifer parameters to characterize the underlying aquifer. The median Transmissivity value for the Well 14 test data was 1,000 ft²/day from Well 14 at an average test rate of 30 gpm.

Commission staff have reviewed the Hydrogeologic Report for the Well 14 pumping test. No adverse impacts are expected to occur to the local hydrologic system due to the pumping from Well 14.

4. Other Findings

The docket holder estimates that the project withdrawals, used for the purposes of public water supply and ornamental horticultural irrigation, result in a consumptive use of 10% and 90%, respectively, of the total water use. The DRBC definition of consumptive use is defined in Basin Regulations-Water Supply Charges 18 C.F.R. 420.1(d).

The project is designed to conform to the requirements of the *Water Code (WC)* and *Water Quality Regulations (WQR)* of the DRBC.

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

C. DECISION

Effective on the approval date for Docket No. D-1992-052-4 below, Docket No. D-1992-052-3 is terminated and replaced by Docket No. D-1992-052-4. The project and appurtenant facilities as described in in Section A.4. (Design Criteria) and A.5. (Facilities) are approved subject to the following conditions, pursuant to Section 3.8 of the *Compact*:

Monitoring and Reporting

1. The docket holder shall continue to report to the 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).
2. The project withdrawals shall be metered by means of an automatic continuous recording device, flow meter, or other method, and shall be measured to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted for surface water withdrawals by the designated agency PADEP if maintenance of the 5 percent performance is not technically feasible or economically practicable.] Meters or other methods of measurement shall be subject to approval and inspection by the PADEP as to the type, method, installation, maintenance, calibration, reading and accuracy. A record of biweekly withdrawals shall be maintained, and monthly totals shall be reported to the PADEP annually and shall be available at any time to the Commission if requested by the Executive Director.
3. The docket holder shall continue to implement its Water Conservation Plan as approved by PADEP and shall report to the PADEP on actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

4. The docket holder shall pay for surface water use, if the irrigation water withdrawal exceeds the amount of the total combined well withdrawals into the Ornamental off-stream lake (Large Lake), in accordance with Basin Regulations – *Water Supply Charges* 18 C.F.R. Part 420.

Other Conditions

5. During any month, the combined withdrawal from all sources shall not exceed 8.68 million gallons. No source shall be pumped above the maximum rate and monthly allocation as indicated below:

WELL NO.	MAXIMUM RATE (GPM)*	MONTHLY ALLOCATION (MGM)
1	175	2.65
2	220	3.24
3	112	0.65
4	39	0.50
5	50	0.75
6	25	1.0
8	39	0.05
9	75	0.10
10	25	0.016
11	39	0.016
12	25	0.016
13	150	0.85
14	30	0.75
Ornamental Lake	50	0.20

* Based on a 24-Hour Average

6. This approval shall expire on the expiration date set forth below unless prior thereto the docket holder has applied to the Commission to renew or extend this approval.

7. The docket holder is responsible for timely submittal to the DRBC of a docket renewal application on the appropriate application form including the appropriate docket application filing fee (see 18 C.F.R. 401.43) at least 6 months in advance of the docket expiration date set forth below. The docket holder will be subject to late filed renewal surcharges in the event of untimely submittal of its renewal application whether DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. If the docket holder has not applied to renew the docket or the DRBC is unable to reissue the docket before the expiration date below, the terms and conditions of the current docket will remain fully effective and enforceable pending the renewal of the docket.

8. The wells, surface water intake, facility and operational records shall be available at all times for inspection by the DRBC.

9. The wells, surface water intake, and facilities shall be operated at all times to comply with the requirements of the *WC* and *WQR* of the DRBC.
10. The wells shall be equipped, where possible, with readily accessible capped ports and minimum ½ inch inner diameter (ID) drop pipes as repairs or modifications are made at each existing well so that water levels may be measured under all conditions.
11. Each new water service connection shall include a water meter in accordance with the DRBC's Resolution No. 87-7 (Revised).
12. 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).
13. The docket holder shall implement to the satisfaction of the PADEP, a drought or other water supply emergency plan.
14. 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.
15. 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.
16. The docket holder is permitted to provide the water approved in this docket to the areas included in Section A.3. Area Served of this docket. Any expansion beyond those included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the *Compact*.
17. The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations. (see 18 CFR 401.43).
18. This approval is transferable by request to the DRBC Executive Director provided that the project purpose and area served approved by the Commission in this docket will not be materially altered because of the change in project ownership. The request shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 CFR 401.43).
19. The docket holder shall request a name change of the entity to which this approval is issued if the name of the entity to which this approval is issued changes its name. The request for name change shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 C.F.R. 401.43).
20. 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 rights to amend, alter or rescind any actions taken hereunder to ensure the proper control, use and management of the water resources of the Basin.

21. If the monitoring required herein or any other relevant data or information demonstrates that the operation of this project is interfering with or otherwise impairing existing uses of ground or surface water, or if the docket holder receives a complaint from an existing ground or surface water user within the zone of influence of the withdrawal alleging such interference or impairment, the permit holder shall immediately notify the Executive Director, and unless excused by the Executive Director, shall investigate the demonstrated or alleged impacts. For purposes of this condition, notification shall mean either (a) electronic transmittal of written notice to the Executive Director via email (using addresses posted on the DRBC website); or (b) written notice to the Executive Director and a telephone call to the Project Review Section at 609-883-9500, ext. 216. (Oral notification must always be accompanied by immediate written notification directed to the Executive Director.) In addition, the docket holder shall provide written notice to all potentially affected water users of the docket holder's responsibilities under this condition. **Any well or surface water supply that is impaired as a result of the docket holder's project withdrawal shall be repaired, replaced or mitigated at the docket holder's expense.** The scope of the options to consider for repair, replacement and/or mitigation shall not be limited solely to those that are owned, operated, or controlled by the project sponsor. An investigation report and/or mitigation plan prepared and certified by a licensed professional engineer and/or a licensed professional geologist shall be submitted to the Executive Director as soon as practicable following notice of the demonstrated or alleged impairment consistent with this paragraph. The Executive Director shall make the final determination regarding the scope and sufficiency of the investigation and the extent of any mitigation measures that may be required. Where ground and surface waters are rendered unavailable, unusable, or unsuitable for the pre-existing use, the Executive Director may direct the docket holder to take interim actions to mitigate such impacts, pending completion of the investigative report and any long-term repair, replacement, or mitigation.

22. 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.

23. 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:

EXPIRATION DATE: September 10, 2035