



Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

September 2, 2020

CERTIFIED MAIL – 7016 0340 0000 5595 3257

Return Receipt Requested

Brookfield Power Piney & Deep Creek, LLC
Ms. Amy Burnett
Compliance Specialist
126 Lamberton Lane
Hawley PA 18428

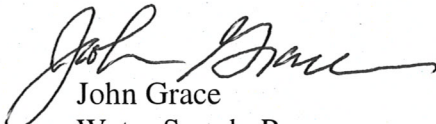
RE: State Water Appropriation and Use Permit No. GA1992S009(09)

Dear Ms. Burnett:

Enclosed is the revised State Water Appropriation and Use Permit for the Deep Creek hydroelectric station. The permit contains multiple reporting and monitoring requirements. Brookfield has, to the best of our knowledge, complied with similar requirements over the past. There are some modifications to the Permit, so you are advised to carefully read the Permit and become thoroughly familiar with its requirements.

An Annual Report and semi-annual Water Withdrawal Reports are required by this permit. Forms for making the semi-annual reports will be mailed to you in June and December of each year and shall be submitted to this office by the following July and January respectively. If you have any questions, please email me at john.grace@maryland.gov. You may also leave a message at (410) 537-3713.

Sincerely,

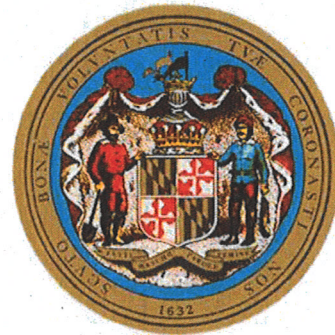

John Grace
Water Supply Program

cc: Garrett County Health Department

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION

WATER APPROPRIATION AND USE PERMIT

Permit Number: GA1992S009(09)
Effective Date: September 2, 2020
Expiration Date: August 31, 2032
First Appropriation: January 1, 1925



BROOKFIELD POWER PINEY & DEEP CREEK, LLC

Hereinafter referred to as the "Permittee", is authorized by the Water and Science Administration, hereinafter referred to as the "Administration" pursuant to the provisions of Title 5 of the Environment Article, Annotated Code of Maryland (2013 replacement volume) as amended, to appropriate and use waters of the State subject to the following conditions:

1. Allocation - The water withdrawal granted by this permit is limited to:
A daily average of 128,000,000 gallons on a yearly basis and
A maximum daily withdrawal of 420,000,000 gallons.
2. Use - The water is to be used for hydroelectric power generation, temperature enhancement, whitewater boating enhancement, and maintenance of minimum flows in the Youghiogheny River.
3. Source - The water shall be taken from Deep Creek Lake, a water of the State having a use class III-P designation (See COMAR 26.08.02.02 Designated Uses).
4. Location - The point(s) of withdrawal shall be located near Deep Creek Lake and the withdrawal point is north of the Deep Creek Lake Dam, about three miles west of Thayerville, Garrett County, Maryland.

5. Right of Entry - The Permittee shall allow authorized representatives of the Administration access to the Permittee's facility to conduct inspections and evaluations necessary to assure compliance with the conditions of this permit. The Permittee shall provide such assistance as may be necessary to effectively and safely conduct such inspections and evaluations.
6. Permit Review - The Permittee will be queried every three years (triennial review) regarding water use under the terms and conditions of this permit. Failure to return the triennial review query will result in suspension or revocation of this permit.
7. Permit Renewal - This permit will expire on the date indicated on the first page of this permit. In order to renew the permit, the Permittee shall file a renewal application with the Administration no later than 45 days prior to the expiration.
8. Permit Suspension or Revocation - This permit may be suspended or revoked by the Administration upon violation of the conditions of this permit, or upon violation of any regulation promulgated pursuant to Title 5 of the Environment Article, Annotated Code of Maryland (2013 Replacement Volume) as amended.
9. Change of Operations - Any anticipated change in appropriation which may result in a new or different use, quantity, source, or place of use of water shall be reported to the Administration by the Permittee by submission of a new application.
10. Additional Permit Conditions - The Administration may revise any condition of this permit or add additional conditions concerning the character, amount, means and manner of the appropriation or use, which may be necessary to properly protect, control and manage the water resources of the State, including lake levels, at any time it deems necessary. Condition revisions and additions will be accomplished by issuance of a revised permit.
11. Non-Transferable - This permit is non-transferable. A new owner may acquire authorization to continue this appropriation by filing a new application with the Administration. Authorization will be accomplished by issuance of a new permit.
12. Flow Measurement - The Permittee shall measure all water used by a method which accurately reflects the quantity withdrawn. The Permittee shall maintain a daily log, subject to inspection by an authorized representative of the Administration.
13. Withdrawal Reports - The Permittee shall submit to the Administration, semi-annually (July-December, no later than January 31st and January-June, no later than July 31st), water use records. These records shall show the total quantity of water withdrawn each month under this permit.

14. Rule Band and Operation Protocols –

A. The Rule Band: The upper and lower rule bands are the highest and lowest desirable reservoir levels at the end of each month. The upper and lower ends of month elevations are defined in the following table. When lake levels are above the upper rule band, the Permittee may release water as needed to draw down the lake to a level within the rule band. Elevations are given in feet above mean sea level. A graph depicting the upper and lower rule bands is incorporated by reference to the permit as Exhibit A.

Project Operating Rule Band

Month	Upper Band Elevations	Lower Band Elevations
January	2457.9	2455.0
February	2457.9	2456.0
March	2459.5	2458.0
April	2461.0	2459.6
May	2461.0	2460.0
June	2461.0	2460.0
July	2461.0	2459.0
August	2460.0	2458.0
September	2459.0	2457.0
October	2458.0	2456.0
November	2457.9	2455.0
December	2457.9	2455.0

B. Operation Protocols and Excursions: The Permittee shall operate the Deep Creek hydroelectric project (project) according to the project operating rules specified throughout this permit such that water elevations in Deep Creek Lake are maintained within the operating rule band except that:

(I) Excursions of up to 0.3 feet above elevation 2461.0 shall last not more than 10 consecutive days;

(II) Excursions of up to 0.3 feet above the upper rule band, but below elevation 2461.0, shall last not more than 21 consecutive days;

(III) From March 1 to May 1, during the refill, intermittent excursions above the upper rule band are allowed to capture rain events and snowmelt as determined necessary to achieve a lake elevation of 2461.0 by May 1;

(IV) Excursions may occur as specified: a) in condition 16 for temperature enhancement in the Youghiogheny River; b) in condition 17 for minimum flow releases; and c) in condition 19 for scheduled releases for whitewater recreation;

(V) In the event of unusual or emergency conditions, the normal operating rules may be modified or suspended until such time as unusual or emergency conditions no longer exist. Unusual or emergency conditions are defined as:

- (A) A system emergency, defined as maximum emergency generation under the PJM Interconnection hierarchy of emergency orders, or emergency loading of spinning reserve capacity, or emergency control of transmission facility loading;
- (B) A site emergency such as failure or probable failure of the dam that requires maximum release for rapid drawdown of the reservoir;
- (C) A site emergency or other forced (unscheduled) outage requiring shutdown of the intake, power tunnel, penstocks, or generating units, resulting in the inability to generate or to operate the proposed minimum release bypass;
- (D) Maintenance of the dam or repair of lake shoreline erosion which requires lowering of lake level below the lower rule band to allow access or to control inflow; and
- (E) Actual or forecast extraordinarily high runoff or rainfall which requires unlimited generation in order to keep the lake level from spilling over the top of the dam spillway.

The duration and timing of planned outages shall be approved in advance by the Administration. In proposing planned outages, the Permittee shall detail reasons why the outage is necessary as well as how the outage will impact the community, and the stakeholders including the fishery and whitewater recreation in the Youghiogheny River. To the extent possible, planned outages shall not occur during mid-April through mid-October.

C. Special Operating Conditions

(I) The Permittee shall manage its discretionary generation withdrawals to achieve a lake elevation of 2461.0 by the beginning of May each year. If conditions result in the inability to achieve a lake elevation of 2461.0 by May 1, the Permittee must notify the Administration in writing by May 7 of that year with an explanation as to why a lake elevation of 2461 could not be achieved and their predictions on when they expect to achieve a lake elevation of 2461.0.

(II) The Permittee shall use generation to immediately reduce lake elevation above 2461.3 feet.

(III) The Permittee shall operate to prevent lake elevation from exceeding 2461.0 feet for Memorial Day weekend and the first week in July.

(IV) The Permittee shall use a predictive model for managing discretionary generation between May 1 and November 1. The predictive model shall be used to help maintain lake elevations no more than 0.1 feet below the upper rule band. The permittee shall use a predictive model that has been calibrated to predict water availability for generation at Deep Creek lake. The Permittee shall use a model that has the capacity to forecast at least 30 days out and uses data on current lake levels, rule band elevations, recent local precipitation, weather forecasts, precipitation accumulation forecasts, flow data from

USGS gages at Cherry Creek, and the Youghiogeny River, as well as scheduled releases and anticipated temperature enhancement releases.

(V) The Permittee shall not perform discretionary generation between May 1 and November 1 if lake levels are more than 0.1 feet below the upper rule band.

15. Lake Level Monitoring and Reporting - The Permittee shall measure and record the water elevations in Deep Creek Lake at approximately the same time each day. The Permittee shall report the results of water-level monitoring, including excursions above the upper rule band and below the lower rule band, to the Administration on an annual basis, and shall maintain a daily log of measurements, subject to inspection by the Administration. Beginning in the first annual report after the issuance of this permit, the permittee shall include in the report an analysis of lake levels compared to the rule bands and past trends during the summer recreation season.
16. Temperature Enhancement in the Youghiogeny River - The Permittee shall implement the revised Youghiogeny River Water Temperature Enhancement Plan dated April 30, 2020, unless subsequently modified pursuant to this condition as outlined below. The plan shall be implemented during the months of June, July, August, and the first 15 days of September to prevent temperatures in excess of 25 degrees in the Youghiogeny River from the project tailrace to the bridge at Sang Run. The plan includes a triggering mechanism and real-time monitoring of river temperature. The plan includes a protocol for predicting temperature releases on the morning of the release, as early as four hours in advance. The plan requires an additional period of temperature monitoring at Sang Run from May 15-May 31. The plan is incorporated by reference to this Permit as Exhibit B.

The Permittee shall submit a monthly report to the Administration detailing all occurrences of water temperatures exceeding 25 degrees C by the 14th day of the month following the month during which the exceedance(s) occurred. The report may include proposed measures or changes to the plan to preclude future incidents where water temperature exceeds 25 degrees C. The Permittee shall include the results of temperature monitoring in an annual report. The Permittee shall, in consultation with the Administration, continue to refine or revise the plan with the objective of maintaining water temperatures in the river between the project tailrace and Sang Run from exceeding 25 degrees C at all times during the months of June, July, August and the first 15 days of September. All plan revisions must be approved in writing by the Administration and reflected in a document updating the April 30, 2020 Youghiogeny River Water Temperature Enhancement Plan, prior to implementation.

17. Minimum Flow Releases - The Permittee shall maintain and operate a bypass system at the project to maintain a minimum flow of 40 cubic feet of water per second (cfs) in the Youghiogeny River at USGS stream gage 03076100 (Youghiogeny River at Hoyes, Maryland) downstream of the project tailrace. The minimum flow shall be maintained at all times at the stream gage. A reduction in the minimum flow below 40 cfs may be requested of the Administration when reservoir levels are one foot or more below the lower rule band.

A report of flow estimates and the occurrence of bypass releases shall be submitted to the Administration in an annual report, and a daily log of such releases shall be maintained, subject to inspection by an authorized representative of the Administration.

The Permittee is also required to provide a continuous flow of at least 9 cfs in the tailrace, during the months of June, July August and September even when there is no minimum bypass flow as required by this condition.

18. Dissolved Oxygen Mitigation - The Permittee shall maintain and operate a tailrace weir designed to increase dissolved oxygen levels in all project discharges above Maryland water quality standards as outlined in COMAR 26.08.02 (5 ppm minimum, 6 ppm daily average). The Permittee shall provide a plan to the Administration by October 31, 2020 to ensure all wicket gate losses and bypass discharges also meet Maryland's dissolved oxygen water quality standards upon entrance to the Youghiogheny River. The plan shall include relevant supporting data and analysis to demonstrate that the proposed modifications will achieve the standards. The plan shall include project milestones and a final compliance date no later than June 1, 2021. The Permittee shall provide monthly status updates on progress to implement the plan.

The Permittee shall monitor dissolved oxygen levels of project discharges by a method approved by the Administration during June 1 to October 1. The results of dissolved oxygen monitoring shall be submitted to the Administration in an annual report. The Permittee shall maintain a log of measurements, subject to inspection by an authorized representative of the Administration.

19. Releases for Whitewater Recreation

A. Whitewater Releases. There are two types of scheduled whitewater releases (WWR); standard and special releases. All WWR are subject to the rule band and operation requirements in Condition 14 and the parameters defined below in paragraph B. The intent of WWR is to enhance recreational whitewater enjoyment from the project tailrace to Friendsville.

- I) Standard WWR - With the exception of the special WWR conditions in paragraph II) below, standard WWR will occur between April 15th and October 15th in accordance with the following table.

Month	Sunday	Monday	Friday	Saturday
April	None	None	None	All Saturdays After April 14 th (1000 Hour to 1300 Hour)
May	None	First two Mondays (1000 Hour to 1300 Hour)	First three Fridays (1000 Hour to 1300 Hour)	First Saturday (1000 Hour to 1300 Hour)
May - Memorial Day Weekend	Odd Numbered Years (1000 Hour to 1300 Hour)	Odd Numbered Years (1000 Hour to 1300 Hour)	Even Numbered Years (1000 Hour to 1300 Hour)	Even Numbered Years (1000 Hour to 1300 Hour)
June	None	Every Monday (1100 Hour to 1400 Hour)	Every Friday (1100 Hour to 1400 Hour)	Last two Saturdays (1100 Hour to 1400 Hour)
July	None	Every Monday (1100 Hour to 1400 Hour)	Every Friday (1100 Hour to 1400 Hour)	Every Saturday (1100 Hour to 1400 Hour) *
August	None	Every Monday (1100 Hour to 1400 Hour)	Every Friday (1100 Hour to 1400 Hour)	Every Saturday (1100 Hour to 1400 Hour)
September	None	Every Monday (1000 Hour to 1300 Hour)	Every Friday (1000 Hour to 1300 Hour)	First two Saturdays (1000 Hour to 1300 Hour)
October	None	All Mondays before October 16th (1000 Hour to 1300 Hour)	All Fridays before October 16th (1000 Hour to 1300 Hour)	First Saturday (1000 Hour to 1300 Hour)

*May be modified by Annual Team Friendsville Special WWR.

II) Special WWR. Special WWR must be requested in writing to the Administration no later than 30 calendar days before the special WWR and will, at a minimum, include:

Annual Team Friendsville Upper Yough Race WWR - The fourth Saturday WWR in July will be an extended six (6) hour continuous release between 1100 hours and 1700 hours to accommodate the Annual Team Friendsville Upper Yough Race. The annual team Friendsville Upper Yough Race WWR is contingent on the lake level elevation being higher than the one (1) foot below the lower rule band on the day of the WWR.

Gauley Week WWR - Gauley week releases include continuous three (3) hour releases from 1000 hours to 1300 hours on Tuesday, Wednesday, and Thursday of the week before the Gauley festival weekend in Summersville, West Virginia. The Gauley festival weekend is typically scheduled during the second half of September. Each day of the Gauley week WWR is contingent on the lake level elevation being higher than the lower rule band.

III) Synchronization of WWR with TER - On scheduled WWR days the Permittee is not required to run the TER protocol, unless the WWR would not occur due to low lake levels.

B. From April 15th through October 15th, the following additional operating rules will also be in effect:

- D) The Permittee shall not operate the project for hydroelectric generation before 1300 hours when natural flows as measured at Friendsville USGS gage 03076500 (Friendsville) are between 1300 and 2500 cfs unless an unusual or emergency condition exists, or the lake level exceeds the upper rule band.
- II) When natural flows as measured at Friendsville are greater than 600, but less than 1300 cfs, and lake elevation is within the rule bands specified in Condition 14, powerhouse discharge shall be no greater than the maximum discharge of one turbine for the first three (3) hours of scheduled generation.
- III) During weeks that contain a Saturday release, the Permittee shall make releases on Saturdays when the lake level is higher than an elevation that is one foot below the lower rule band, and also on Sundays, Mondays and Fridays (if scheduled) when the lake level is above the lower rule band.
- IV) During weeks that do not contain a Saturday release, the Permittee shall make releases on Fridays when the lake level is higher than an elevation that is one foot below the lower rule band, and also on Sundays and Mondays (if scheduled) when the lake level is above the lower rule band.
- V) The Permittee may vary powerhouse discharge during any WWR in accordance with either of the following two approaches except during the Annual Team Friendsville Upper Yough Race WWR.
 - 1) Third hour regulation approach:
 - i) When natural flow as measured at Friendsville is less than 600 cfs, the powerhouse discharge may vary between 320 cfs and a maximum discharge of two turbines during the third hour of any WWR so long as the powerhouse discharge during the first two hours is held constant at a maximum discharge of two turbines.
 - ii) When natural flow as measured at Friendsville is greater than 600 cfs, the powerhouse discharge may vary between 220 cfs and a maximum discharge of one turbine during the third hour of any WWR so long as the powerhouse discharge during the first two hours is held constant at a maximum discharge of one turbine.

- 2) All hour regulation approach:
 - i) When natural flow as measured at Friendsville is less than or equal to 300 cfs, the powerhouse discharge will be held constant at a maximum discharge of two turbines for all three hours of any WWR.
 - ii) When natural flow as measured at Friendsville is between 300 and 600 cfs, the powerhouse discharge may vary between 320 and a maximum discharge of two turbines during any part of any three hour WWR.
 - iii) When natural flow as measured at Friendsville is greater than 600 cfs but less than 1300 cfs, the powerhouse discharge may vary between 220 cfs and a maximum discharge of one turbine during any part of any three hour WWR.
- VI) If the flow at USGS stream gage 03076100 (Youghiogheny River at Hoyes, MD) is less than 300 cfs when the Permittee is making a discretionary generation release (i.e. a 'low flow gen release ') the Permittee shall alternate releases between steady flow and variable flow from April 15 to October 15 and:
 - 1) Begin the first release with a minimum of two hours of steady flow from both turbines for the benefit of whitewater recreation. Consequently, the second low flow gen release would be a variable release, and the third release to be two hours of steady flow from both turbines and so on.
 - 2) Update the phone line messaging and the Permittee's website to inform the public of the low flow gen release, and whether it is going to be a steady flow or a variable release.
20. Announcement of Expected Releases - On each Thursday, the Permittee shall place on a recorded message accessible to the public by telephone, a forecast of expected releases for the following week. Each morning, between 0700 and 0800 hours, the Permittee shall place on the recorded message information on the scheduled releases for the next 48 hours. The Permittee shall also maintain a website publishing the scheduled releases and anticipated releases within the next 48 hours.
21. Zebra Mussel Monitoring - The Permittee shall implement a zebra mussel (*Dreissena polymorpha*) monitoring program approved by the Administration. The results of such monitoring shall be submitted in an annual report.

22. Notice of Generation Releases - At strategic locations, selected in consultation with the Administration and Maryland Park Service of the Department of Natural Resources, and including the Sang Run and Hoyes Run access areas, the Permittee shall prominently display warning notices regarding the hazard of rapid water level fluctuations associated with water releases from Deep Creek Lake.
23. Annual Report - The Permittee shall submit an annual report to the Administration no later than January 31 of each year. The report shall include the following data for the previous calendar year:
- A) Lake level monitoring (Condition 15);
 - B) Temperature monitoring (Condition 16);
 - C) Minimum flow release monitoring (Condition 17);
 - D) Dissolved oxygen monitoring (Condition 18);
 - E) Releases unsuitable for whitewater recreation (Condition 19); and
 - F) Zebra mussel monitoring (Condition 21).
24. Permit Supersession - This permit supersedes the Appropriation and Use granted by the following prior permit(s) issued to:

Brookfield Power Piney and Deep Creek LLC on June 1, 2011 (GA1992S009(08))

saeid kasraei 9/2/2020
Saeid Kasraei Date
Administrator
Water Supply Program