

**DIRECT TESTIMONY
OF
WATSUN RANDOLPH
ON BEHALF OF
PIEDMONT ENVIRONMENTAL COUNCIL
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NOS. PUE-2007-00031 AND PUE-2007-00033**

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Watsun Randolph and my business address is 45 Horner Street Warrenton
3 Virginia.

4 **Q. WHERE ARE YOU EMPLOYED AND WHAT DO YOU DO?**

5 A. I am a Geographic Information Systems (GIS) specialist for Piedmont Environmental
6 Council (Piedmont).

7 **Q. WHAT IS YOUR PROFESSIONAL BACKGROUND AND HOW LONG HAVE
8 YOU BEEN PRODUCING MAPS?**

9 A. I will be supplementing my testimony shortly with my curriculum vitae.

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. Counsel for Piedmont asked me to authenticate and sponsor map exhibits for Piedmont.

12 **Q. CAN YOU DESCRIBE WHAT EXHIBITS WR-1 THROUGH WR-4 SHOW.**

13 A. These maps were created using data provided by Dominion Virginia Power (DVP) in
14 response to discovery questions by Piedmont, which I assume is the data used for the maps
15 created by Burns McDonald for DVP. The data provided by DVP included the routes for the
16 500-kV Meadow Brook-Loudoun transmission line alternatives (Loudoun line) proposed in these
17 proceedings and includes points along the routes representing the transmission towers and their
18 height, Digital Elevation Model (DEM), forest cover, DEM with forests cover at a height of 75
19 feet, and the resulting viewshed. This viewshed is based on the DEM augmented with forest

1 cover, and the point layer representing transmission towers. All of the data provided was within
2 a three mile buffer of the proposed Loudoun line. The red on the maps represents the areas
3 where at least one tower would be visible, the brown on the maps represents the forested areas
4 where the line would have limited and/or seasonable visibility. These areas would have more
5 pronounced visibility in the winter without leaves on the trees. The green is the forest cover
6 layer.

7 **Q. WAS ALL THE DATA USED TO PRODUCE THESE MAPS PROVIDED BY**
8 **DVP?**

9 A: Most, but not all. Piedmont created original data for the background hillshade from a USGS
10 DEM used in these maps. This is provided to show the topography of the area.

11 **Q. HOW DO THESE MAPS DIFFER FROM THE VIEWSHED ANALYSIS AND**
12 **DHR SITES MAP LOCATOR *SHEETS 1 TO 6* – WEST, VIEWSHED ANALYSIS AND**
13 **DHR MAP LOCATOR *SHEETS 1 TO 2, I-66* THAT ARE INCLUDED AS A PART OF**
14 **DVP’S DHR APPENDIX TO THE DEPARTMENT OF ENVIRONMENTAL QUALITY**
15 **(DEQ) SUPPLEMENT?**

16 A. Although they use the same data set, Piedmont’s maps are set in a smaller scale which,
17 together with the addition of the hillshade, creates a more factual context. Additionally, in the
18 viewshed analysis submitted by DVP all forested areas were shown in the map locator sheets as
19 “not visible” by obscuring the visibility map layer within the forested areas. In Exhibits WR 1-4
20 the visibility layer is displayed throughout the forest layer showing what a winter view without
21 leaf cover could look like.

1 **Q. HOW IS IT A MORE FACTUAL CONTEXT, MR. RANDOLPH?**

2 A. By showing the topography, labeling the major highways and towns, and presenting a
3 larger area I believe these maps present a truer visual representation, than the Burns &
4 McDonnel sponsored maps, of what impact the proposed transmission lines will have.. By
5 labeling areas that may have seasonal visibility as such these maps present a clearer picture of
6 the visual impact of the transmission lines.

7 **Q. CAN YOU DESCRIBE EXHIBITS WR-5?**

8 A. Yes. Exhibit WR-5 was created using viewshed data provided by Trans-Allegheny Interstate
9 Line Company (TrAILCo) for their portion of the proposed transmission line. The data provided
10 by TrAILCo included observation points on select historic sites near the transmission line, a
11 DEM, the proposed routes, and a resulting viewshed layer from these sites. The red on the map
12 show the theoretical areas of visibility from the select observation points (represented by black
13 dots on the map). I believe this exhibit illustrates several flaws in the TrAILCo “Historic Site
14 Viewshed Analysis.” Specifically, their analysis fails to make any allowance for tree cover, fails
15 to run a viewshed analysis against other resources (including public access points such as
16 impacted national parks, and scenic roads) and also does not depict the complete viewshed where
17 the transmission line would be visible.

18 **Q. CAN YOU DESCRIBE EXHIBIT WR-6?**

19 A. Yes. Exhibit WR-6 was created using a viewshed analysis that Piedmont generated using
20 the data provided by TrAILCo. Observation points were made by placing a dot every 500 feet
21 along the line (as done in the DVP analysis) using a conservative transmission tower height of
22 115 feet. These points were used to run a viewshed analysis of the line using the original DEM
23 provided by TrAILCo (not the DEM provided containing the 140 foot ‘virtual wall’ referenced in

1 TrAILCo's filing), which did not include any forest cover data. The red on the map is the result
2 of the viewshed and represents the potential winter (trees with leaves off) visibility of the
3 proposed transmission line.

4 **Q. WHAT IS SHOWN ON EXHIBIT WR-7?**

5 A. This map shows national and state parks as well as other public open spaces, and lands
6 protected by conservation easements in the vicinity of the proposed Loudoun line. This large
7 scale map shows the proximity of these resources to each of these proposed transmission lines.
8 The data sources are the Virginia Department of Conservation and Recreation (VDCR), the
9 Virginia Outdoors Foundation, and Piedmont.

10 **Q. MR. RANDOLPH, WHAT IS SHOWN ON EXHIBIT WR-8**

11 A: This map shows historic resources in the vicinity of the proposed transmission line. These
12 include historic districts, historic sites, and some of the nation's most significant Civil War
13 Battlefields. When considered in combination with Exhibit WR-7, the areas of protected lands
14 and historic resources are very significant. The data sources for this map are the Virginia DHR
15 and the Civil War Preservation Trust. The battlefield boundaries represent the official
16 boundaries of the American Battlefield Protection Program Act of 1996, as amended by the Civil
17 War Battlefield Preservation Act of 2002 (Public Law 107-359, 111 Stat. 3016, 17 December
18 2002).

19 **Q. CAN YOU DESCRIBE EXHIBIT WR-9**

20 A. This map shows additional scenic resources in the vicinity of the proposed transmission
21 lines. These include state scenic rivers, particularly the Rappahannock River, State scenic roads,
22 byways and parkways, and the Appalachian Trail. The scenic resources are established by State

1 and Federal authorities and protected for the benefit of the public. The data sources for this map
2 are the VDCR, Virginia Department of Transportation, and the Appalachian Trail Conservancy.

3 **Q. CAN YOU DESCRIBE WHAT EXHIBITS WR-10 THROUGH WR-13 SHOW.**

4 A. These maps show visibility of the transmission line up to 5 miles from the lines. These
5 maps were created using data provided by DVP in response to discovery questions asked by
6 Piedmont, which I assume is the data used for the maps created by Burns & McDonnell for DVP.
7 The data provided by DVP included the routes for the proposed 500-kV Loudoun line in these
8 proceedings, points along the routes representing the transmission towers and their height, DEM,
9 forest cover, DEM with forests cover at a height of 75 feet, and the resulting viewshed. This
10 viewshed is based on the DEM augmented with forest cover, and the point layer representing
11 transmission towers. All of the data provided was within a three mile buffer of the proposed,
12 alternative and segment underground routes within the proposed Loudoun line. To create a 5
13 mile buffer from the two above-ground routes, data was added that was not available from DVP's
14 3 mile buffer of the three routes. In the areas 3-5 miles from the proposed and alternative routes
15 where data was not provided a DEM augmented with forest cover (provided by VA Department
16 of Forestry) was added to the DEM provided by DVP, creating a DEM augmented with forest
17 cover of five miles from the line. Using this DEM a viewshed was run with the points
18 representing towers provided by DVP. The results of this are shown on the map provided in
19 Exhibits WR-10 through WR-13. The red on the maps represents the areas where at least one
20 tower would be visible, the brown on the maps represents the forested areas where the line would
21 have limited and/or seasonable visibility. These areas would have more pronounced visibility in
22 the winter without leaves on the trees. The green is the forest cover layer. The other layers on

1 the map represent resources 3-5 miles from the line, which were not included in the viewshed
2 analysis provided by DVP.

3 **Q. WHY ARE THESE MAPS SIGNIFICANT, MR RANDOLPH?**

4 There are many significant resources including public lands (provided by VA Department of
5 Conservation and Recreation), historic districts, and historic sites (provided by DHR) in a
6 distance of 3-5 miles from the transmission line routes. These include Shenandoah National
7 Park, Skyline Drive, numerous local parks, Wildlife Management Areas, over twenty sites on the
8 National Register of Historic Places, and 15 historic districts either approved or proposed.

9 **THANK YOU, MR. RANDOLPH, I HAVE NO FURTHER QUESTIONS.**