

MEMORANDUM

July 21, 2022

TO: Federal Energy Regulatory Commission (FERC)

FROM: Blue Ridge Environmental Defense League (BREDL)

SUBJECTS: (1) Request that FERC deny request from Mountain Valley Pipeline, LLC (MVP, LLC) for an extension of time until October 13, 2026 to complete construction of the Mountain Valley Pipeline (MVP)
(2) In the event that MVP, LLC is granted an extension of time to complete construction of the MVP, BREDL requests that

- revised Erosion and Sediment Control (ESC) and Stormwater Management (SWM) plans for the MVP be a condition of the requested extension
- consideration of cumulative aquatic impacts of building both the MVP and the Southgate extension be a condition of the requested extension

CONDITION #1 → REVISED ESC & SWM PLANS

We request that any extension of time for construction of the MVP be granted on the condition that FERC require revision of the ESC and SWM plans for the MVP. These revisions are described in BREDL's letter to Virginia Department of Environmental Quality (DEQ) dated April 2, 2021 and six attachments thereto. Copies of the letter and attachments have been filed at www.ferc.gov as part of this Motion to Intervene. They are also available for viewing at: <https://app.box.com/s/kooidgtl4p82exurcevw9hdxxhb81x4y>

CONDITION #2 → CONSIDERATION OF CUMULATIVE AQUATIC IMPACTS OF BUILDING BOTH THE MVP AND SOUTHGATE EXTENSION

We request that any extension of time for construction of the MVP be granted on the condition that FERC require MVP, LLC to consider the cumulative aquatic impacts of building both the MVP and the Southgate extension. A description of the factors to be considered under this condition are described below.

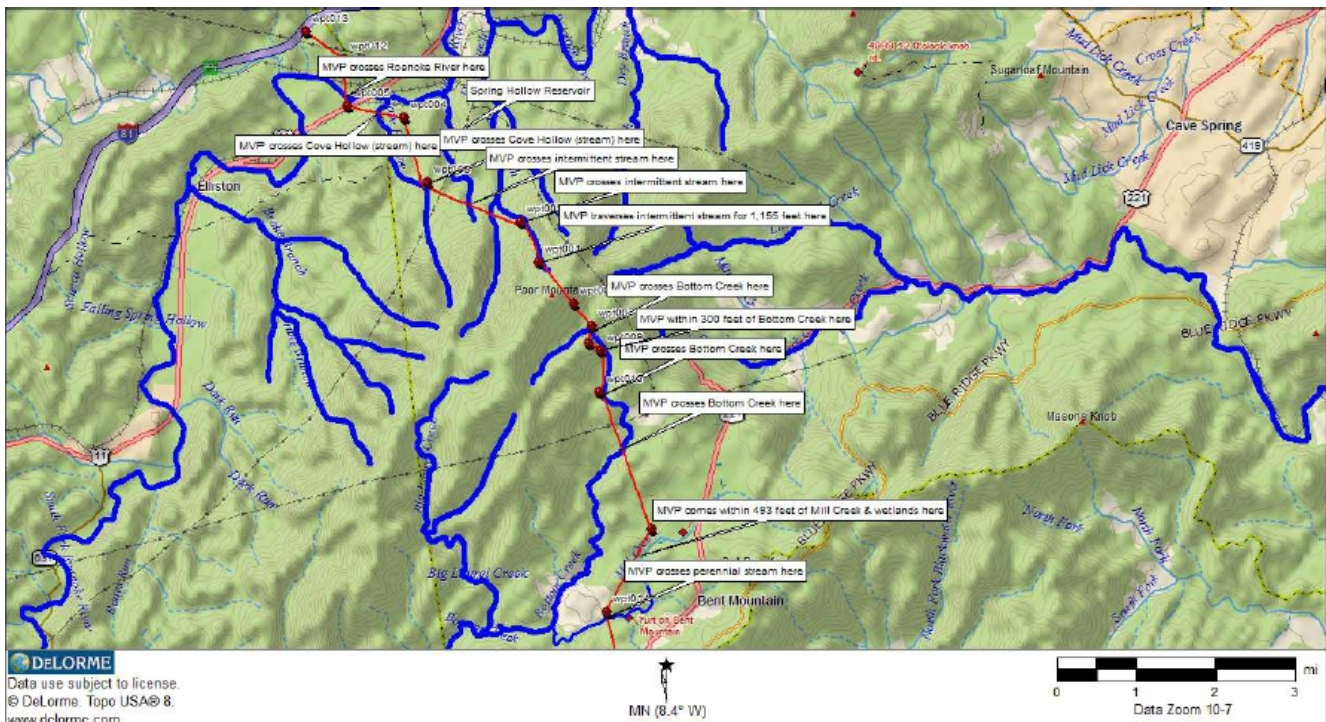
MVP AND SOUTHGATE STREAM CROSSINGS IN VIRGINIA

This section provides an overview of the aquatic resources crossed by both the MVP and Southgate in Virginia.

Roanoke River System

The North and South Forks of the Roanoke River system and their tributaries are extensively crossed by the Mountain Valley Pipeline (MVP) in Roanoke and Montgomery Counties, VA. The total number of stream crossings in Roanoke and Montgomery Counties is reported as 85 in MVP's Waterbody Crossing Tables in the October, 2015 MVP Resource Report 2, Appendix 2-A.

The map below illustrates the MVP's crossings of the headwater streams at the origin of the South Fork of the Roanoke River in Roanoke and Montgomery Counties, VA.



As shown in **Attachment 1**, after joining near Lafayette in Montgomery County, VA, the North and South Forks of the Roanoke River proceed in an easterly direction as “Roanoke River”. The Roanoke River empties into Smith Mountain Lake, then exits on the western side of the lake. It makes an abrupt turn northward at Leesville Lake in Pittsylvania County, VA, then proceeds in a southeasterly direction to where it merges with the Dan River to form Kerr Reservoir.

A briefing issued by City of Roanoke on September 5, 2017 estimates that the sedimentation flowing downstream from the MVP's massive construction project through mountain streams in Roanoke County will deposit an additional 1,039 tons of sediment per year into the Roanoke River, costing the city \$36 million annually for removal from the city's drinking water supply.

Blackwater System

The Waterbody Crossing Tables in the October, 2015 MVP Resource Report 2, Appendix 2-A list 128 different waterbodies that are crossed by the MVP in Franklin County, VA, all of which are in the Blackwater system. These include:

- 3 tributaries just east of the Blue Ridge Parkway forming the headwaters of the North Fork of the Blackwater River
- 8 tributaries whose water flows into Little Creek, then into the Blackwater River
- Over 20 tributaries of Teels Creek in an area where the pipeline follows Teels Creek for about 4.25 miles
- The Blackwater River and its tributaries, crossed at least 12 times east of U.S. 220
- 22 tributaries emptying into Smith Mountain Lake.

As shown on **Attachment 1**, the Blackwater River flows eastward and joins with the Roanoke River at Smith Mountain Lake.

Pigg River System

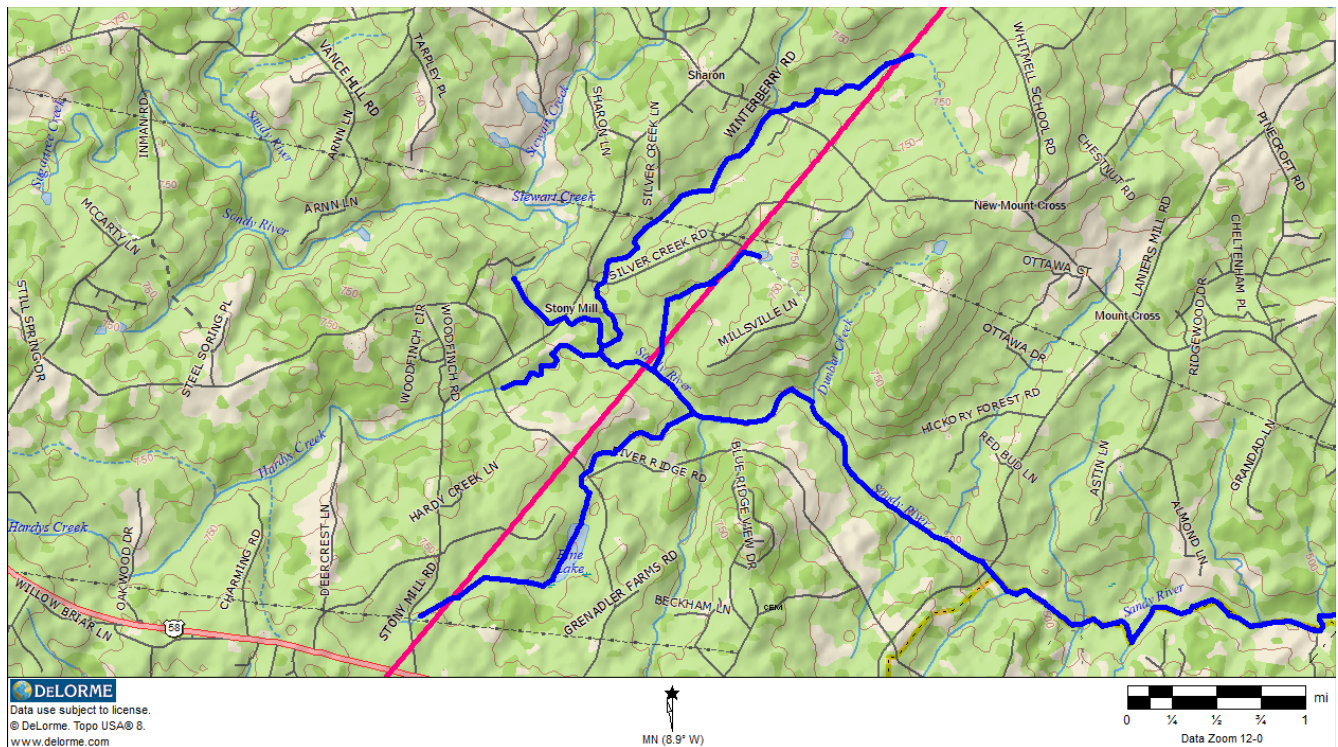
As shown on **Attachment 1**, the tributaries of the Pigg River are crossed extensively by the MVP south of Smith Mountain Lake before the Pigg joins the Roanoke River at Leesville Lake.

Bannister River System

As shown on **Attachment 2**, the Bannister River and its tributary, White Oak Creek, are crossed by the Southgate extension in Pittsylvania County. Notably, the Southgate crosses through 1.5 miles of wetlands associated with White Oak Creek, then crosses White Oak Creek twice. The Southgate crosses the Bannister River once, about $\frac{3}{4}$ mile downstream of the river's confluence with White Oak Creek. The Bannister then flows into the Dan River east of South Boston.

Sandy River System

The Sandy River and its tributaries are crossed extensively by the Southgate in an area about 9 miles east of the City of Danville, VA. Please see close-up map showing the Southgate impacts to the Sandy River and tributies, below.



Dan River System

The Dan River is crossed by the Southgate once near Eden, NC. Please see map in **Attachment 3**. This crossing of the Dan River is located approximately 2.75 miles downstream of the Dan River Steam Station in Eden, the site of the 2014 Dominion Energy coal ash spill, which is discussed below.

The Dan and Roanoke Rivers join at the mouth of Kerr Reservoir in Mecklenburg County, VA.

This joining of the Dan and Roanoke Rivers at Kerr Reservoir combines into one water body the downstream impacts from nearly 300 pipeline crossings of freshwater streams (85 in Montgomery and Roanoke Counties, 128 in Franklin County, and 65 in Pittsylvania County), including the crossings of the North and South Forks of the Roanoke River and tributaries in Roanoke County, VA; North Fork of the Blackwater and Pigg Rivers and their tributaries in Franklin County, VA; the Bannister and Sandy Rivers and their tributaries in Pittsylvania County, VA; and the Dan River in Pittsylvania County, VA, including the impacts of Southgate's crossing 2.75 miles downstream from the Dominion 2014 coal ash spill into the Dan, discussed below.

SEDIMENT TRANSPORT AND IMPACTS

The MVP stream crossings have occurred and will occur approximately 80 miles upstream of the entrance to Kerr Reservoir, while the Southgate crossings will occur about 30 miles upstream of that entrance. Below we provide excerpts from articles and studies which may shed light on whether and how sediment from these pipeline crossings may reach and impact Kerr Reservoir.

Dynamics of sediment transport downstream

“Sediment Transport and Deposition” (Fondriest Environmental, Inc., December 5, 2014, www.fondriest.com/environmental-measurements/parameters/hydrology/sediment-transport-deposition/) provides useful information, extensively footnoted, on how and when sediment can travel downstream. Of interest to our discussion here is the description it provides of the range of particle size in freshwater sediment, ranging from clay particles at less than 0.00195 mm in diameter, to coarse sand reaching up to 1.5 mm in diameter. Sediments of all types and sizes are discussed in detail. During a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream.

Conveyed by the Fondriest publication and its sources is the fact that fine sediment can travel vast distances through freshwater systems. Illustrations of this ability of fine sediment to travel hundreds of miles downstream, as cited in the Fondriest study, are provided in articles published online by NOAA, linked below:

- <http://earthobservatory.nasa.gov/images/38273/sediment-in-the-gulf-of-mexico>
- <http://earthobservatory.nasa.gov/images/91794/flooding-in-the-central-and-southern-us>
- <http://earthobservatory.nasa.gov/images/91822/sediment-plume-off-the-louisiana-coast>

Impacts of excess sediments in freshwater systems

The Fondriest study cites a variety of authoritative references in its discussion of the impacts of excess sediment in freshwater systems, saying:

- ✓ “Too much sediment can cause poor water quality, algal blooms, and deposition build-up. For aquatic life, excessive suspended sediment can disrupt natural aquatic migrations, as well as damage gills and other organs.”
- ✓ “Diminished water quality occurs with unusually high sediment transport rates. Turbidity can cause water temperatures to rise (sediment absorbs more solar heat than water does).”
- ✓ “Rising water temperatures will cause dissolved oxygen levels to drop, as warm water cannot hold as much oxygen as cold water.”
- ✓ “Suspended sediment can block sunlight from reaching submerged plants, decreasing photosynthesis rates and lowering dissolved oxygen levels still further.”
- ✓ “Siltation, the name for fine sediment deposition, occurs when water flow rates decrease dramatically. This fine sediment can then smother insect larvae, fish eggs and other benthic organisms as it settles out of the water column.”
- ✓ “Increased sedimentation is considered one of the primary causes of habitat degradation.”

Anticipated impacts to Kerr Reservoir

The ability of fine sediment to travel hundreds of miles downstream from the nearly 300 stream crossings associated with construction of both the MVP and Southgate can be foreseen to have a profoundly detrimental impact to the aquatic habitats of Kerr Reservoir. This impact is further exacerbated by the Southgate's river crossing, downstream of a coal ash spill, as described below.

DAN RIVER COAL ASH SPILL

The spill and its impacts to the Dan River

The following excerpt is from “Draft Restoration Plan and Environmental Assessment for the Dan River Coal Ash Spill Natural Resource Damage Assessment and Restoration”, April, 2019, Dan River Natural Resource Trustee Council (https://www.cerc.usgs.gov/orda_docs/DocHandler.ashx?task=view&ID=5538):

The Dan River Coal Ash Spill began on or around February 2, 2014, from the collapse of a stormwater pipe beneath a coal ash slurry impoundment at the Duke Energy Dan River Steam Station (Site).

Ash material and ash pond water within the reservoir were released into the Dan River as a result of failure of a 48-inch diameter stormwater pipe comprised of concrete and corrugated metal. Up to an estimated 39,000 tons of ash and 27 million gallons of ash pond water were released into the Dan River. Coal ash is a gray, powdery byproduct of burning coal to produce energy. Coal ash is composed of materials remaining after coal is burned, including fine sand (called silica), unburned carbon, and various trace metals such as arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc; compounds that have potential to be chemicals of concern associated with the Dan River Coal Ash Spill. The Facility is less than 10 river miles from Virginia, and USFWS reconnaissance documented ash or ash-like material comingled with native sediment as far as 70 river miles downstream in the days immediately following the Spill.

Three removal actions were conducted related to the Spill. On February 8, 2014, a coal ash bar about 75 feet long and 15 feet wide which had as much as five feet of ash or ash/sand mix over the natural stream bottom was identified and subsequently removed (February 11-13, 2014), resulting in the recovery of 15 tons of coal ash and native sediment. Completion of the removal of a coal ash deposit (258 tons of a coal ash and river sediment mixture) occurred on July 7, 2014 at a location approximately two miles downstream from the Site on a native sandbar delta at the mouth of Town Creek with the Dan River. Removal of 2,500 tons of coal ash comingled with native sediment in a larger deposit upstream of the Schoolfield Dam in Danville, VA began on May 6, 2014, and was also completed in early July 2014 (although Abreu Grogan Park, where cleanup equipment was mobilized, was closed to public use to support cleanup activities between April 1 - August 1, 2014). In addition to these removal actions, a total of about 466 cubic yards of solids (ash/sediment mix) were removed from the water treatment plants at Danville and South Boston, VA and properly disposed of along with dredged material from the Dan River.

Pursuant to the CERCLA NRDAR regulations (43 C.F.R. §§ 11.23-11.25), the Trustees completed a Preliminary Assessment Screen and Determination (PAS) for the Dan River Coal Ash Spill in March, 2014. Based on the information in the PAS, the Trustees determined to proceed with the NRDAR process, provided a Notice of Intent to Conduct a Natural Resource Damage Assessment to the potentially responsible party, Duke Energy, and invited Duke Energy to participate in a cooperative NRDAR process. Duke Energy and the Trustees agreed to enter into a cooperative assessment agreement in order to facilitate the resolution of any claims for

natural resource damages (NRD)¹.

See *Funding and Participation Agreement Between [sic] the State of North Carolina, the Commonwealth of Virginia, the U.S. Department of the Interior, and Duke Energy Carolinas, LLC, Concerning Cooperative Natural Resource Damage Assessment, Restoration Planning, and Restoration Implementation Activities for the Duke Energy Dan River Steam Station Coal Ash Pond Site in Rockingham, NC. June 2014.*”

Impact of Southgate crossing 2.75 miles downstream of spill

Having the Southgate cross the Dan River 2.75 miles downstream of the site of the 2014 coal ash spill brings risk of accelerating the movement of the coal ash and associated toxins downstream through the Dan River channel and into Kerr Reservoir, causing a “second spill” of the ash which has already settled along the river bottom.

CUMULATIVE IMPACTS TO KERR RESERVOIR

Existing conditions in the Kerr Reservoir

On April 24, 2014, The Virginia Department of Health issued a Kerr Reservoir Coal Ash Release Fact Sheet (available at <https://epi.dph.ncdhhs.gov/oe/hace/docs/KerrReservoirCoalAshFactSheet.pdf>), which states that the Kerr Reservoir is 90 miles downstream of the Dan River coal ash spill, which occurred February 2, 2014. The Fact Sheet provides this statement of an existing fish consumption advisory for the Kerr Reservoir:

Due to historical activities not associated with the coal ash release, VDH has an existing fish consumption advisory for the Kerr Reservoir and it includes the Dan River and parts of the Hyco and Banister rivers. Certain species of fish in these water contain elevated levels of methylmercury and polychlorinated biphenyls (PCBs). Results of the analysis of fish tissue samples collected from the Dan River after the coal ash release do not warrant additional fish consumption advisories. For more information, visit: www.vdh.virginia.gov/epidemiology/DEE/PublicHealthToxicology/Advisories/.

Kerr Lake in North Carolina is covered by a statewide ban on eating largemouth bass due to methylmercury. For more information on fish consumption advisories in North Carolina visit: <http://epi.publichealth.nc.gov/oe/fish/advisories.html>.

MVP and Southgate impacts to the Kerr

The cumulative impacts to Kerr Reservoir of building both the Mountain Valley Pipeline and the Southgate extension would include:

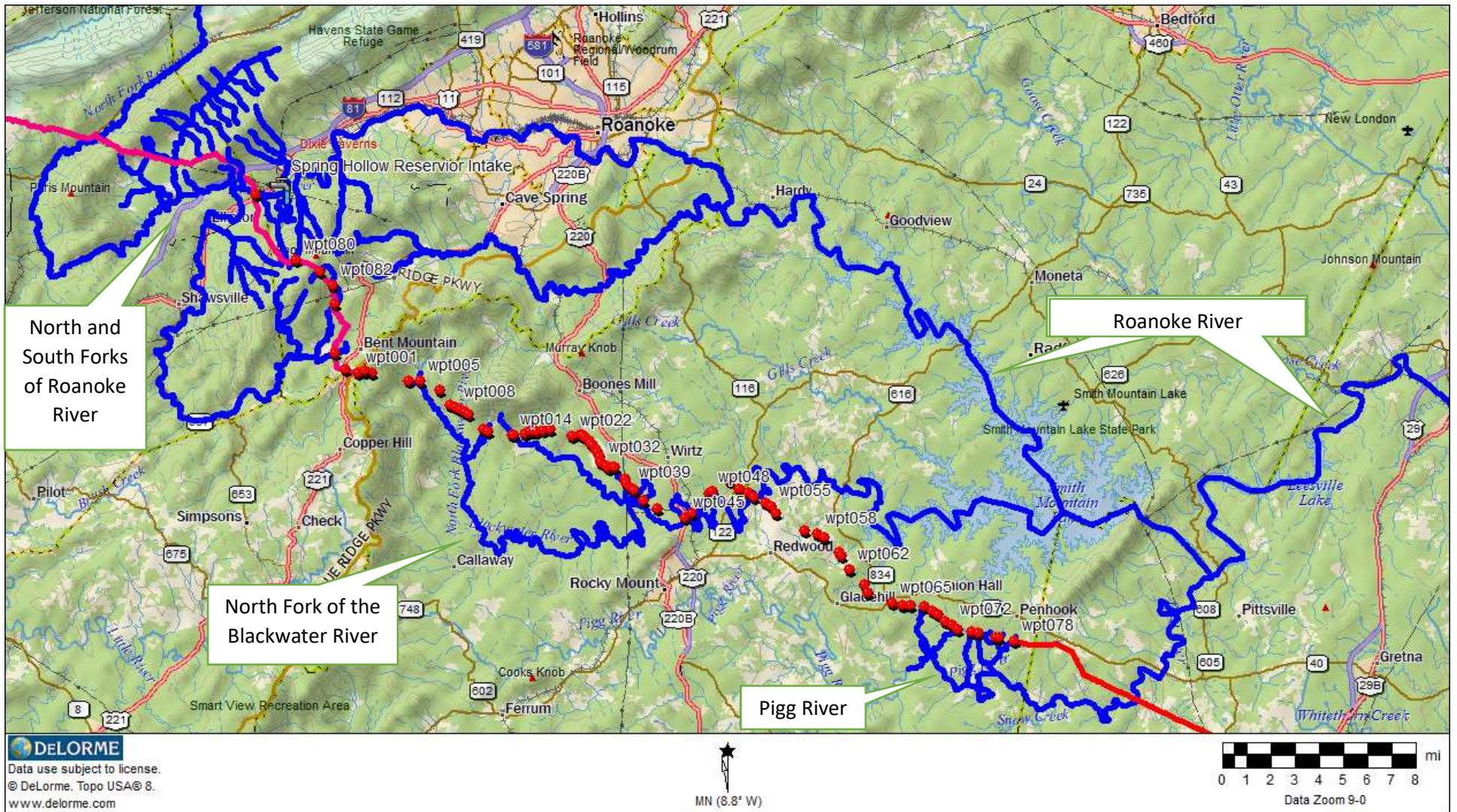
- **SEDIMENTATION** → delivering to the Kerr Reservoir the cumulative downstream sedimentation from hundreds of stream crossings resulting from construction of both the MVP and Southgate. These stream crossings include:
 - North and South Forks of the Roanoke River and tributaries in Roanoke County, VA;
 - North Fork of the Blackwater and Pigg Rivers and their tributaries in Franklin County, VA;
 - the Bannister and Sandy Rivers and their tributaries in Pittsylvania County, VA;
 - White Oak Creek and 1.5 miles of associated wetlands in Pittsylvania County;
 - the Dan River in Pittsylvania County, VA, which has been critically impaired by the 2014 coal ash spill in Eden, only 2.75 miles upstream from where the Southgate will cross.

- **HERBICIDES** → delivering to the Kerr Reservoir herbicides applied to potentially hundreds of stream crossings on both the MVP and Southgate, application of which is permitted during the first two years after pipeline construction, to control invasive plant species
- **TOXIC HERBICIDES AND FERTILIZERS** → Many of the areas crossed by the MVP in Virginia are agricultural. For decades, fertilizers and pesticides have entered the streams in those areas through runoff from agricultural fields. Older, more toxic pesticides that were used extensively, prior to their prohibition by the federal government, are now covered by sediment in the stream beds. When the stream bed sediments are disturbed, the older layers of fertilizer and pesticides are released to the stream water. Algal blooms can result from the increased amount of fertilizer available. Algal blooms are known to cause death of aquatic organisms. Toxic pesticides are also known to cause death of aquatic organisms.
- **COAL ASH** → precipitating a re-introduction of the coal ash and associated toxins into the Dan River and Kerr Reservoir as a result of the Southgate's crossing the Dan River only 2.75 miles downstream of the coal ash site
- **WARMING OF STREAM WATERS** → impacts to aquatic species in Kerr Reservoir resulting from warming of stream waters induced by removal of miles of riparian tree cover during construction and maintenance of the MVP and Southgate. Warming also occurs as a result of sedimentation (see discussion of Fondriest study, above).
- **SEDIMENT COMBINED WITH COAL ASH, HERBICIDES, FERTILIZERS, AND WARMING** → cumulative impacts to Kerr Reservoir of (a) sediment, (b) re-introduction of coal ash into the Dan River, (c) herbicides and fertilizers, and (d) warming of stream waters, all resulting from construction of the MVP and Southgate.

Attachments:

- ✓ Attachment 1 – PATH OF MOUNTAIN VALLEY PIPELINE CROSSING THE ROANOKE, BLACKWATER, AND PIGG RIVER SYSTEMS
- ✓ Attachment 2 – PATH OF SOUTHGATE EXTENSION CROSSING THE BANNISTER, SANDY, AND DAN RIVER SYSTEMS
- ✓ Attachment 3 – COMBINED RIVER SYSTEM CROSSINGS OF MOUNTAIN VALLEY PIPELINE AND SOUTHGATE EXTENSION

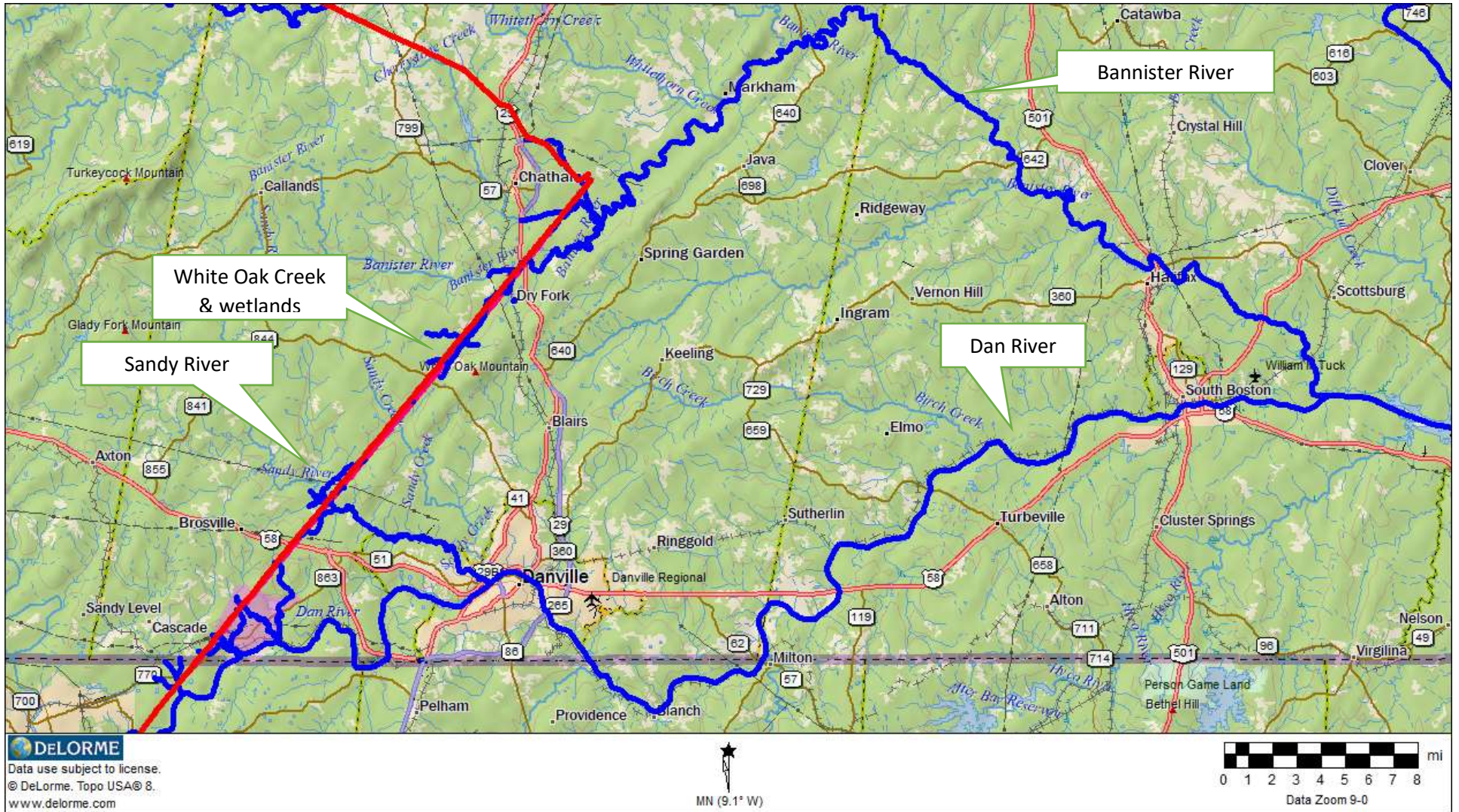
ATTACHMENT 1



PATH OF MOUNTAIN VALLEY PIPELINE CROSSING THE ROANOKE, BLACKWATER, AND PIGG RIVER SYSTEMS

- Red line** = path of Mountain Valley Pipeline as it crosses the North and South Forks of the Roanoke River and their tributaries in Roanoke County, VA
- Red dots** = stream crossings along path of Mountain Valley Pipeline as it crosses the North and South Forks of the Blackwater River, the Pigg River, and their tributaries in Franklin County, VA
- Blue lines** = Roanoke River system, Blackwater River system, and Pigg River system

ATTACHMENT 2

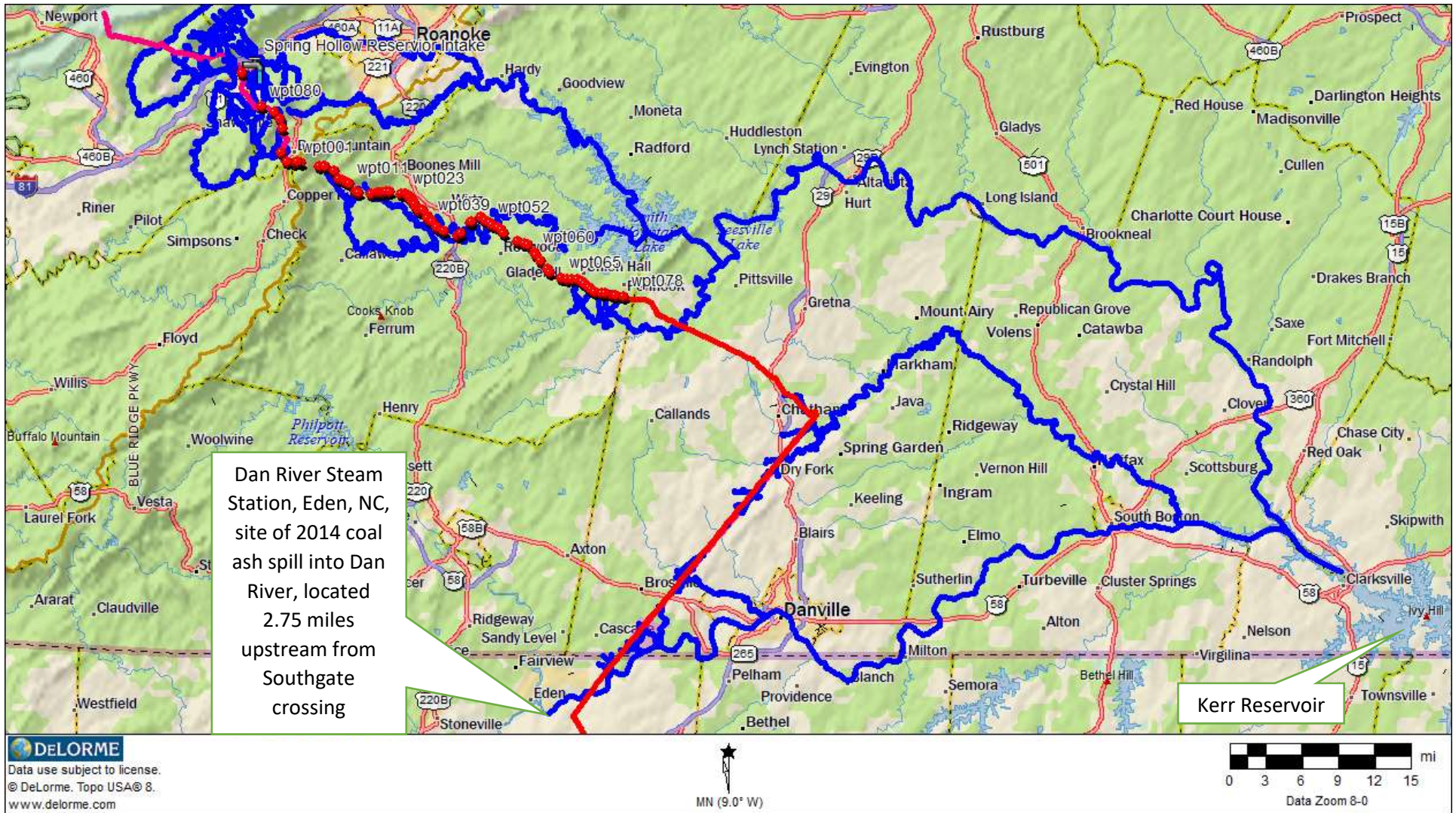


PATH OF SOUTHGATE EXTENSION CROSSING THE BANNISTER, SANDY, AND DAN RIVER SYSTEMS

Red line = path of the Southgate extension as it crosses the Bannister, Sandy, and Dan River and their tributaries in Pittsylvania County, VA

Blue lines = Bannister River, Sandy River, and Dan River and their tributaries; White Oak Creek and wetlands

ATTACHMENT 3



COMBINED RIVER SYSTEM CROSSINGS OF MOUNTAIN VALLEY PIPELINE AND SOUTHGATE EXTENSION

Red lines and dots = path of the Mountain Valley Pipeline and Southgate extension as they cross the Roanoke, Blackwater, Bannister, Sandy, and Dan River systems

Blue lines = North and South Fork of the Roanoke River and tributaries; North Fork of the Blackwater River and tributaries; Bannister River and tributaries; and Sandy River, all emptying into Dan River and Kerr Reservoir downstream of pipeline crossings; the Southgate extension crosses the Dan River 2.75 miles downstream of the site of the 2014 Dan River coal ash spill in Eden, NC.