

## **F – Historic Sites**

# *Project Review Application Form*

This application must be completed for all projects that will be federally funded, licensed, or permitted, or that are subject to state review. Please allow 30 days from receipt for the review of a project. All information must be completed before review of a project can begin and incomplete forms will be returned for completion.

## I. GENERAL PROJECT INFORMATION

1. Has this project been previously reviewed by DHR? YES \_\_\_ NO  DHR File # \_\_\_\_\_

2. Project Name Green Ridge Recycling and Disposal Facility

3. Project Location Cumberland County  
City \_\_\_\_\_ Town \_\_\_\_\_ County \_\_\_\_\_

4. Specify Federal and State agencies involved in project (providing funding, assistance, license or permit). Refer to the list of agencies and abbreviations in the instructions.

Lead Federal Agency NA – at this time

Other Federal Agency NA

State Agency Virginia Department of Environmental Quality – Piedmont Regional Office

### 5. Lead Agency Contact Information

Contact Person Mr. Jason Miller

Mailing Address 4949-A Cox Road, Glen Allen VA 23060

Phone Number 804-527-5028 Fax Number 804-527-5106

Email Address Jason.Miller@deq.virginia.gov

### 6. Applicant Contact Information

Contact Person Mr. Jerry Cifor

Mailing Address 12230 Deer Grove Road, Midlothian, VA 23112

Phone Number 802-379-1575 Fax Number NA

Email Address jerry.cifor@myfairpoint.net

## II. PROJECT LOCATION AND DESCRIPTION

7. USGS Quadrangle Name Whiteville (1981) and Trenholm (1979)

8. Number of acres included in the project 1,200± acres

### MAIL COMPLETED FORM AND ATTACHMENTS TO:

Virginia Department of Historic Resources  
Attention: Project Review  
2801 Kensington Avenue, Richmond, VA 23221  
[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

9. Have any architectural or archaeological surveys of the area been conducted? YES  NO

If yes, list author, title, and date of report here. Indicate if a copy is on file at DHR.  
Report in progress

10. Are any structures 50 years old or older within or adjacent to the project area? YES  NO

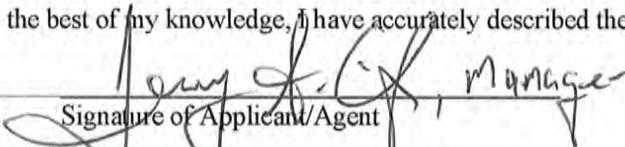
If yes, give date(s) of construction and provide photographs.  
Rosenwald School (aka Pine Grove School DHR file 24-5082); 1920+

11. Does the project involve the rehabilitation, alteration, removal, or demolition of any structure, building, designed site (e.g. park, cemetery), or district that is 50 years or older? If yes, this must be explained fully in the project description. YES  NO

12. Does the project involve any ground disturbance (e.g. excavating for footings, installing sewer or water lines or utilities, grading roads, etc.)? If yes, this must be explained fully in the project description. YES  NO

13. DESCRIPTION: Attach a complete description of the project. Refer to the instructions for the required information.

To the best of my knowledge, I have accurately described the proposed project and its likely impacts.

  
Signature of Applicant/Agent \_\_\_\_\_ Date 6/23/2019

**The following information must be attached to this form:**

- Completed DHR Archives search
- USGS map with APE shown
- Complete project description
- Any required photographs and plans

No historic properties affected     No adverse effect  
 Additional information is needed in order to complete our review.  
 We have previously reviewed this project. A copy of our correspondence is attached.

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Phone number \_\_\_\_\_ DHR File # \_\_\_\_\_

*This Space For Department Of Historic Resources Use Only*

**MAIL COMPLETED FORM AND ATTACHMENTS TO:**  
Virginia Department of Historic Resources  
Attention: Project Review  
2801 Kensington Avenue, Richmond, VA 23221  
[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

**VIRGINIA DEPARTMENT OF HISTORIC RESOURCES  
PROJECT REVIEW APPLICATION FORM  
PROJECT DESCRIPTION**

**Name of Project:** Green Ridge Recycling and Disposal Facility, LLC  
**General Location:** Cumberland County near Clinton, VA  
**Applicant:** Green Ridge Recycling and Disposal Facility, LLC  
**Date:** July 23, 2019

The Green Ridge Recycling and Disposal Facility, LCC (Green Ridge) is seeking permit approval from the Virginia Department of Environmental Quality – Piedmont Regional Office to construct and operate a privately-owned solid waste disposal facility in Cumberland County (County), Virginia. As part of this permitting, historic resources must be considered.

The proposed facility site is located in eastern Cumberland County, in Clinton, VA. The site is comprised of 13 parcels totaling approximately 1,200 acres north of U.S. Route 60 (Anderson Highway), and loosely bounded by Route 654 (Pinegrove Road) and Route 685 (Miller Lane). Current conceptual plans envision approximately 500+ acres being dedicated to the waste boundary (disposal footprint). A large portion of the site has been subjected to growing and harvesting timber, and agriculture. See attached Figure 1 and Figure 2.

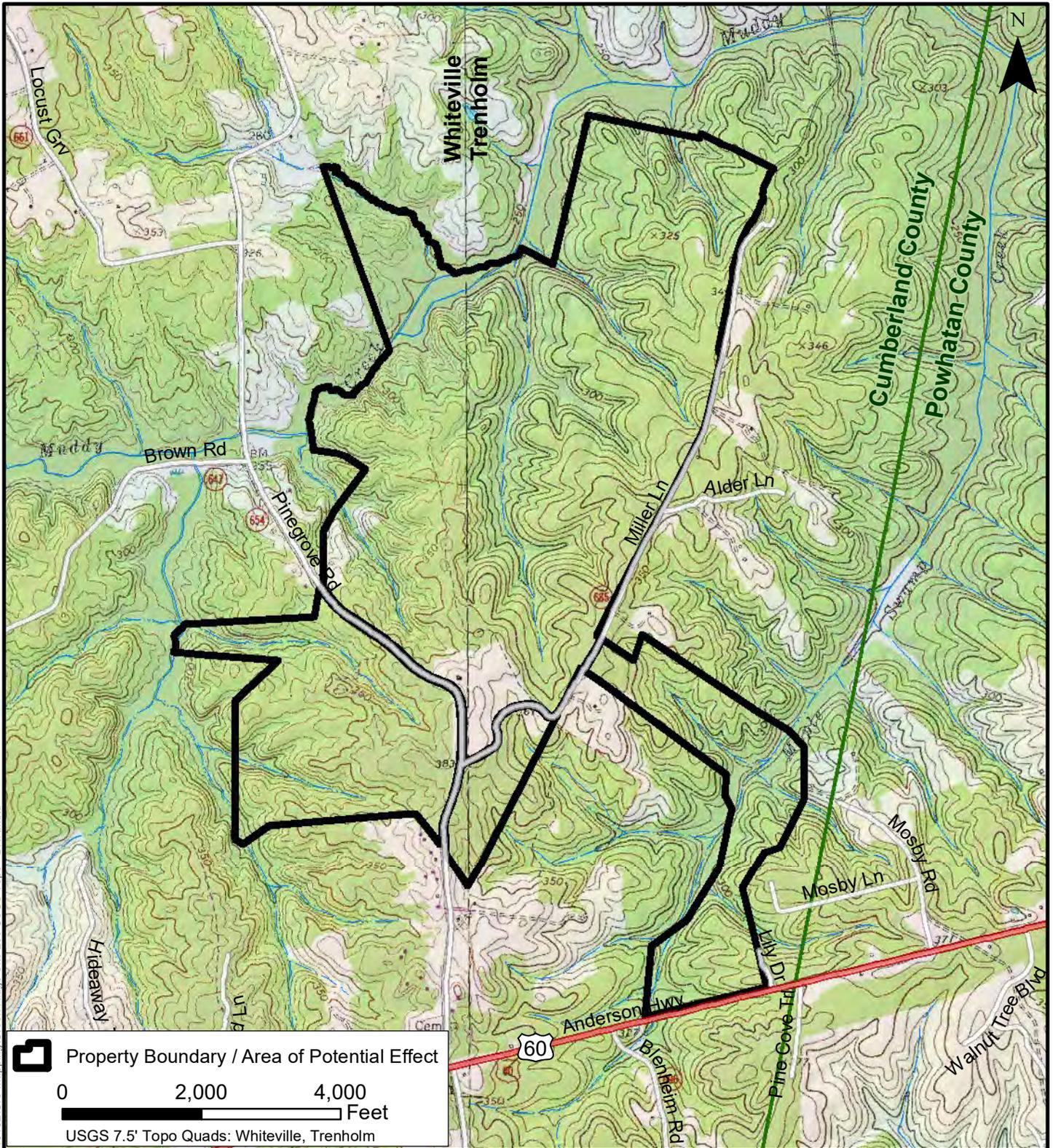
The project will include (in addition to the disposal areas) the following related facilities/operations: borrow and stockpile areas, stormwater management facilities, office and maintenance facilities, scales, citizen convenience center, leachate holding tanks and other ancillary operations. An private access road into the facility will exist off of Route 60 and cross Route 685 into the facility. In addition, Pine Grove Road and Miller Lane will undergo realignment.

Buffers negotiated with the County include not only the VDEQ regulatory buffers but also a minimum perimeter buffer of 200 feet adjacent to residential properties, and a minimum of 100 feet buffer elsewhere except along the access road where the buffer will be a minimum of 50 feet.

Work is currently in progress evaluating the site for historic and cultural resources. This report when completed will be submitted to VDHR.

Figure 3 provides the VCRIS information.

There is a known historic resource on property adjacent to the site as identified in the application form. See Figures 4 and 5 for information on Pine Grove School's location relative to the proposed project.



**Site Location Map**

Green Ridge  
 Recycling and Disposal Facility  
 Cumberland Co., Virginia

SCALE: 1" = 2000'

PROJECT: 18020117-010102



**Draper Aden Associates**

Engineering • Surveying • Environmental Services

2206 South Main Street  
 Blacksburg, VA 24060  
 540-552-0444 Fax: 540-552-0291

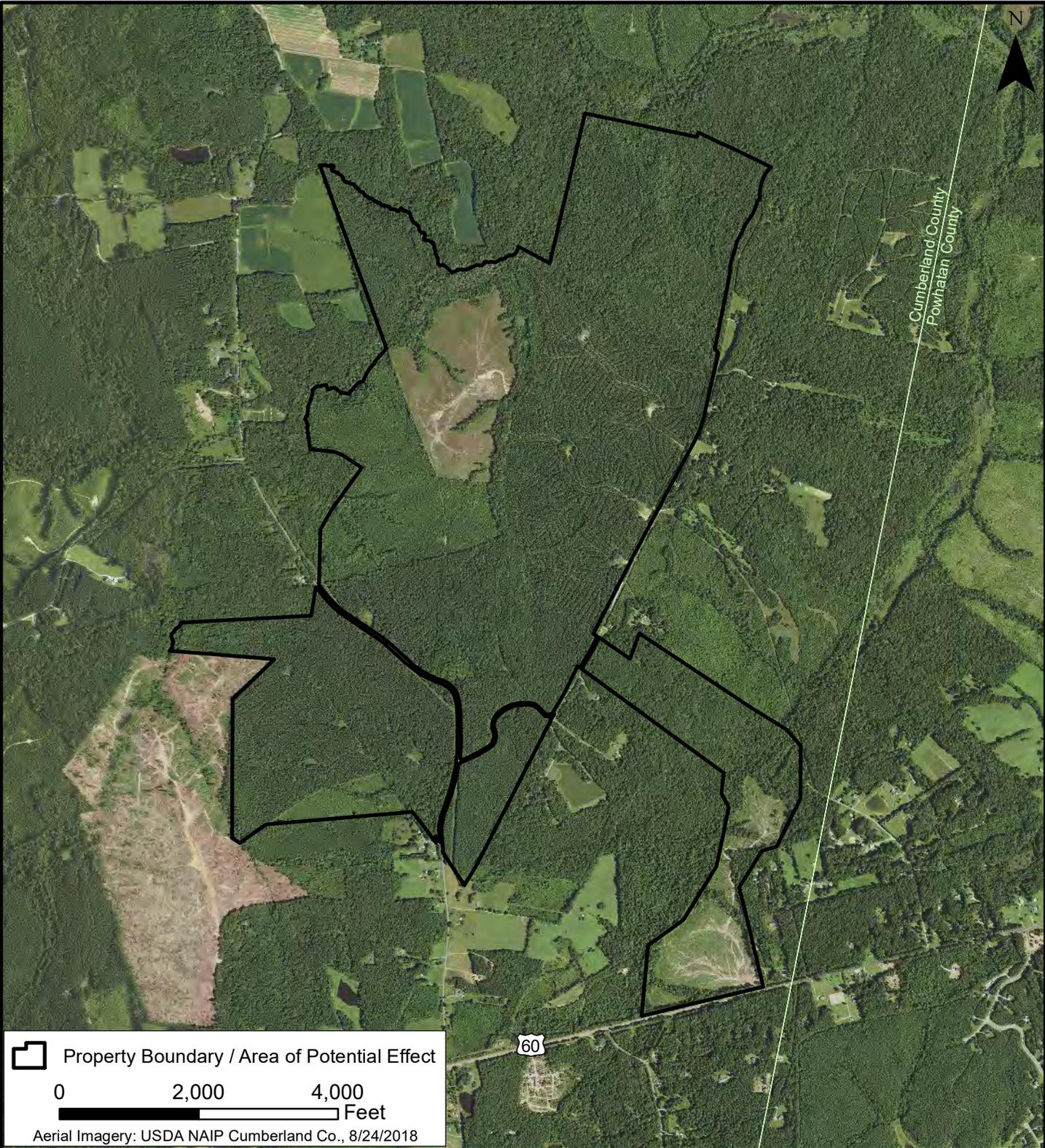
Richmond, VA  
 Charlottesville, VA  
 Hampton Roads, VA

Raleigh, NC  
 Fayetteville, NC  
 Northern Virginia  
 Virginia Beach, VA

DESIGNED: LPK  
 DRAWN: SMF  
 CHECKED: LPK  
 DATE: 5-22-19

**FIGURE**

**1**



 Property Boundary / Area of Potential Effect  
 0                      2,000                      4,000  
 Feet  
 Aerial Imagery: USDA NAIP Cumberland Co., 8/24/2018

**Aerial Photo**

Green Ridge  
 Recycling and Disposal Facility  
 Cumberland Co., Virginia

SCALE: 1" = 2000'

PROJECT: 18020117-010102


**Draper Aden Associates**  
*Engineering • Surveying • Environmental Services*  
 2206 South Main Street      Richmond, VA      Raleigh, NC  
 Blacksburg, VA 24060      Charlottesville, VA      Fayetteville, NC  
 540-552-0444 Fax: 540-552-0291      Hampton Roads, VA      Northern Virginia  
    Virginia Beach, VA

DESIGNED: LPK  
 DRAWN: SMF  
 CHECKED: LPK  
 DATE: 5-22-19

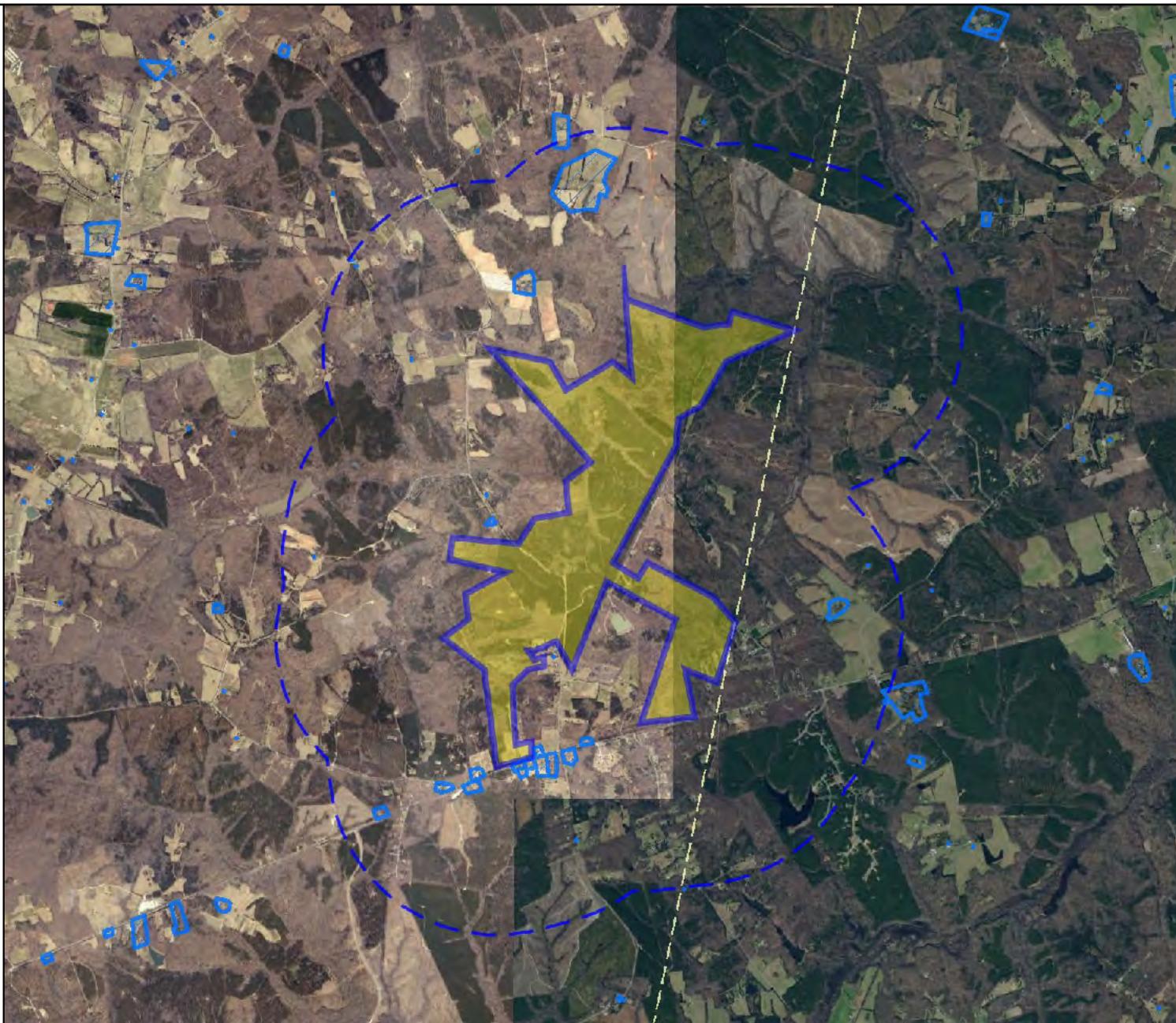
**FIGURE**  
 2

Path: P:\2018\18020100\18020117\18020117-010102\GIS Mapping\Green Ridge Site Loc Aerial - DHR.mxd



**Legend**

-  Architecture Resources
-  Individual Historic District Properties
-  Archaeological Resources
-  County Boundaries
-  Towns



Feet



0 120 240 360 480

1:72,224 / 1"=6,019 Feet

**Title: Cumberland Landfill**

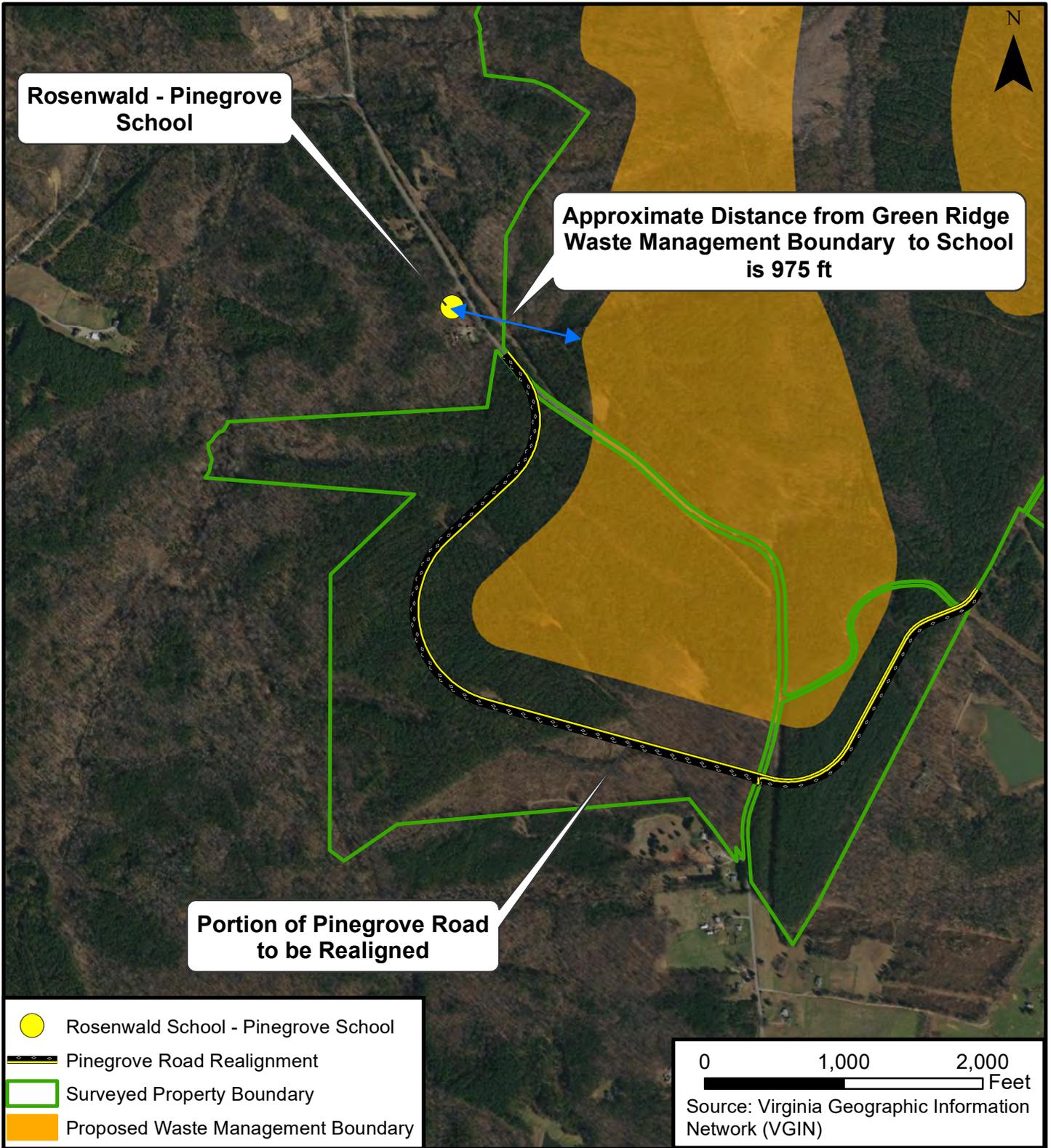
**Date: 2/20/2018**

*DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.*

*Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.*



Rosenwald School, Pine Grove Road = DHR File 24-5082



<b>Pinegrove Road Realignment</b>	Green Ridge Recycling and Disposal Facility Cumberland County, Virginia	SCALE: 1" = 1,000'
		PROJECT: 18020117-030102

 <b>Draper Aden Associates</b> <i>Engineering • Surveying • Environmental Services</i> 2206 South Main Street Blacksburg, VA 24060 540-552-0444 Fax: 540-552-0291	Richmond, VA Charlottesville, VA Hampton Roads, VA	Raleigh, NC Fayetteville, NC Northern Virginia	DESIGNED: MCB DRAWN: MCB CHECKED: CGD DATE: 07.01.2019	<b>FIGURE</b>  <b>1</b>
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# COMMONWEALTH of VIRGINIA

Matt Strickler  
Secretary of Natural Resources

**Department of Historic Resources**  
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

August 16, 2019

Ms. Lynn Klappich, CSI, CCCA  
Draper Aden Associates  
2206 South Main Street  
Blacksburg, VA 24060

RE: Green Ridge Recycling and Disposal Facility  
Cumberland County, VA  
DHR File No. 2019-0180

Dear Ms. Klappich:

We have received your request for review of the project referenced above. The project, as presented, is the construction and operation of a new solid waste disposal facility on 1,200 acres of undeveloped land in Cumberland County. Our comments are provided as assistance to Green Ridge Recycling and Disposal Facility, LLC (GRRDF) and the Virginia Department of Environmental Quality (DEQ) in assessing the potential impact of this project on historic resources. We have reviewed the submitted materials and provide the following comments.

Our Archives show several known historic resources within the project boundary which were likely recorded as part of studies completed in support of this project. In addition, Pine Grove School (DHR ID # 024-5082), which has been determined eligible for listing in the National Register of Historic Places, is located adjacent to the project boundary. We also understand that there is significant public concern about the potential for historic cemeteries on the landfill property. All efforts should be made to work with community stakeholders to understand these concerns and identify any cemeteries that may be affected.

Based on these factors and the potential for unrecorded historic resources on and around the subject property, we recommend that a Phase I cultural resources survey, including archaeological and architectural studies, be conducted of all areas within the project's Area of Potential Effects (APE). The APE should include the project footprint and those areas surrounding the project that could be visually or otherwise affected. Areas within the APE that are excluded from this survey for any reason should be clearly delineated and fully justified.

These surveys must be conducted by qualified professionals in accordance the *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-42) and DHR's *Guidelines for Conducting Historic Resources Survey in Virginia* (2017). One bound copy and one digital copy of the resulting report(s) should be submitted to our office for review. Architectural survey files must be submitted

Western Region Office  
962 Kime Lane  
Salem, VA 24153  
Tel: (540) 387-5443  
Fax: (540) 387-5446

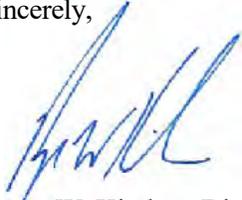
Northern Region Office  
5357 Main Street  
PO Box 519  
Stephens City, VA 22655  
Tel: (540) 868-7029  
Fax: (540) 868-7033

Eastern Region Office  
2801 Kensington Avenue  
Richmond, VA 23221  
Tel: (804) 367-2323  
Fax: (804) 367-2391

in hardcopy and approved by our Archives before we can review the architectural report. Once we have reviewed the survey reports, we will be able to advise you whether any further investigations and/or mitigative actions are warranted.

Thank you for initiating consultation with our office on this project. We look forward to receiving the results of these recommended surveys. If you have any questions about these comments or our review of this project, please do not hesitate to contact me at [roger.kirchen@dhr.virginia.gov](mailto:roger.kirchen@dhr.virginia.gov).

Sincerely,



Roger W. Kirchen, Director  
Review and Compliance Division

- c. Jason Miller, DEQ  
Jerry Cifor, GRRDF  
Lyle Browning, Browning & Associates  
Kevin Halligan

**Phase I Cultural Resources Investigation**

**Browning & Associates, Ltd.**

To be submitted at a later date

## **G – Fish and Wildlife**

## **Threatened and Endangered Species Summary**

**Project: Green Ridge Landfill**

Cumberland County, Virginia

May 24, 2019

Updated: December 9, 2019

### **Prepared by:**

Koontz Bryant Johnson Williams  
c/o Brent Johnson and Hannah Miller

11901 Old Stage Road

Chester, VA 23836

Phone: (804) 541-1436

### **Prepared for:**

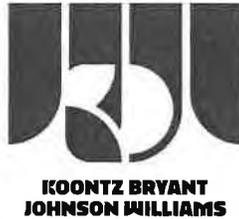
CWV, LLC

c/o James H. Martin

P.O. Box 636

Cobbs Creek, Virginia 23035

Phone: (804) 356-4628



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Environmental Conservation Online System ..... 5

## Appendices

Appendix A: VDGIF Official Species List (OSL)

Appendix B: CCB Mapping Portal – Eagle Nest Locations and Buffers Map

Appendix C: NLEB Hibernaculum and Roost Tree Map

Appendix D: Species Conclusion Table

Appendix E: Threatened and Endangered Species of Virginia

Appendix F: Daguna Consulting – Mussels Survey



## Section I: Introduction

The Green Ridge Landfill Project site lies off of Pinegrove Road and Anderson Highway (Rt. 60) in Cumberland County, Virginia. The site encompasses a total of 1,177.63 acres and contains both forested and unforested areas along with a wetland system that was delineated in March and April of 2018. The wetland system contains two named creeks. The first, Muddy Creek, lies on the northwestern portion of the associated project parcels. The second feature, Maple Swamp Creek, is a perennial stream that flows through the southeastern portion of the project area. This system encompasses a drainage basin that is approximately 8.31 square miles. For a list of the parcels that are associated with this project please see Table 1.0.

In order to assist with obtaining a Solid Waste Permit from the Virginia Department of Environmental Quality (VDEQ), the client, CWV, LLC., has decided to conduct a threatened and endangered species assessment for the project site. The following narrative is a summary of all research that has been performed in relation to the project.

44-A-36	44-A-19-A
44-A-13	44-A-19
44-A-14	45-2-2-A
44-A-22	45-2-2-B
45-A-7	44-A-21
37-A-69	44-A-37
44-A-20	44-A-22-A
45-A-1	45-1-40
38-A-7	45-1-41



**KOONTZ BRYANT  
JOHNSON WILLIAMS**

## **Research Summary**



## Section II: Threatened and Endangered Species - Animals

### U.S. Fish and Wildlife Services (USFWS) – Endangered Species Project Review

The USFWS Endangered Species Project Review process was followed to evaluate the potential for the occurrence of threatened and endangered species populations within the project boundaries.

**Step One:** The Action Area was defined for the project site. According to the USFWS, the action area includes “all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action (50 CFR 402.02).”

**Step Two - Four:** An Official Species List (OSL) was produced via the USFWS “Information for Planning and Consultation (iPac)” website. This report was produced on August 14, 2018 and shows a summary of all threatened and endangered species that are potentially present along with a summary of any critical habitat within the designated project area. According to the OSL, there is “a total of 1 threatened, endangered, or candidate species” within the project area. This is the Northern Long-eared Bat (*Myotis septentrionalis*) which has a threatened status underneath the Endangered Species Act (ESA). No critical habitats were identified in the OSL. A species conclusion table was compiled with the results of the project review. This table can be found in the appendix. Please see Table 1.1 for a summary of the species predicted on the OSL.

<b>Group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>ESA Status</b>
Mammal	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened

In terms of suitable habitat, the OSL report states that “no critical habitat has been designated for this species.” In addition to the OSL, a search was done on the preferred habitat of the Northern Long-eared Bat (NLEB). According to the Virginia Department of Game and Inland Fisheries (VDGIF) information page on the NLEB, the species “inhabits forested regions and will forage mainly on hillsides and ridge forests rather than riparian and floodplain forests.” A large portion of the site consists of low-lying forested areas that are adjacent to wetlands, streams and creeks and there are no cave or rock outcroppings on site that might harbor NLEB hibernacula. The VDGIF maintains the “NLEB Winter Habitat and Roost Trees” interactive map which shows that there are no known hibernacula located east of Interstate 81 and therefore there is no known NLEB habitat located within Cumberland County or the project area. In summary, it is unlikely that any populations of NLEB will be put a risk through this project.

**Step Five:** It should be noted that the site does not lie within any of the counties that contain federally designated critical habitat.



**Step Six:** The Center for Conservation Biology maintains the VA Eagle Nest Locator through the CCB Mapping Portal. According to this application, there are no known Bald Eagle nests or roosts located within the project area. The project will have no effect on this species. Please see the appendix for a copy of the VA Eagle Nest Locator generated map (Appendix B).

**Step Seven:** Please see the attached Species Conclusion Table (Appendix D) for all results of the Project Review.

**Environmental Conservation Online System (ECOS) - USFWS**

In addition to the research done through the Endangered Species Project Review and iPAC, the Environmental Conservation Online System (ECOS) was utilized to perform a county specific search for any potential threatened or endangered species. The search returned a list with a total of four potential species and includes three species of mussel, the James spiny mussel (*Pleurobema collina*), the Green floater (*Lasmigona subviridis*) and the Atlantic pigtoe (*Fusconaia masoni*). The fourth and final species on the list was the Northern Long-eared Bat. Please see Table 1.2 for a summary of all potential threatened and endangered species within Cumberland County, Virginia.

<b>Group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>ESA Status</b>
Clams	James spiny mussel	<i>Pleurobema collina</i>	Endangered
Clams	Green floater	<i>Lasmigona subviridis</i>	Under Review
Clams	Atlantic pigtoe	<i>Fusconaia masoni</i>	Proposed Threatened
Mammals	Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened

Having already determined that the potential for NLEB habitat on site is negligible, the three remaining mussel species take priority. As previously mentioned, the 1,177.63-acre site contains an extensive wetland system that primarily consists of two named creek systems, Muddy Creek and Maple Swamp Creek. Maple Swamp Creek flows into Muddy Creek to the northeast of the property and from there Muddy Creek flows directly into the James River, roughly 10-15 miles to the north. Due to the high prevalence of stream and creek habitats, the client has contracted Daguna Consulting, LLC to perform an onsite survey for any presence of these mussel species. This survey was conducted during the week of May 13<sup>th</sup> through the 17<sup>th</sup> of 2019. Please see Appendix F for their complete report.

For a complete list of all threatened and endangered animal species found within the state of Virginia, please see Appendix E.



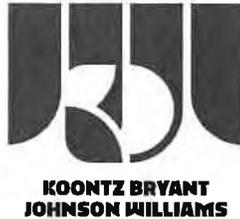
## **Section III: Threatened and Endangered Species - Plants**

### **U.S. Fish and Wildlife Services (USFWS) – Endangered Species Project Review**

The USFWS Endangered Species Project Review process was followed to evaluate the potential for the occurrence of threatened and endangered plant species populations within the project boundaries. The Official Species List produced during Step Two did not report the presence of any endangered or threatened plant species within the project boundary. For more information regarding the Endangered Species Project Review process, please reference Section II.

### **Environmental Conservation Online System (ECOS) – USFWS**

The ECOS system was also utilized to perform a county specific search for any endangered or threatened plant species. The system did not return a list for plant species and therefore, it is indicated that there are no reported endangered or threatened plant species within Cumberland County. For a list of all threatened and endangered plant species found within Virginia, please reference Appendix E.



## RESOURCES

“Endangered Species: Project Reviews in Virginia.” *Virginia Field Office*, U.S. Fish and Wildlife, 3 Apr. 2019, [https://www.fws.gov/northeast/virginiafield/endangered/projectreviews\\_step1.html](https://www.fws.gov/northeast/virginiafield/endangered/projectreviews_step1.html)

“IPAC: Information for Planning and Consultation.” *IPaC: Home*, U.S. Fish and Wildlife Service, <https://ecos.fws.gov/ipac/>.

Leon, Sarah. “Find Endangered Species.” Official Web Page of the U.S. Fish and Wildlife Service, U.S. Fish and Wildlife Service, <https://www.fws.gov/endangered/?s8fid=112762573903&countyName=Cumberland+County>.



**KOONTZ BRYANT  
JOHNSON WILLIAMS**

## **Appendices**



**KOONTZ BRYANT  
JOHNSON WILLIAMS**

## **Appendix A**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Virginia Ecological Services Field Office  
6669 Short Lane  
Gloucester, VA 23061-4410  
Phone: (804) 693-6694 Fax: (804) 693-9032  
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

May 06, 2019

Consultation Code: 05E2VA00-2018-SLI-4952

Event Code: 05E2VA00-2019-E-08954

Project Name: Cumberland County Wetland Delineation - Landfill

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

## **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**  
6669 Short Lane  
Gloucester, VA 23061-4410  
(804) 693-6694

## Project Summary

Consultation Code: 05E2VA00-2018-SLI-4952

Event Code: 05E2VA00-2019-E-08954

Project Name: Cumberland County Wetland Delineation - Landfill

Project Type: DEVELOPMENT

Project Description: Cumberland County Potential Landfill - Wetland delineation

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.563559517272864N78.12966063086748W>



Counties: Cumberland, VA

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

## **USFWS National Wildlife Refuge Lands And Fish Hatcheries**

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.



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## **Appendix B**



The Center for  
CONSERVATION  
BIOLOGY

## Appendix B CCB Mapping Portal



**Layers:** VA Eagle Nest Locator

**Map Center [longitude, latitude]:** [-78.10601234436035, 37.56318759963322]

**Map Link:**

[https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=14&lat=37.56318759963322&lng=-78.10601234436035&legend=legend\\_tab\\_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%29](https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=14&lat=37.56318759963322&lng=-78.10601234436035&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%29)

**Report Generated On:** 04/12/2019

The Center for Conservation Biology (CCB) provides certain data online as a free service to the public and the regulatory sector. CCB encourages the use of its data sets in wildlife conservation and management applications. These data are protected by intellectual property laws. All users are reminded to view the [Data Use Agreement](#) to ensure compliance with our data use policies. For additional data access questions, view our [Data Distribution Policy](#), or contact our Data Manager, Marie Pitts, at [mipitts@wm.edu](mailto:mipitts@wm.edu) or 757-221-7503.

Report generated by [The Center for Conservation Biology Mapping Portal](#).

To learn more about CCB visit [ccbbirds.org](http://ccbbirds.org) or contact us at [info@ccbbirds.org](mailto:info@ccbbirds.org)



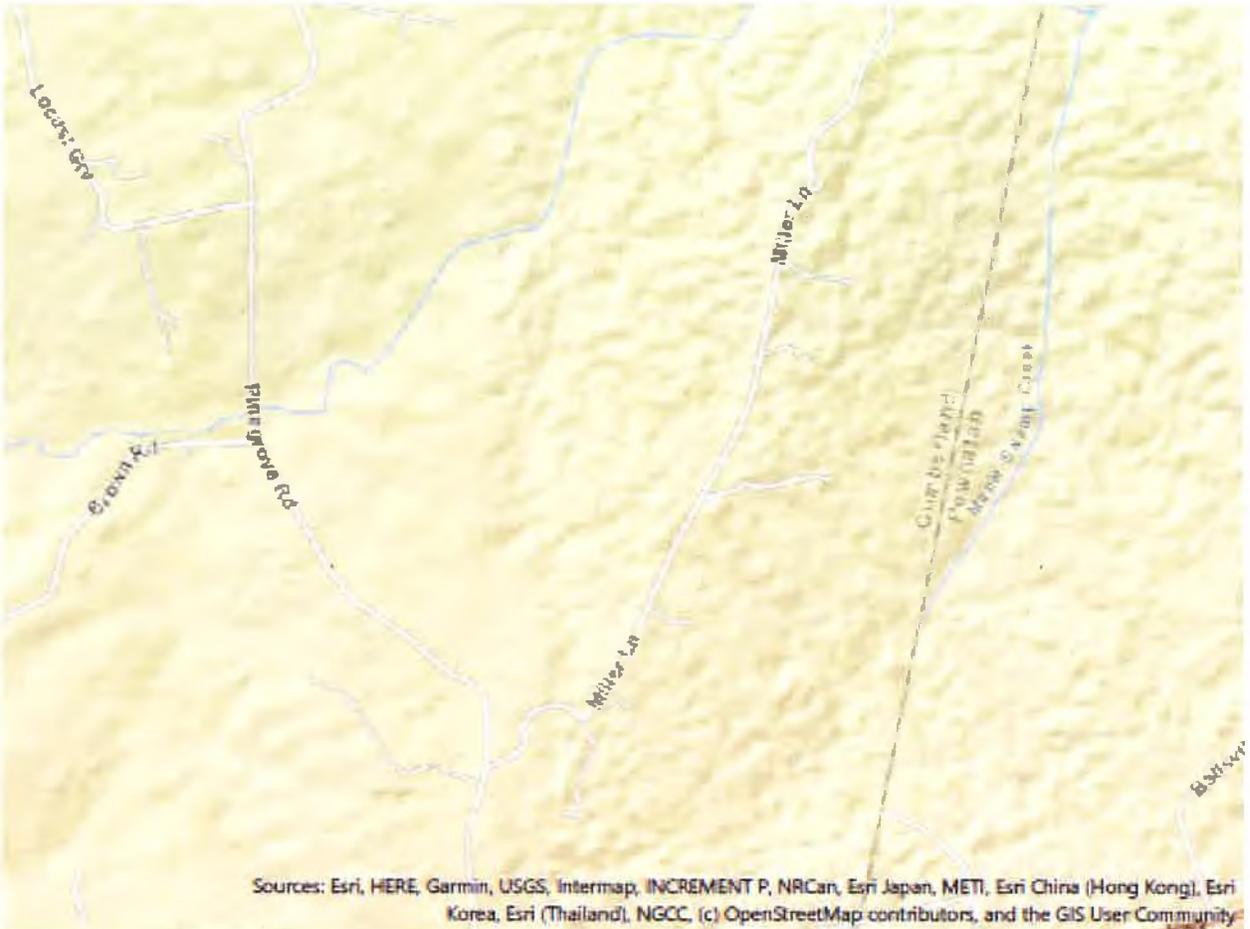
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## Appendix C

## Appendix C: NLEB Hibernaculum and Roost Tree Map

Obtained from: <https://dgif-virginia.maps.arcgis.com/apps/webappviewer/index.html?id=32ea4ee4935942c092e41ddcd19e5ec5>

May 6, 2019



Legend

- NLEB Known Occupied Maternity Roost (Summer Habitat) 
- NLEB Hibernaculum 5.5 Mile Buffer 
- NLEB Hibernaculum Half Mile Buffer 



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## **Appendix D**

## Appendix D: Species Conclusions Table

Project Name: Green Ridge Landfill – Cumberland County, Virginia

Date: May 6, 2019

Species / Resource Name	Conclusion	ESA Section 7	Notes / Documentation
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	No suitable habitat present	Not likely to adversely affect	-Please see Threatened and Endangered Species Summary -No active nests are present on the CCB Mapping Portal
Northern Long Eared Bat ( <i>Myotis septentrionalis</i> )	No suitable habitat present	No effect	-Please see Steps Two – Four in the Threatened and Endangered Species Summary
Critical habitat	No critical habitat present	N/A	-Project does not occur in any of the designated counties

\*Please note that this table includes only the species produced on the Official Species List generated by the Information, Planning and Consultation System (iPac), which is maintained by the U.S. Fish and Wildlife Service.



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## Appendix E

## Listed species -- 74 listings

## Animals -- 57 listings

<b>Status</b>	<b>Species/Listing Name</b>
E	Bat, gray Wherever found ( <i>Myotis grisescens</i> )
E	Bat, Indiana Wherever found ( <i>Myotis sodalis</i> )
T	Bat, Northern long-eared Wherever found ( <i>Myotis septentrionalis</i> )
E	Bat, Virginia big-eared Wherever found ( <i>Corynorhinus (=Plecotus) townsendii virginianus</i> )
E	Bean, Cumberland (pearlymussel) Wherever found; Except where listed as Experimental Populations ( <i>Villosa trabalis</i> )
E	Bean, purple Wherever found ( <i>Villosa perpurpurea</i> )
E	Bean, rayed Wherever found ( <i>Villosa fabalis</i> )
E	Blossom, green (pearlymussel) Wherever found ( <i>Epioblasma torulosa gubernaculum</i> )
E	Bumble bee, Rusty patched Wherever found ( <i>Bombus affinis</i> )
E	Butterfly, Mitchell's satyr Wherever found ( <i>Neonympha mitchellii mitchellii</i> )
T	Chub, slender Wherever found ( <i>Erimystax cahni</i> )
T	Chub, spotfin Wherever found, except where listed as an experimental population ( <i>Erimonax monachus</i> )
E	Combshell, Cumberlandian Wherever found; Except where listed as Experimental Populations ( <i>Epioblasma brevidens</i> )
T	Crayfish, Big Sandy Wherever found ( <i>Cambarus callainus</i> )
T	Dace, blackside Wherever found ( <i>Phoxinus cumberlandensis</i> )
E	Darter, candy Wherever found ( <i>Etheostoma osburni</i> )
E	Darter, duskytail Wherever found ( <i>Etheostoma percnurum</i> )
E	Fanshell Wherever found ( <i>Cyprogenia stegaria</i> )

<b>Status</b>	<b>Species/Listing Name</b>
E	Isopod, Lee County cave Wherever found ( <i>Lirceus usdagalun</i> )
T	Isopod, Madison Cave Wherever found ( <i>Antrolana lira</i> )
E	Kidneyshell, fluted Wherever found ( <i>Ptychobranchnus subtentum</i> )
T	Knot, red Wherever found ( <i>Calidris canutus rufa</i> )
T	Lance, yellow Wherever found ( <i>Elliptio lanceolata</i> )
E	Logperch, Roanoke Wherever found ( <i>Percina rex</i> )
T	Madtom, yellowfin Wherever found, except where listed as an experimental population ( <i>Noturus flavipinnis</i> )
E	Monkeyface, Appalachian (pearlymussel) Wherever found ( <i>Quadrula sparsa</i> )
E	Monkeyface, Cumberland (pearlymussel) Wherever found; Except where listed as Experimental Populations ( <i>Quadrula intermedia</i> )
E	Mucket, pink (pearlymussel) Wherever found ( <i>Lampsilis abrupta</i> )
E	Mussel, oyster Wherever found; Except where listed as Experimental Populations ( <i>Epioblasma capsaeformis</i> )
E	Mussel, sheepnose Wherever found ( <i>Plethobasus cyphyus</i> )
E	Mussel, snuffbox Wherever found ( <i>Epioblasma triquetra</i> )
E	Pearlymussel, birdwing Wherever found; Except where listed as Experimental Populations ( <i>Lemiox rimosus</i> )
E	Pearlymussel, cracking Wherever found; Except where listed as Experimental Populations ( <i>Hemistena lata</i> )
E	Pearlymussel, dromedary Wherever found; Except where listed as Experimental Populations ( <i>Dromus dromas</i> )
E	Pearlymussel, littlewing Wherever found ( <i>Pegias fabula</i> )
E	Pearlymussel, slabside Wherever found ( <i>Pleuonaia dolabelloides</i> )
E	Pigtoe, finerayed Wherever found; Except where listed as Experimental Populations ( <i>Fusconaia cuneolus</i> )
E	Pigtoe, rough Wherever found ( <i>Pleurobema plenum</i> )

**Status Species/Listing Name**

E	Pigtoe, shiny Wherever found; Except where listed as Experimental Populations ( <i>Fusconaia cor</i> )
T	Plover, piping [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. ( <i>Charadrius melodus</i> )
E	Rabbitsfoot, rough Wherever found ( <i>Quadrula cylindrica strigillata</i> )
E	Riffleshell, tan Wherever found ( <i>Epioblasma florentina walkeri</i> (=E. walkeri))
E	Salamander, Shenandoah Wherever found ( <i>Plethodon shenandoah</i> )
T	Sea turtle, green North Atlantic DPS ( <i>Chelonia mydas</i> )
E	Sea turtle, hawksbill Wherever found ( <i>Eretmochelys imbricata</i> )
E	Sea turtle, Kemp's ridley Wherever found ( <i>Lepidochelys kempii</i> )
E	Sea turtle, leatherback Wherever found ( <i>Dermochelys coriacea</i> )
T	Sea turtle, loggerhead Northwest Atlantic Ocean DPS ( <i>Caretta caretta</i> )
E	Snail, Virginia fringed mountain Wherever found ( <i>Polygyriscus virginianus</i> )
E	Spectaclecase (mussel) Wherever found ( <i>Cumberlandia monodonta</i> )
E	Spider, spruce-fir moss Wherever found ( <i>Microhexura montivaga</i> )
E	Spiny mussel, James Wherever found ( <i>Pleurobema collina</i> )
E	Squirrel, Carolina northern flying Wherever found ( <i>Glaucomys sabrinus coloratus</i> )
E	Tern, roseate Northeast U.S. nesting population ( <i>Sterna dougallii dougallii</i> )
T	Tiger beetle, Northeastern beach Wherever found ( <i>Cicindela dorsalis dorsalis</i> )
E	Wedgemussel, dwarf Wherever found ( <i>Alasmidonta heterodon</i> )
E	Woodpecker, red-cockaded Wherever found ( <i>Picoides borealis</i> )

## Plants -- 17 listings

**Status Species/Listing Name**

T	Amaranth, seabeach ( <i>Amaranthus pumilus</i> )
---	--

<b>Status</b>	<b>Species/Listing Name</b>
T	Birch, Virginia round-leaf ( <i>Betula uber</i> )
E	Bittercress, small-anthered ( <i>Cardamine micranthera</i> )
E	Bluet, Roan Mountain ( <i>Hedyotis purpurea var. montana</i> )
E	Bulrush, Northeastern ( <i>Scirpus ancistrochaetus</i> )
E	Coneflower, smooth ( <i>Echinacea laevigata</i> )
E	Harperella ( <i>Ptilimnium nodosum</i> )
T	Joint-vetch, Sensitive ( <i>Aeschynomene virginica</i> )
E	Lichen, rock gnome ( <i>Gymnoderma lineare</i> )
E	Mallow, Peter's Mountain ( <i>Iliamna corei</i> )
T	Orchid, eastern prairie fringed ( <i>Platanthera leucophaea</i> )
T	Pink, swamp ( <i>Helonias bullata</i> )
T	Pogonia, small whorled ( <i>Isotria medeoloides</i> )
E	rock cress, Shale barren ( <i>Arabis serotina</i> )
T	Sneezeweed, Virginia ( <i>Helenium virginicum</i> )
T	Spiraea, Virginia ( <i>Spiraea virginiana</i> )
E	Sumac, Michaux's ( <i>Rhus michauxii</i> )



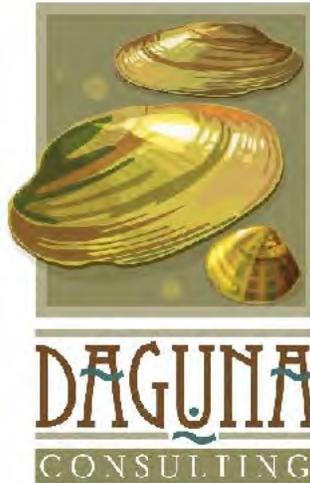
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## Appendix F

**REVISED FINAL REPORT**

**Surveys for Protected Freshwater Mussels  
at the Proposed Green Ridge Recycling and Disposal Facility  
in Cumberland County, VA**

by



Brett J. K. Ostby and B. B. Beaty  
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Bristol, VA 24202

for

Koontz, Bryant, Johnson, Williams Group  
11901 Old Stage Road  
Chester, VA

May 29<sup>th</sup>, 2019  
Revised August 15<sup>th</sup>, 2019  
Final Revision December 5<sup>th</sup>, 2019



## **INTRODUCTION**

The proposed Green Ridge Recycling and Disposal Facility is planned for rural Cumberland County, Virginia. Preliminary review of the property indicated that streams potentially containing freshwater mussels may be present. Therefore, the project developer requested a survey for the imperiled freshwater mussels to better understand any potential impact. Nearby perennial streams include Muddy Creek and Maple Swamp Creek. These perennial streams border and, in some places, flow through the Green Ridge property (Figure 1). Many unnamed tributaries to these streams drain the property.

The James River Basin is inhabited by the federally endangered James Spinemussel (*Pleurobema collina*), the state-threatened Green Floater (*Lasmigona subviridis*), and the state-threatened Atlantic Pigtoe (*Fusconaia masoni*). The state-listed Green Floater is known from the James River upstream and downstream of the Muddy Creek confluence (The Catena Group 2010, Chazal et al. 2012). Relic shell material of the Atlantic Pigtoe was recently detected in the Powhatan County reach of the James River by Chazal et al. (2012). The James Spinemussel is known from nearby Rock Island Creek (~ 40 km to the northwest, Chazal et al. 2012). Ostby (2007) detected a significant population of a common mussel species (Eastern Elliptio, *Elliptio complanata*) in a small unnamed stream in Powhatan County (~20 km to the east). That small unnamed stream was comparable to the perennial streams on the Green Ridge site. Chazal et al. (2012) conducted 2 surveys of Davis Creek, a tributary to Muddy Creek entering downstream of the Green Ridge site. They identified suitable habitat but detected no native mussels in those surveys.

On May 25 and 26, 2019, biologists Brett Ostby and Braven Beaty of Daguna Consulting, LLC visited the Green Ridge property to assess potential mussel habitat in streams and conduct surveys for freshwater mussels where necessary. Surveys were conducted to meet the requirements of “Abbreviated Surveys” as defined in “Freshwater Mussel Guidelines for Virginia (USFWS and VDGIF 2013)”. Most efforts focused on Muddy Creek and Maple Swamp Creek.

## **METHODS**

### **Stream Assessment**

We either visited streams by hiking through the site or assessed streams as they entered either Muddy Creek or Maple Swamp Creek. Assessments determined whether sufficient flow and suitable substrate were present to support freshwater mussels. We also assessed overall stream conditions. In some streams with sufficient flow, we searched for mussels.

### **Stream Surveys**

The perennial streams (Muddy Creek and Maple Swamp Creek) were surveyed for mussels to qualitatively assess species composition, abundance, and the possible presence of protected species. In accordance with the published Virginia freshwater mussel survey guidelines, we searched reaches of stream extending from 400 downstream to 100 m upstream of proposed impacts. Because most habitats were shallow (<0.5 m), we used viewscopes and unaided visual



inspection. In some areas tactile searches were employed. All stream reaches were surveyed unless the habitat was deemed “unsuitable” for mussels based on the site visit. The “unsuitability” of any stream reach(es) as habitat for mussels was fully documented. We searched stream banks and exposed shoals for mussel shells to obtain a complete list of species at the site. Surveys were conducted when water level and clarity were suitable to locate shells and live individuals with ease. Sufficient effort was expended to visually inspect a sufficient amount of suitable habitat so that we could state with reasonable confidence that endangered and/or threatened species did or did not occur in the reach sampled. Representative specimens of each species detected were photographed. Geographical Information System (GIS) programs were used to georeference survey boundaries, location of protected species, and location of other pertinent features.

## **RESULTS**

### **Weather and Stream Conditions**

Skies were clear on both May 25<sup>th</sup> and May 26<sup>th</sup>. Air temperature reached a high of 29 °C (85 °F) on May 25<sup>th</sup> and 32 °C (90 °F) on May 26<sup>th</sup>. Flows were assumed to be near median in Muddy Creek and Maple Swamp Creek based on information from nearby gages, including USGS 02036500 on Fine Creek at Fine Creek Mills, VA and USGS 02039500 on the Appomattox River at Farmville, VA. Little to no rain had fallen in the area over the preceding week. Water clarity in Muddy Creek was limited due to tannins and turbidity from an unknown source. In general, the streambed was clearly visible in laminar flows less than 0.4 m depth. Water temperature in Muddy Creek was 22 °C (76 °F) when surveyed on May 25<sup>th</sup>. Maple Swamp Creek had no evidence of tannins and was considerably clearer, with all streambed habitats visible from the water surface in laminar flow. Water in Maple Swamp Creek was 18°C (64 °F) during the May 26<sup>th</sup> survey.

### **Muddy Creek Habitat and Species Observations**

We surveyed Muddy Creek from the abandoned Miller Lane bridge (37.584320, -78.106711) to upstream of the Pine Grove culvert crossing (37.567270, -78.138347), with the exception of a 100 m reach directly downstream of the Pine Grove crossing (Figure 2). The total surveyed reach was approximately 3,800 m. Muddy Creek flowed through a corridor of mature bottomland forests, with extensive marshes in the 1000 m reach upstream of the abandoned bridge (Figure 3). Its average bankfull width was 7 m with wetted width usually 5-6 m. Bankfull height was 1 to 1.5 m throughout, with sand banks forming a natural dike between the channel and marsh areas. In forested areas, banks were steep but stable and usually vegetated (Figure 4).

Instream habitat in Muddy Creek was 95% run habitat with a sand streambed (see Figure 3). The sand streambed ranged from firm to soft. All instream habitat structure in the lower 3,400 m of the surveyed reach was formed by large woody debris. Approximately 5% of the habitat was pool. Exposed bedrock, boulders, cobble and gravel were only observed starting 300 m downstream of the Pine Grove crossing. From 400 m downstream to 200 m upstream of the Pine Grove crossing, a few riffles were noted (Figure 5). Overall the streambed was 99% sand, with



some patches being unstable and soft. Maximum water depth was 1.25 m with most habitats less than 0.4 m deep.

In a 9 person-hour effort, we detected 12 live Eastern Elliptio (*E. complanata*), 5 live Northern Lance (*E. fisheriana*) and 1 live Eastern Floater (*Pyganodon cataracta*) in the main channel of Muddy Creek. Figures 6-8 are photographs of example specimens. We detected live mussels only from the start point to approximately 1000 m upstream. We observed recent shell material on exposed banks nearer the Pine Grove crossing, but no live specimens were detected in the vicinity. Non-native Asian Clams (*Corbicula fluminea*) were present throughout the stream but not common. There was little habitat for aquatic insects except near the Pine Grove crossing where we observed a few mayfly larvae under cobbles. We also observed some water scorpions (*Ranatra*) in large woody debris closer to the survey start point. We observed cyprinids, mostly dace, and centrarchids. Several centrarchid nests were noted near the survey start point. Three frog species were abundant in Muddy Creek and its associated wetlands including Green Frogs, Cricket Frogs and Leopard Frogs. Tadpole of American Toads and calls of Grey Treefrogs were also noted.

We noted several tributaries entering Muddy Creek (marked as Trib 1-3 and 5-6 in Figure 2 and geo-referenced as Trib 1-6 in Table 1) but none appeared suitable for freshwater mussels, being either too small or unstable (Figures 9-14, see Table 1 for locations). We extensively searched a tributary flowing from the south which eventually dissipated into a marsh but found no evidence of mussels (Trib 1, see Figures 9 and 10). The largest tributary flowing through the Green Ridge property into Muddy Creek from the northwest had a significantly incised channel clogged by sand with little flow (Trib 3, 37.5744, -78.12536, see Figure 12). Upstream of the Pine Grove Road crossing, we assessed and surveyed an unnamed tributary draining from the south. This stream showed evidence of recent catastrophic disturbance, with a newly incised channel cut into clay banks (Figure 14). There was also a copious amount of gravel, likely originating from Brown Road, in the stream bed (see Figure 5). Further survey of this stream was not warranted. Other tributaries flowing off the Green Ridge site into the surveyed reach of Muddy Creek as marked on the topographic map by dotted blue lines (see Figure 2) were not detected during the survey of Muddy Creek because they were likely dry on May 25th.

### **Maple Swamp Creek Habitat and Species Observations**

At the survey start point (37.55975, 78.10566), Maple Swamp Creek flowed along a marsh on its left ascending side and a mature forest on the other (Figure 15 and 16). This reach had low banks (<0.5 m). It was exclusively run habitat with a sand stream bed. Some patches of sand were extremely soft. Large woody debris was common. Bankfull width was 3-4 m and mostly wetted. Water depth was usually less than 0.3 m.

Moving from downstream to upstream the character of Maple Swamp Creek gradually changed. Further upstream, this stream flowed through a mature forested corridor with higher banks. Upstream of the unnamed tributary labeled Trib 7, riffles and larger streambed particles became more common. For approximately the upstream 600 m of the surveyed reach, bankfull height was usually 1 to 1.5 m, reaching a maximum of 2 m. For the upstream 600 m of the surveyed



reach habitat was 75% run, 10% riffle and 5% pool (Figure 17). While most of the streambed remained sand (75%), boulder, cobble and gravel were more common. Some habitats had an exposed bedrock streambed.

In a 5 person-hour effort, we surveyed an approximately 1,800 m reach, detecting no evidence of native mussels. No Asian Clams (*C. fluminea*) were detected either. Fish were more common in Maple Swamp Creek than in Muddy Creek, with dace, central stone rollers, and darters observed. Aquatic insects were more frequently encountered in Maple Swamp Creek than in Muddy Creek, including mayfly larvae, whirligig beetles, caddis fly larvae and water pennies. Several frog species were abundant in Maple Swamp Creek and its associated wetlands including Green Frogs, Cricket Frogs and Leopard Frogs. Calls of Grey Treefrogs were also noted.

Two apparently perennial tributaries (Trib 7 and 8 on Figure 15) were assessed. No evidence of mussels was detected though suitable habitat and habitat complexity were noted near Maple Swamp Creek in both cases (Figures 18 and 19).

## **CONCLUSION**

Muddy Creek supports a low-density mussel assemblage comprised of three common species. We found no evidence to suggest additional species inhabited the surveyed reach. None of the Muddy Creek tributaries draining the Green Ridge property appeared to provide suitable habitat for native mussels. We found no evidence to suggest Maple Swamp Creek or its tributaries were inhabited by native mussels. Disturbances to any stream flowing off the Green Ridge property might impact native mussels living downstream in Muddy Creek. Maple Swamp Creek is also a tributary to Muddy Creek.

Adequate habitat area was searched to detect extremely low-density populations of protected species. Using a sampling equation from Smith (2006), we calculated post hoc detection probabilities based on total area searched and assumed detection of an individual mussel when present (or search efficacy, Table 2). We surveyed at least 19,000 m<sup>2</sup> of habitat in Muddy Creek and 5,400 m<sup>2</sup> in Maple Swamp Creek. Generally, detection of an individual mussel is 0.2 on a scale from 0 to 1, where “0” means an individual was present but not detected and “1” means an individual was detected. An individual detection rate of 0.1 was more appropriate for Muddy Creek due to tannins and turbidity, whereas 0.2 was appropriate for Maple Swamp Creek. We had an extremely high probability (>0.99) to detect mussels present at 0.01 m<sup>-2</sup> in both Maple Swamp Creek and Muddy Creek.

Densities in Muddy Creek were so low that it would require large areas be surveyed to detect existing populations, so it should be no surprise that Department of Conservation and Recreation, Division of Natural Heritage surveys conducted by Chazal et al (2012) failed to detect mussels in the Muddy Creek drainage.



## **LITERATURE CITED**

Ostby, B. J. K. 2007. Stream Survey for Protected Mussels in Unnamed Tributaries to Fine Creek, Powhatan County, Virginia. Report for Balzer and Associates, Powhatan, VA. 13 pp.

Chazal, A. C., B. T. Watson and B. C. Flower. 2012. Results of James Spiny mussel Surveys in the James River and Tributaries of Central and Eastern Virginia. Report for Virginia Department of Game and Inland Fisheries, Richmond, VA. 222 pp.

Smith, D. R. 2006. Survey design for detecting rare freshwater mussels. Journal of the North American Benthological Society 25(3): 701-711.

The Catena Group. 2010. Freshwater Mussel Survey Report for Proposed Water Intake, James River, Powhatan Co, VA. Report for Malcom Pirnie, Inc. Newport News, VA. 15 pp.

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Table 1. Latitude and longitude markers (WGS84) for mussel surveys and assessments.

<b>Label</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Figure</b>
Assessment Trib 1 upstream	37.57729	-78.11288	
Assessment Trib 1 and photo	37.57812	-78.11368	9
Assessment Trib 1 downstream and photo	37.58120	-78.11529	10
Muddy Creek survey start	37.58423	-78.10672	
Assessment Trib 2 and photo	37.57520	-78.12201	11
Assessment Trib 3 and photo	37.57440	-78.12536	12
Larger substrate and exposed bed upstream	37.57089	-78.12895	
Assesment Trib 4 and first riffle	37.57006	-78.12954	
Shells on exposed bar	37.56992	-78.13188	
Assessment Trib 5 and photo	37.56804	-78.13322	13
Road gravel noted in streambed	37.56740	-78.13779	5
Upstream Assesment Trib 6 and photo	37.56806	-78.13294	14
Muddy Creek survey end	37.56729	78.13835	
Upstream Assesment Trib 7	37.55895	-78.11561	
Assessment Trib 7 and photo	37.55569	-78.11260	17
Maple Swamp Creek survey start	37.55971	-78.10574	15
Assesment Trib 8 and photo	37.55217	-78.11458	18
Upstream Assesment Trib 8	37.55216	-78.11551	
Maple Swamp Creek survey end	37.54780	-78.11513	



Table 2. Probability of detecting a species ( $p$ ) using Smith (2006) equation,  $p = 1 - e^{-\beta\alpha\mu}$ , given search efficacy ( $\beta$ ), actual area covered in a survey ( $\alpha$ ), and a theoretical density ( $\mu$ ). We also present a theoretical population size for a survey reach for a given density (0.01 or 0.005 individuals per meter square). For example, if we were only able to detect 1 in 10 *L. subviridis* present in Muddy Creek and there were only 94 in the entire surveyed reach, we had a 0.9913 probably to detect at least a single individual.

Stream	$p$ Probability of population detection	$\beta$ Probability of Individual Detection	$\alpha$ Area Visually Searched	$\mu$ Population Density	Population Size in Survey Reach
Muddy Creek	0.9999	0.05	19000	0.01	190
	1.0000	0.1	19000	0.01	190
	0.9913	0.05	19000	0.005	95
	0.9999	0.1	19000	0.005	95
Maple Swamp Creek	1.0000	0.2	5400	0.01	54
	0.9955	0.1	5400	0.01	54
	0.9328	0.05	5400	0.01	54
	0.9955	0.2	5400	0.005	27
	0.9328	0.1	5400	0.005	27
	0.7408	0.05	5400	0.005	27

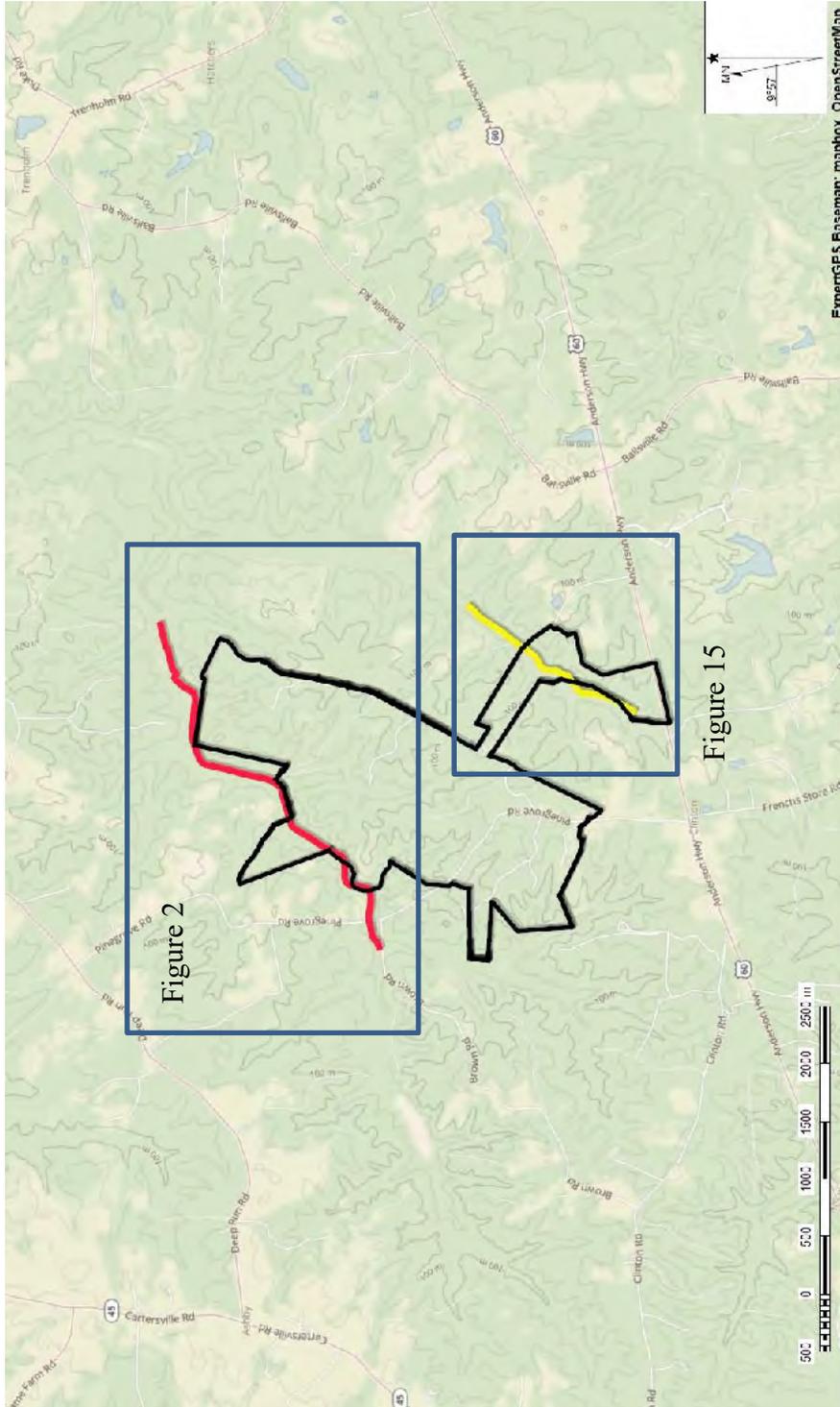


Figure 1. Area road map illustrating the reaches of Muddy Creek (red) and Maple Swamp Creek (yellow) that were surveyed for freshwater mussels. Property boundaries are marked in black.

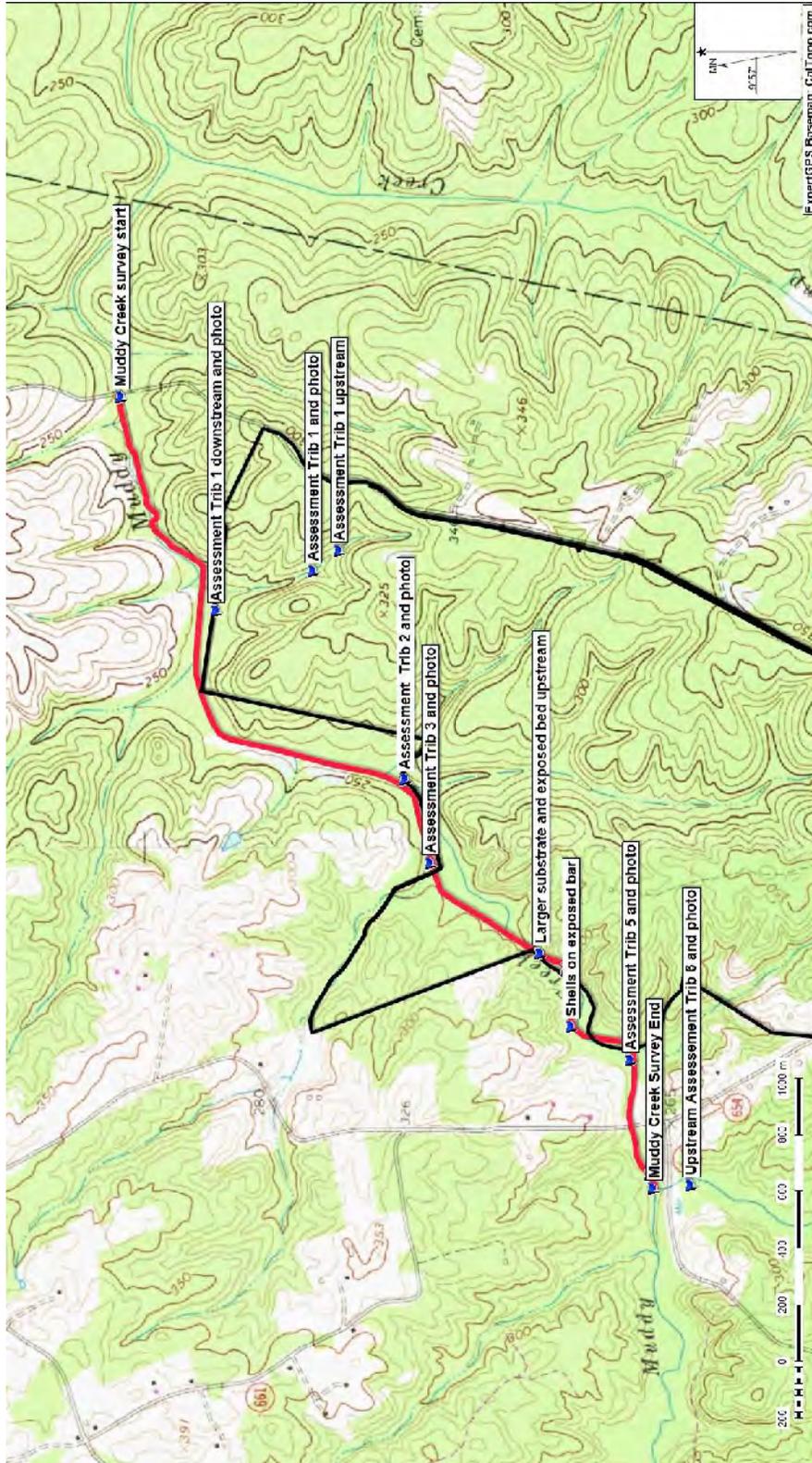


Figure 2. Topographic map illustrating survey reach of Muddy Creek (red) and its tributaries that were assessed. Property boundaries are marked in black. Tributary 4 was not marked here due to label overlap. All assessment are geo-referenced in Table 1.



Figure 3. Marsh bordering Muddy Creek near the survey start point. The most extensive marsh was present along the right ascending side.



Figure 4. Typical run habitat in Muddy Creek flowing through the forested corridor.



Figure 5. Muddy Creek upstream of Pine Grove crossing with gravel bar. Bar material appears to have originated from a gravel road and did not resemble stream bed material observed elsewhere in Muddy Creek or its tributaries.



Figure 6. The Eastern Elliptio (*E. complanata*) was the most frequently encountered species. Most were greater than 90 mm, with ages approximately 10 years or greater.



Figure 7. Northern Lance (*E. fisheriana*) were found in clay banks. Shell material of specimens as young as 3 years old were detected just downstream of the Pine Grove stream crossing on exposed bars.



Figure 8. We observed only a single specimen of Eastern Floater (*P. cataracta*) in Muddy Creek. It was 4 years old.



Figure 9. Stream feeding Muddy Creek from the south (Trib 1) was deeply incised in some locations. It was likely too small to support native mussels but did harbor dace.



Figure 10. Forested marsh near the Muddy Creek channel where the unnamed tributary channel (Trib 1) pictured in Figure 9 dissipated.



Figure 11. A beaver dam blocked this small tributary draining the Green Ridge site from the south (37.57520, -78.12201). This stream was too small to support freshwater mussels, so no further survey was warranted.



Figure 12. Unnamed tributary feeding Muddy Creek from the northwest had little flow and contributed large amounts of sand (37.5744, -78.12536). This stream drains the Green Ridge site and was not surveyed. Flow was only a few mm deep and filled less than half the channel, suggesting it may be ephemeral.

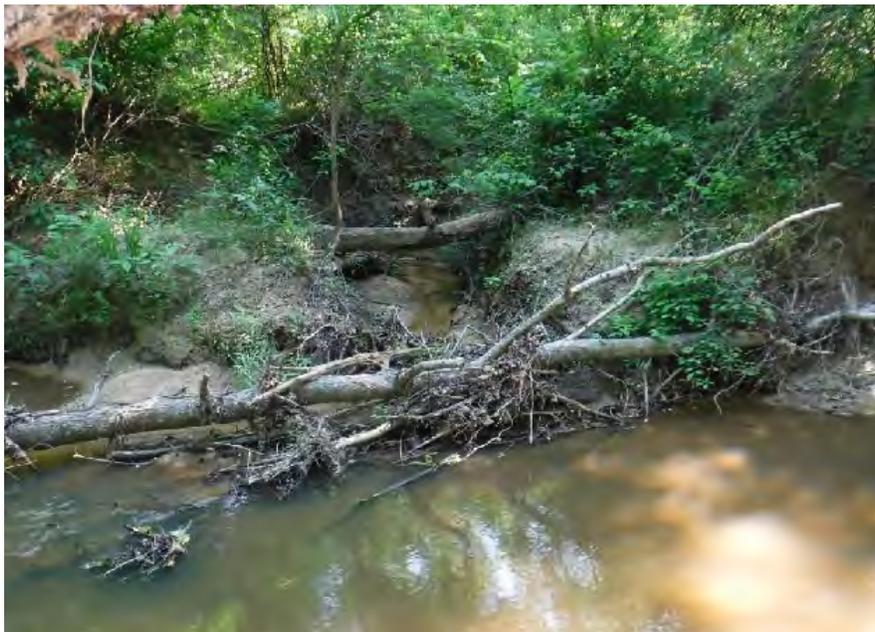


Figure 13. We followed this unnamed tributary as we exited Muddy Creek and made several checks (37.56804, -78.13322). Like other feeding tributaries it was too small to support mussels.



Figure 14. A recently incised channel within an older channel upstream of the new Brown Road crossing. This stream recently suffered a catastrophic event forming a new and deeper channel.

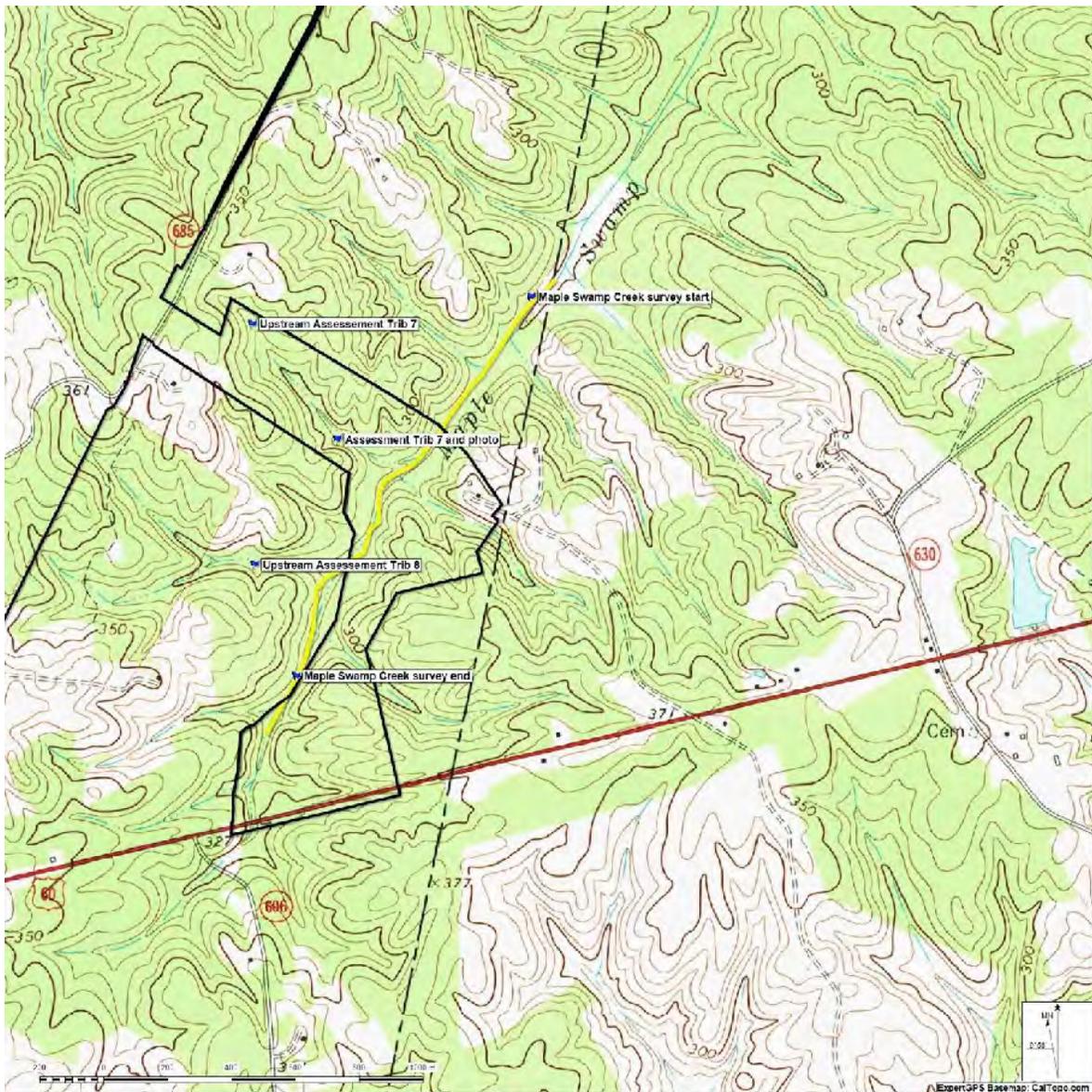


Figure 15. Topographic map illustrating survey reach of Maple Swamp Creek (yellow) and its tributaries that were assessed. Property boundaries are marked in black.

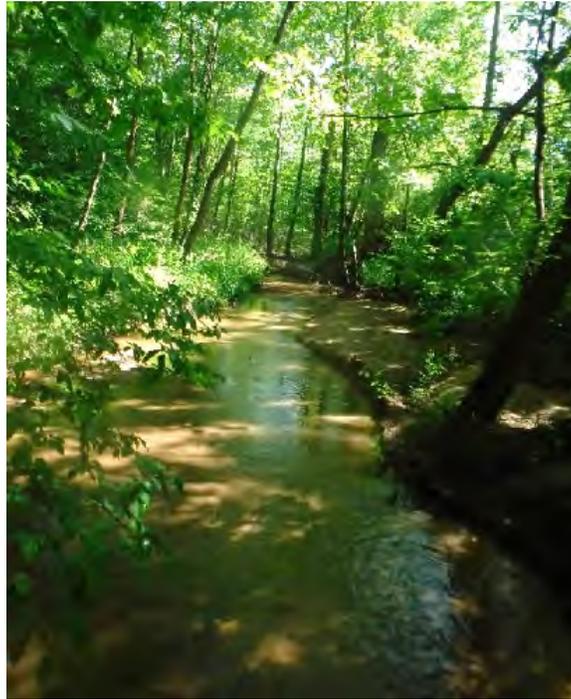


Figure 16. Run habitat with a sand streambed in Maple Swamp Creek near survey start.

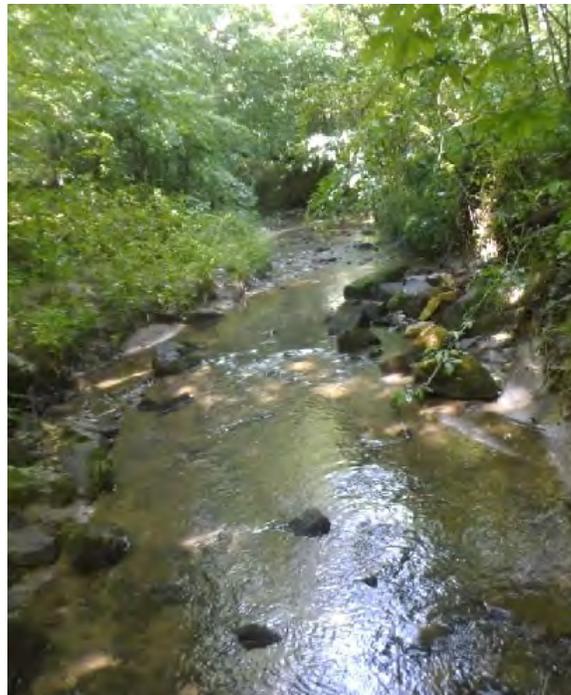


Figure 17. More complex meandering instream habitat farther upstream in Maple Swamp Creek. Boulders and cobble in the streambed here were absent downstream. We observed more fish, including darters in this habitat.

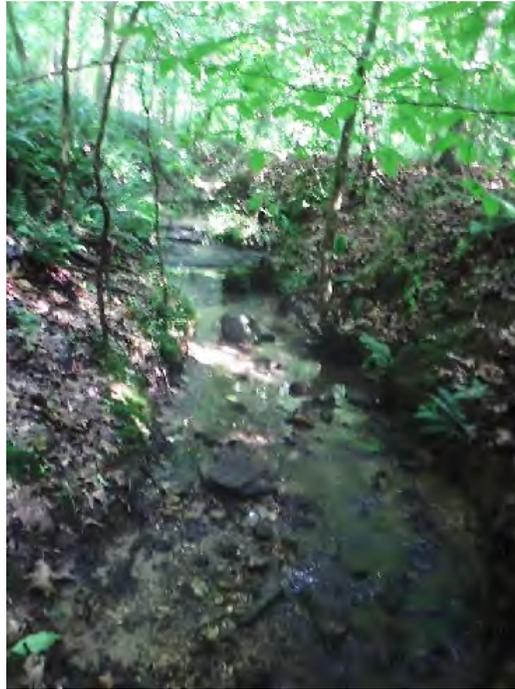


Figure 18. While hiking in from Miller Road, we searched approximately 200 m of a tributary feeding Maple Swamp Creek, finding suitable habitat but failing to detect any evidence of mussels (37.55569, -78.11260).



Figure 19. We searched an approximately 200 m reach of a small tributary feeding Maple Swamp Creek from its mouth upstream finding no evidence of mussels (37.5521, -78.11458).



## Survey Record #1

**Site #:** DAGUNA05252019.1

**Stream:** Muddy Creek

**County:** Cumberland

**Description:** Surveyed 3,800 m reach of main channel and assessed several feeding tributaries

**Drainage:** James

**USGS Quadrangle Map:** Whiteville/Trenholm

**Projection:** WGS 84

**Survey Start:** 37.58423, -78.10672

**Survey End:** 37.56729, -78.13835

**Survey Date:** 5/25/2019 and 5/26/2019

**Survey Effort:** 9 person-hours

**Personnel:** B. J. K. Ostby, B. B. Beaty

### Mollusks Observed:

12 Live *Elliptio complanta*

5 Live *E. fisheriana*

1 Live *Pyganodon cataracta*

Live *Corbicula fluminea* (uncommon)



**Survey Record #2**

**Site #:** DAGUNA05262019.1

**Stream:** Maple Swamp Creek

**County:** Cumberland

**Description:** Surveyed 1,800 m of main channel and assessed 2 feeding tributaries

**Drainage:** James

**USGS Quadrangle Map:** Trenholm

**Projection:** WGS 84

**Survey Start:** 37.55971, -78.10574

**Survey End:** 37.547796, -78.11513

**Survey Date:** 5/26/2019

**Survey Effort:** 5 person-hours

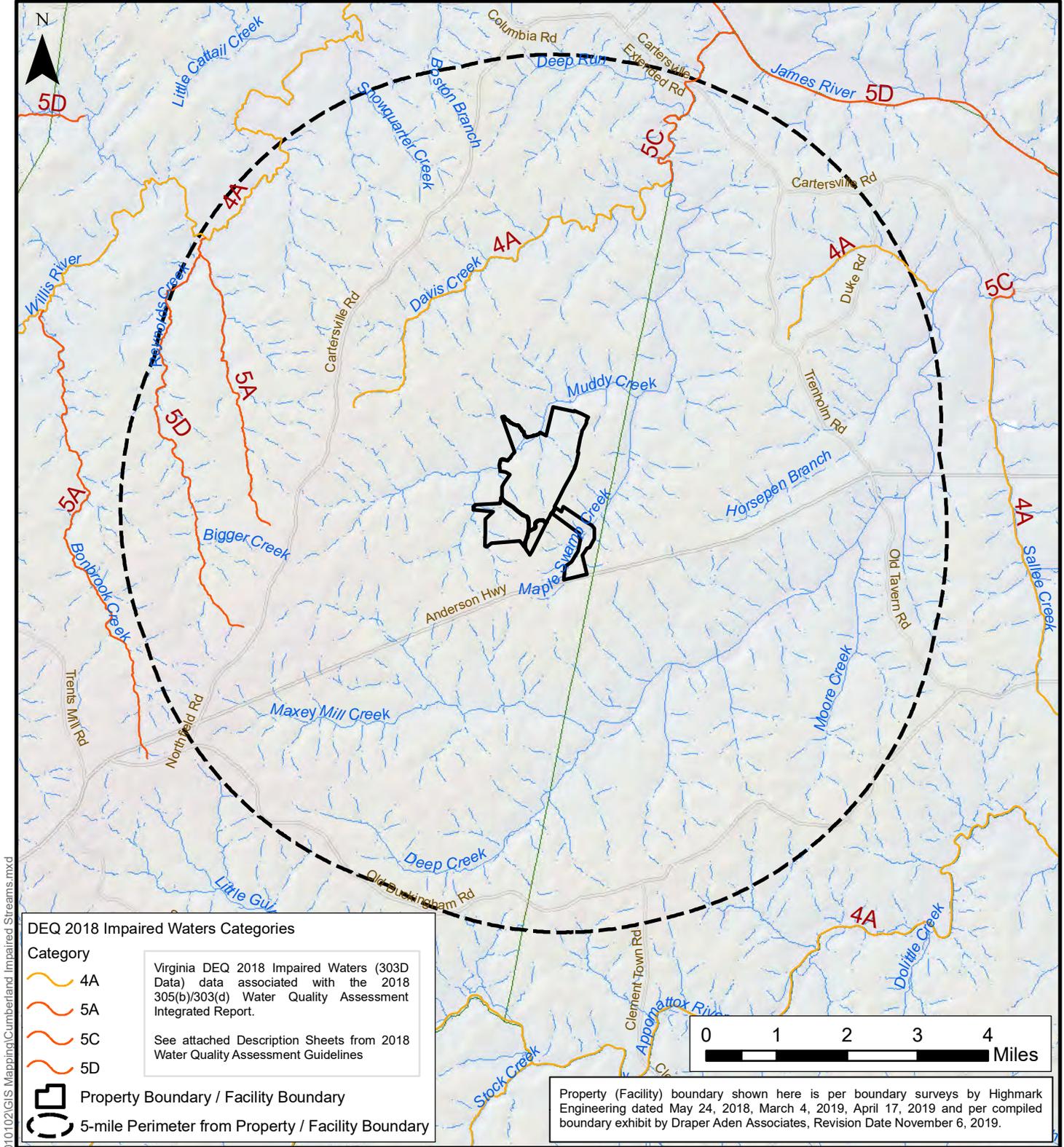
**Personnel:** B. J. K. Ostby, B. B. Beaty

**Mollusks Observed:**

None

## **H - Water Quality**

**APPENDIX LIS-4H - WATER QUALITY  
FIGURES**



**DEQ 2018 Impaired Waters Categories**

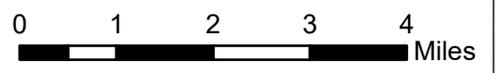
Category	Description
	4A
	5A
	5C
	5D

Virginia DEQ 2018 Impaired Waters (303D Data) data associated with the 2018 305(b)/303(d) Water Quality Assessment Integrated Report.

See attached Description Sheets from 2018 Water Quality Assessment Guidelines

Property Boundary / Facility Boundary

5-mile Perimeter from Property / Facility Boundary



Property (Facility) boundary shown here is per boundary surveys by Highmark Engineering dated May 24, 2018, March 4, 2019, April 17, 2019 and per compiled boundary exhibit by Draper Aden Associates, Revision Date November 6, 2019.

**Surface Water Resources** Green Ridge Recycling and Disposal Facility  
Cumberland County, Virginia

SCALE: 1:125,000  
PROJECT: 18020117-030102

**Draper Aden Associates**  
Engineering ♦ Surveying ♦ Environmental Services

1030 Wilmer Avenue, Suite 100  
Richmond, VA 23227  
804-264-2228 Fax: 804-264-8773

Blacksburg, VA  
Charlottesville, VA  
Hampton Roads, VA

Raleigh, NC  
Fayetteville, NC  
Northern Virginia

DESIGNED: LPK  
DRAWN: SMF  
CHECKED: BHH  
DATE: 11-26-19

**FIGURE**  
LIS-4H-1

Path: P:\2018\18020117\GIS Mapping\Cumberland\_Impaired Streams.mxd

## **FEDERAL AND VIRGINIA ASSESSMENT CATEGORIES**

The 2018 EPA Integrated Report Guidance and Assessment Database (ADB V2.3.1) has five major categories and three subcategories which every "assessment unit" (AU) are placed based on designated use attainment. Additionally, Virginia has created several subcategories to supplement the federal categories, enabling a more precise water quality tracking and reporting mechanism.

Below are the US EPA-defined categories and associated Virginia-defined subcategories:

### ***IMPAIRED - Waters are impaired or threatened but a TMDL is not required.***

- **EPA Category 4A** - water is impaired or threatened for one or more designated uses but does not require a TMDL (an EPA approved TMDL already exists or the waterbody has been nested within an approved TMDL). In the case of a nested water, a new TMDL is not necessary to address the newly impaired water if the nesting procedure is followed (see Part VII, Rule 3).
- **EPA Category 4B** - water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements (such as VPDES limits under a compliance schedule) are reasonably expected to result in attainment of the Water Quality Standard by the next reporting period or permit cycle.
- **EPA Category 4C** - water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant. This category includes Virginia waters that are suspected swampwaters awaiting applicable aquatic life criteria because the impairment is determined to be caused by natural conditions.

**VA Category 4D** - part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. (Only to be applied to dissolved oxygen in tidal waters of the Chesapeake Bay).

### ***IMPAIRED - Waters are impaired or threatened and require a TMDL***

- **EPA Category 5 - Waters are impaired or threatened and a TMDL is needed.**

**VA Category 5A** - a Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list).

**VA Category 5B** - the Water Quality Standard for shellfish use is not attained. One or more pollutants causing impairment requires TMDL development.

**VA Category 5C** - the Water Quality Standard is not attained due to "suspected" natural conditions. The water is impaired for one or more designated uses by a pollutant(s) and may require a TMDL (303d list). WQ Standards for these waters may be re-evaluated due to the presence of natural conditions.

**VA Category 5D** - the Water Quality Standard is not attained where TMDLs for a pollutant(s) have been developed but one or more pollutants are still causing impairment requiring additional TMDL development.

**VA Category 5E** - effluent limited facilities are not expected to meet compliance schedules by next permit cycle or reporting period.

**VA Category 5F** - the Water Quality Standard is attained for a pollutant(s) with a TMDL and 303(d) delisting approved but the water remains impaired for additional pollutant(s) requiring TMDL development.

**VA Category 5R** - the Water Quality Standard is not attained, and the water is impaired, and implementation of an EPA-accepted restoration plan is expected to result in attainment. A status update will be provided each 303(d) cycle to evaluate progress.

- **EPA Category 5M** - the Water Quality Standard is not attained for mercury primarily due to atmospheric deposition.

Excerpted from *2018 Water Quality Assessment Guidance Manual*

**APPENDIX LIS-4H - WATER QUALITY  
TABLE**

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
44-A-23 CWV LAND ACQUISITION, LLC 60 MILLER LANE	2002	(Original well owner is Hubbard Sprouse)	yes observed	drilled - small diameter PVC	8/16/2001 00-124-067	365	4
44-A-24 SPOUSE, HUBBARD A. & BARBARA A. NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-25 SPOUSE, HUBBARD A. & BARBARA A. 74 PINEGROVE ROAD	1982		yes observed	small diameter PVC			
44-A-30 SPOUSE, HUBBARD & BARBARA 68 PINEGROVE ROAD	1979		yes observed	large diameter concrete tile			
45-2-3-D CLARK, DAVID T. & ELIZABETH K. NO DWELLING	N/A	VACANT	N/A				
45-2-3-E CLARK, DAVID T. NO DWELLING	N/A	VACANT	N/A				
45-2-3-E1 CLARK, DAVID T. 62 MILLER LANE	2004	House appears to be built on 45-2-3-E, but is listed on GIS web site as built on 45-2-3-E1	yes observed	small diameter PVC	10/27/2004 04-124-068	50	2
45-2-3-B CLARK, DAVID T., JR. NO DWELLING	N/A	VACANT	N/A	N/A			
45-A-9 CLARK, DAVID T., JR. NO DWELLING	N/A	VACANT	N/A	N/A			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
45-2-3-C BOOKER, ELOUISE M, ET ALS 80 AND 82 MILLER LANE	1996	Cumberland GIS shows two possible dwellings on this parcel, addresses of 80 and 82 Miller Lane	no- assumed based on dwelling				
45-2-2-B WICK, JOHN H., III NO DWELLING	N/A	VACANT	N/A	N/A			
45-A-2-D CWV LAND ACQUISITION, LLC 220 MILLER LANE			no- assumed based on dwelling				
45-2-1-A CLARK, DAVID T. & ELIZABETH K. 120 MILLER LANE	1997	No well observed on this lot, but there could be a shared well with adjacent lot (45-2-1-A1), both owned by David and Elizabeth Clark	no- assumed based on dwelling				
45-2-1-A1 CLARK, DAVID T. & ELIZABETH K. 122 MILLER LANE	1996	Well on this lot may serve adjacent lot- same owner	yes observed	small diameter PVC			
45-A-8-A1 HOBSON, JESSE 14 ALDER LANE	2003		yes observed	large diameter concrete tile			
45-A-8-A SCALES, JEFFREY C. 128 AND 130 MILLER LANE	2003	Possibly two dwellings as there are two addresses in the Cumberland GIS system for this lot	no- assumed based on dwelling(s)				
45-A-6 JAMES, CORA 5 ALDER LANE	1958		yes-observed	large diameter concrete tile			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
38-A-6-B GREEN, RICHARD C., JR. & PEMBERTON 228 AND 246 MILLER LANE	2001	Well at 246 address outside the 500 ft. perimeter. Possible dwelling at 228 Miller Lane, possible well within 500-ft. perimeter	yes-observed at 246, not at 228	small diameter PVC			
45-A-2 HOBSON, ALETHIA RENEE GREGORY 206 MILLER LANE	1961	Cumberland GIS shows this lot owned by Hobson, but dwelling shown located on adjacent lot 45-A- 2-G.	yes-observed	small diameter PVC			
45-A-2-G GILES, MICHAEL L., II 202 MILLER LANE	2007		yes-observed	small diameter PVC			
45-A-2-G2 GENTILE, PHILLIP R., III 204 MILLER LANE	2007	property within 500-ft. perimeter but well outside of 500-ft. perimeter and thus not shown on vicinity map	yes-observed	small diameter PVC			
45-A-2-H CRENSHAW, LLOYD R. & GERTRUDE O. 208 MILLER LANE	2007		yes-observed and google	small diameter PVC			
45-A-2-G3 CASHION, BRUCE 180 MILLER LANE	2007	Possibly two wells on this property, a shallow well and a deep well. However both wells are referenced by the same well number.	yes observed	drilled - small diameter PVC	11/2/2007 124-087	205	5
45-A-2-G3 CASHION, BRUCE 180 MILLER LANE	2007	Possibly two wells on this property, a shallow well and a deep well. However both wells are referenced by the same well number.	no- based on well and lot records	bored	11/17/2008 07-124-087	55.5	NA
45-A-2-A GILLS, STEVE A. 192 MILLER LANE	1988		no- assumed well based on dwelling				

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
45-A-4 CLINE, SANDRA 16 ALDER LANE	1979	Property within 500 ft. perimeter but well outside of 500 ft. perimeter and thus not shown on vicinity map.	no-assumed well > 500 ft. based on well records	drilled	5/28/08 07-124-151	305	2 to 3
45-A-4-A GUNNARSSON, RAGNAR L NO DWELLING	N/A	VACANT	N/A	N/A			
45-1-39 PALMORE, ELLIS M. LUMBER, INC. NO DWELLING	N/A	VACANT	N/A	N/A			
45-A-3 GUNNARSSON, RAGNAR L 57 ALDER LANE	1995	Property within 500-ft. perimeter but well outside of 500-ft. perimeter and thus not shown on vicinity map	yes-observed > 500 ft.	small diameter PVC			
38-A-6-A GREEN, LINDA K., TRUSTEE 264 MILLER LANE	1989		yes- visible	large diameter concrete tile			
38-A-6 TERRY, JAMES 300 MILLER LANE	1990	Property posted- did not access, however dwelling visible from Google Earth	no- assumed based on dwelling	N/A			
38-A-2 PARKER, CHARLES LESTER, ET ALS NO DWELLING	N/A	VACANT	N/A	N/A			
38-A-1 AMERICAN TIMBERLAND LLC NO DWELLING	N/A	VACANT	N/A	N/A			
45-A-2-B WADE, JOHN L. 216 MILLER LANE	1989	Dwelling appears to be built on 38-A-6-D, but is shown on GIS web site as 45-A-2-B	yes- visible	small diameter PVC			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
38-A-6-D CEMETERY GILLIAM 230 AND 220 MILLER LANE	No info	GIS website says this is a cemetery, however during windshield survey it appeared to have three dwellings on parcel	yes	small diameter PVC			
44-2-9 JACKSON, BARBARA & MONTGOMERY, GAIL NO DWELLING	N/A	VACANT	N/A	N/A			
44-2-10 JAMES, JACQUELINE ELIZABETH 75 PINEGROVE ROAD	1976		yes-observed	large diameter concrete tile			
44-A-32 GOODE, JANICE NASH 79 PINEGROVE ROAD	1960		yes observed	drilled	6/21/2011 11-124-043	225	15
44-A-33 NASH, MORRIS L., FOR LIFE 87 PINEGROVE ROAD	NO INFO		yes observed	large diameter concrete tile			
44-A-34 GOODE, SHON C. NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-37-A LOFTIS, CHRISTOPHER W 13 LIBERTY LANE	2000	No well observed on this lot, but there could be a shared well with an adjacent lot. Assume well on this lot until determined otherwise.	no- assumed based on dwelling				
44-A-51 DIMING, DAVID ROY & LESLIE MARIE 19 LIBERTY LANE	2000		yes observed	small diameter PVC			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
44-A-35-A JENKINS, TONI N. 30 LIBERTY LANE	2017		yes observed	small diameter PVC			
44-A-38 MILLER, ROBERTA H. 38 LIBERTY LANE	1979		yes observed	large diameter concrete tile			
44-A-16 GREGORY, ROOSEVELT 263 PINEGROVE ROAD	1975		yes observed	small diameter PVC			
44-A-17 PINE GROVE COMMUNITY CENTER TRUSTEE 267 PINEGROVE ROAD	1950	2011 Per Sybil Mayo - no one is living at the school	yes-observed	drilled	11/27/1991 no well ID number on log	145	2.5
44-A-18 SCOTT, HOWARD ESTATE 296 PINEGROVE ROAD	1880	House appears to be abandoned - unsure if well present near house, but if so it is not in use, and house is outside 500-ft. perimeter	no and N/A	N/A			
37-A-67 WADE, WILLIAM & CORDELL 356 PINEGROVE ROAD	1974	Lot within 500-ft. perimeter, well location is beyond 500 ft.	yes-observed >500 ft.	large diameter concrete tile			
37-A-68 JEFFERSON, LEONA, ET ALS NO DWELLING	N/A	VACANT	N/A	N/A			
37-A-63 MARTIN, BLAKE AUBRE & DEIDRE D. NO DWELLING	N/A	VACANT	N/A	N/A			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
37-A-63-B MARTIN, BLAKE AUBRE & DEIDRE D. 448 PINEGROVE ROAD	NO INFO	Lot within 500-ft. perimeter, but dwelling and assumed well is beyond the 500-ft. perimeter	no-assumed based on dwelling and well log, > 500 ft.	drilled	11/8/2011 09-124-042	205	7
37-A-71 MARTIN, ROBERT S., JR. & FAY J. 532 PINEGROVE ROAD	1900/1965	did not locate dwelling during windshield survey	no	N/A			
37-A-70 AGEE, SUNNY MARTIN & MARTIN, EDWARD 530 PINEGROVE ROAD	1868	lot within 500-ft. perimeter, well (assumed location) is beyond 500 ft.	no- assumed based on dwelling >500 ft.	N/A			
44-1-2 TOTH, DAVID A. & ELAINE L, TRUSTEES 302 BROWN ROAD	2003	lot within 500-ft. perimeter, well location is beyond 500 ft. (original well owner is David Hassell)	no- assumed based on dwelling and well log >500 ft.	large diameter bored	3/14/02 02-124-345	41	4
44-1-1 BAILEY, W. GARLAND & SUE ELLEN NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-15 OULIE, KEITH M NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-52 BISE, JACKSON D.,JR. & JONATHAN D. NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-12 MARABLE, GEORGE NO DWELLING	N/A	VACANT	N/A	N/A			

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
44-A-39 BISE, JACKSON D.,JR. & JONATHAN D. NO DWELLING	N/A	VACANT	N/A	N/A			
44-A-37 WEST, JERRY NO DWELLING	N/A	VACANT	N/A	N/A			
45-1-41 PALMORE, ELLIS M. LUMBER, INC. NO INFO	N/A	VACANT	N/A	N/A			
45-A-11 PILLAI, SIVANAND SUBRAMANIAN & 110 ANDERSON HIGHWAY	2012	No dwelling observed, possible dwelling outside 500-ft. perimeter per Google Earth, VDH plat shows 'proposed cabin'	no- assumed well based on plat and well log >500 ft	drilled	7/27/12 No well ID number on log	155	8
45-A-11A GOODE, JANICE NASH NO INFO	NA	VACANT	N/A				
45-A-11B ANDERSON, RHONDA NO INFO	NO INFO	No dwelling observed, possible dwelling outside 500-ft. perimeter per Google Earth	no-assumed well > 500 ft.				
45-A-12-A VALCO INVESTMENTS, LLC NO DWELLING	N/A	VACANT	no				
45-A-12-C MILBURN, JACOB E. 6678 BLENHEIM ROAD	2018	lot within 500-ft. perimeter, well location is beyond 500 ft. (original well owner is Ken Broadwater Homes)	yes-observed >500 ft.	drilled	1/27/2018 17-124-71	475	50
45-A-12-D HEIS, ELMER J. & FAYE N. 53 ANDERSON HIGHWAY	2006	lot within 500-ft. perimeter, assumed well location is beyond 500 ft.	no-assumed based on dwelling > 500 ft.				

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
45-A-12-E KEN BROADWATER HOMES, LLC NO DWELLING	N/A	VACANT	N/A				
45-A-12-F HODGES, DALE, JR. & RACHEL COOK 6672 BLENHEIM ROAD	2007	lot within 500-ft. perimeter, well location is beyond 500 ft.	yes-observed >500 ft.	unsure			
45-A-16 MCCRAW, WAYNE T. 31 ANDERSON HIGHWAY	1988		yes-observed (2 wells)	large diameter concrete tile			
45-A-15-B AUGUSTINO, CHERYLE ELIZABETH & CHASE 29 ANDERSON HIGHWAY	1997	lot within 500-ft. buffer, assumed well location is beyond 500 ft.	no-assumed based on dwelling but > 500 ft.				
45-A-15-A HATCH, GEORGE M. III & REBECCA A.L. 15 ANDERSON HIGHWAY	2007	lot within 500-ft. buffer, well location is beyond 500 ft. (original well owner is Jimmy Morris)	yes-observed >500 ft	bored	12/20/2006 05-124-164	45	3
45-A-15 WHITE, CLIFTON C. & KIMBERLY 1 ANDERSON HIGHWAY	1995	lot within 500-ft. buffer, assumed well location is beyond 500 ft.	no-assumed based on dwelling, but > 500 ft.	N/A			
45-1-15 B&Q PROPERTIES, LLC 3 ANDERSON HIGHWAY	2014	Duplex- one well observed	yes observed	small diameter PVC			
45-1-16 MANAGE THIS, LLC 24 LILY DRIVE	2002	2 wells present, one small diameter, one large diameter. (Original well owner shown as Donald Barrett and Ellis Cook)	yes-observed (2 wells)	1 drilled and 1 bored?	5/17/2002 02-124-062	200	12
45-1-16-A MANAGE THIS, LLC 118 LILY DRIVE	2002	(Original well owner is Ellis Cook and Donald Barrett), no VDH plat available	yes observed	drilled	5/22/2003 02-124-159	170	25

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
45-1-34 CWV LAND ACQUISITION, LLC 2375 MOSBY ROAD	NA	VACANT LOT	N/A				
45-1-35 CWV LAND ACQUISITION, LLC 2375 MOSBY ROAD	1987	(Original well owner is Isom, Garland M., & Vickie L.)	yes-observed	large diameter concrete tile			
45-1-36-A CROWDER, ROY H. 2379 MOSBY ROAD	2010	(Original well owner Guy Haalboom, Jr.)	no- assumed based on dwelling	drilled	6/2/2010 08-124-117	205	8
45-1-36 MORTON, ROBERT KERRY 2369 MOSBY ROAD	2000	2 wells observed, one small diameter, one large diameter. VDH Well Permit dated 4/09/99 was issued for well 99-124-066, and shows an existing well on the lot as well as the new well. VDH permit does not specify which well is 99-124-066 (if it is the drilled or bored well)	yes-observed (2 wells)	1 drilled and 1 bored	99-124-066		
45-1-37 BELCH, ROBERT G. 2377 MOSBY ROAD	1982	Well outside the 500-ft. perimeter	yes-observed > 500 ft.	large diameter concrete tile			
45-1-38 GREEN, LARRY S. & SHARON R. 2365 MOSBY ROAD	NO INFO	Well outside the 500-ft. perimeter	yes-observed > 500 ft.	large diameter concrete tile			
37-2-3 GOODWYN, R. CHRISTIAN, JR. 385 PINEGROVE ROAD		Lot and well outside the 500-ft. perimeter	no-assumed based on dwelling, and log but > 500 ft.	bored	4/6/2001 01-124-012	36	2

**LIS -4H - Table 1**  
**All Tax Parcels within 500 feet of Facility Boundary**

Parcel ID Owner name Physical/911 address	Year Dwelling Built (Approx.)	Notes	Able to locate well? (yes/no)	Type of well	Well Completion Report (Date Completed/ID Number)	Depth of well (ft.)	Yield (GPM)
44-2-7-A CASTELMARE, KEITH J. AND SUSAN M. 49 PINEGROVE ROAD		Lot and well outside the 500-ft. perimeter. (Original well owner is Jack Gifford)	no-assumed based on dwelling, and log but > 500 ft.	drilled	6/20/08 08-124-054	181	20
37-2-2 WILLIAMS, EARL W. AND BEVERLY C. 391 PINEGROVE ROAD		Lot and well outside the 500-ft. perimeter (Original well owner is Larry Green)	no-assumed based on dwelling, and log but > 500 ft.	drilled	4/25/05 05-124-019	140	10

**APPENDIX LIS-4H - WATER QUALITY  
CORRESPONDENCE**

**From:** Hennessey, Walter  
**To:** [Ken Bannister](#)  
**Subject:** Re: Wells along Pinegrove Road and Miller Lane  
**Date:** Thursday, July 11, 2019 8:49:47 AM

---

ATTENTION: Email sent from outside DAA.

Mr. Ken- the ones I sent you guys are the only ones that relate to what you're looking for. I have spend alot of time pouring over each and every one of these sites. Like I stated before, I believe you ned to get someone(s) out there on the ground to survey the wells you're missing.

Respectfully- Steve

Steve Hennessey

Environmental Health Specialist,Sr.

Piedmont Health District

Cumberland Health Department

804-492-4661

On Thu, Jul 11, 2019 at 7:07 AM Ken Bannister <[kbannister@daa.com](mailto:kbannister@daa.com)> wrote:

Hi Steve,

Last year you helped us find well logs for wells along Pinegrove Road and Miller Lane in Cumberland County. I would like to confirm that no new wells have been drilled in this area, and/or if possible send a technician down in the next few days to recheck the files with you on this matter. Please advise on the best way to confirm there are no additional wells in this vicinity. We are interested in anything along Pinegrove road from Rt. 60 as far north as Muddy Creek, and anything at all along Miller Lane.

I have attached the ones that you did send us last year.

Best regards,

Ken Bannister

**From:** Hennessey, Walter <[steve.hennessey@vdh.virginia.gov](mailto:steve.hennessey@vdh.virginia.gov)>  
**Sent:** Thursday, July 19, 2018 9:08 AM  
**To:** Sayem Zaman <[szaman@daa.com](mailto:szaman@daa.com)>  
**Subject:** Re: FW: well records

Morning, I had those ready first thing last week but apparently communications fell through. Please contact my secretary Sandra Steel here at the office at 804-492-4661 since there ate about 23 pages that were copied (@ 50 cents per copy payable to the HD here). Have a good day-

Steve H.

Steve Hennessey  
Environmental Health Specialist,Sr.  
Piedmont Health District  
Cumberland Health Department  
804-492-4661

On Wed, Jul 18, 2018 at 5:18 PM, Sayem Zaman <[szaman@daa.com](mailto:szaman@daa.com)> wrote:

Hi Steve,

Have you found any boring logs information on the private drinking water wells that we are interested in? If you want, we can come to your office and will try to find that information.

Thanks for your help,

Sayem

**From:** Sayem Zaman

**Sent:** Thursday, June 28, 2018 2:20 PM  
**To:** 'Hennessey, Walter' <[steve.hennessey@vdh.virginia.gov](mailto:steve.hennessey@vdh.virginia.gov)>  
**Cc:** 'ed.dunn@vdh.virginia.gov' <[ed.dunn@vdh.virginia.gov](mailto:ed.dunn@vdh.virginia.gov)>; Ken Bannister <[KBannister@daa.com](mailto:KBannister@daa.com)>  
**Subject:** RE: well records

Steve,

Please check the attached excel sheet of the household that we are interested to receive the drinking well information. This is the best information we can gather from the county site. Also, I attached the neighborhood map that we are interested in.

Feel free to let us know any questions.

Thanks for your help

Sayem

---

**From:** Hennessey, Walter <[steve.hennessey@vdh.virginia.gov](mailto:steve.hennessey@vdh.virginia.gov)>  
**Sent:** Thursday, June 28, 2018 12:52 PM  
**To:** Sayem Zaman <[szaman@daa.com](mailto:szaman@daa.com)>  
**Subject:** Re: well records

Yes Sayem, that would be great and a lot more efficient if you could send that data sheet to me via email--

Steve H.

Steve Hennessey

Environmental Health Specialist,Sr.

Piedmont Health District

Cumberland Health Department

804-492-4661

On Thu, Jun 28, 2018 at 12:40 PM, Sayem Zaman <[szaman@daa.com](mailto:szaman@daa.com)> wrote:

Hi Steve,

I have prepared an excel sheet with all the necessary information to locate the drinking well logs. I like to send this to you by email, once I get back to office this afternoon.

Will that be work for you?

Or if you want me to come to your office physically and look for the well logs information, I can do so.

Let us know. Thanks

Sayem

Sent from my i-phone

---

**From:** Ken Bannister <[kbannister@daa.com](mailto:kbannister@daa.com)>

**Sent:** Thursday, June 28, 2018 12:26 PM

**To:** Hennessey, Walter

**Cc:** Sayem Zaman

**Subject:** Re: well records

Thank you very much Steve!. am sending to my staff engineer who is working on this.

Ken

Sent from my T-Mobile 4G LTE Device

----- Original message -----

From: "Hennessey, Walter" <[steve.hennessey@vdh.virginia.gov](mailto:steve.hennessey@vdh.virginia.gov)>

Date: 6/28/18 11:58 AM (GMT-05:00)

To: Ken Bannister <[kbannister@daa.com](mailto:kbannister@daa.com)>

Subject: well records

Ken - tomorrow afternoon will NOT be a good time for me to assist you in finding those well logs. I told Sandra I have an appointment in the afternoon. It would be better if YOU COULD DROP OFF those names and addresses to the office TOMORROW (6-29) sometime and let us start to go through some of them. So please drop them off here since I get called out in the field unexpectedly (dog bites, inspections,etc). Please be aware, VDH did not require any well log submitting to the health departments until prior to 1990 so if you are looking for that type of data we won't have it---Have a good day.

Note- I made a crude map of the proposed landfill area involved that has 911 addresses in the area.

Steve Hennessey- EHSS

Steve Hennessey

Environmental Health Specialist,Sr.

Piedmont Health District

Cumberland Health Department

804-492-4661

**Kenneth E. Bannister, CPG**

Environmental Team Leader

## Draper Aden Associates

*Engineering • Surveying • Environmental Services*

*Lasting Positive Impact™*

Office: 804.264.2228 • Mobile: 804.292.8167

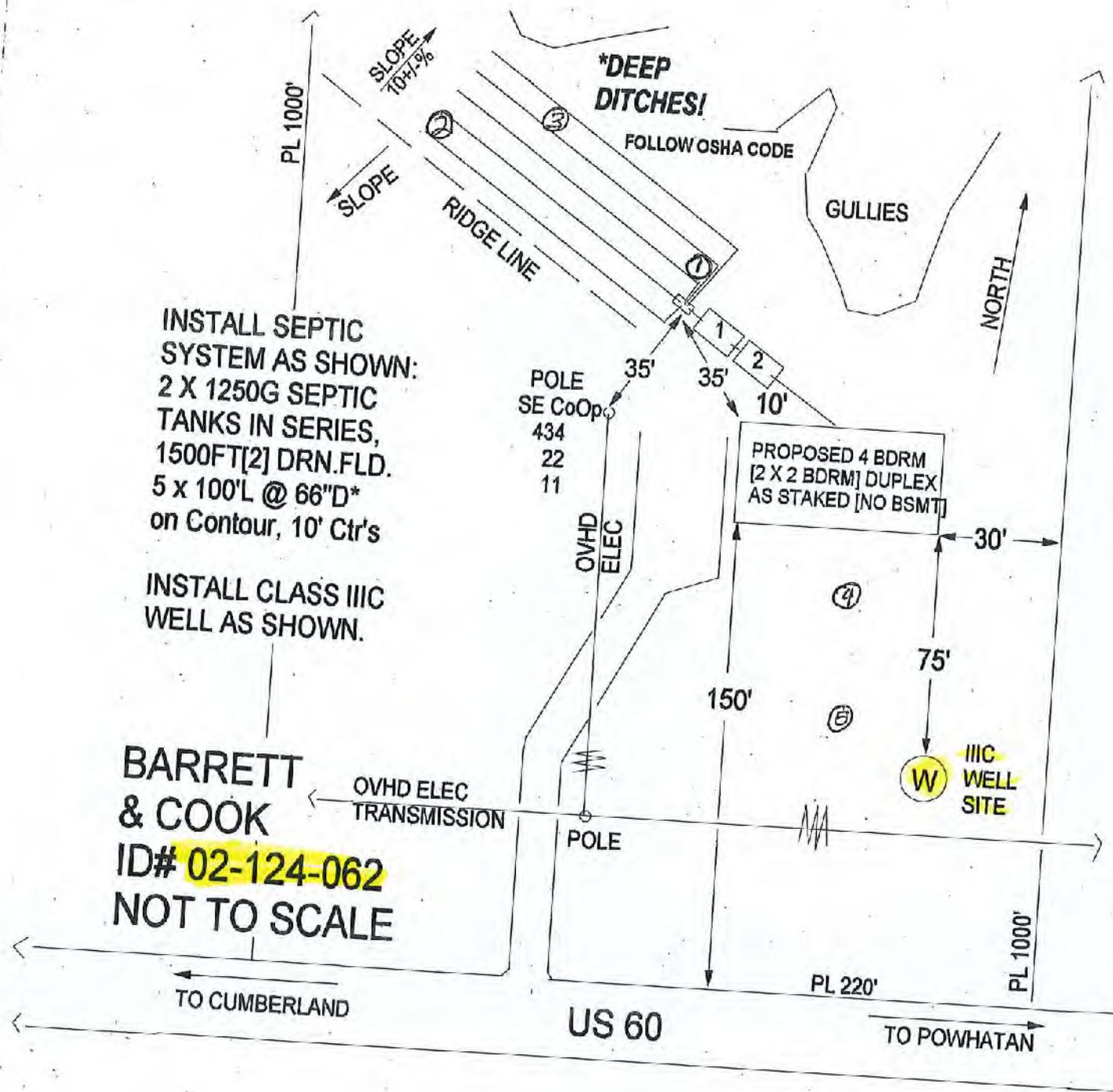
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**The greatest machine ever made can be rendered inoperable through the loss of a single cog. **What you do matters.****

**APPENDIX LIS-4H - WATER QUALITY  
WELL LOGS**

45-1-16

0:2:0



INSTALL SEPTIC SYSTEM AS SHOWN:  
 2 X 1250G SEPTIC TANKS IN SERIES,  
 1500FT[2] DRN.FLD.  
 5 x 100'L @ 66"D\*  
 on Contour, 10' Ctr's

INSTALL CLASS III C WELL AS SHOWN.

**BARRETT & COOK**  
 ID# 02-124-062  
 NOT TO SCALE

**\*DEEP DITCHES!**  
 FOLLOW OSHA CODE

PROPOSED 4 BDRM  
 [2 X 2 BDRM] DUPLEX  
 AS STAKED [NO BSMT]

III C WELL SITE

US 60

TO CUMBERLAND

TO POWHATAN

PL 1000'

NORTH

PL 220'

PL 1000'

mailed  
5-21-02



Commonwealth of Virginia  
Uniform Water Well Completion Report

Owner Donald Barrett / Ellis Cook  
Address 1850 Jeter Rd.  
Powhatan Va.  
Phone \_\_\_\_\_  
Location 6DE - on (L) near Cum/Pow. county line

Tax Map ID 45-1-16  
VDH Permt 02-124-062  
VWCB Permit \_\_\_\_\_  
VWCB ID \_\_\_\_\_  
County Cumberland

\* Well Data \*

General Information  
Drilling Method Air  
Depth to Bedrock 70'  
Static Water Level 25'  
Well Disinfected (Y or N) Y

Date Completed 5-17-02  
Yield 12 (GPM)  
Stabilized Water Level \_\_\_\_\_  
Disinfectant Used Well Sanitizer

Total Depth of Well 200'  
Length of Test 1/2 hr.  
Natural Flow (Rate) \_\_\_\_\_  
Amount Used 30 pellets

Casing  
From 0 To 75'  
Size 6 3/4" Material PVC  
Weight/Schedule 27.6 SDR

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

Gravel Pack  
From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

Grout  
From 0 To 75'  
Bore Hole Size 8 3/4"  
Type Cement  
Method pour

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

Water Zones or Screened Intervals  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

\* Use Data \*

Use Well: Domestic  Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
Public Well: Community \_\_\_\_\_ Non Community \_\_\_\_\_

\* Abandonment Information \*

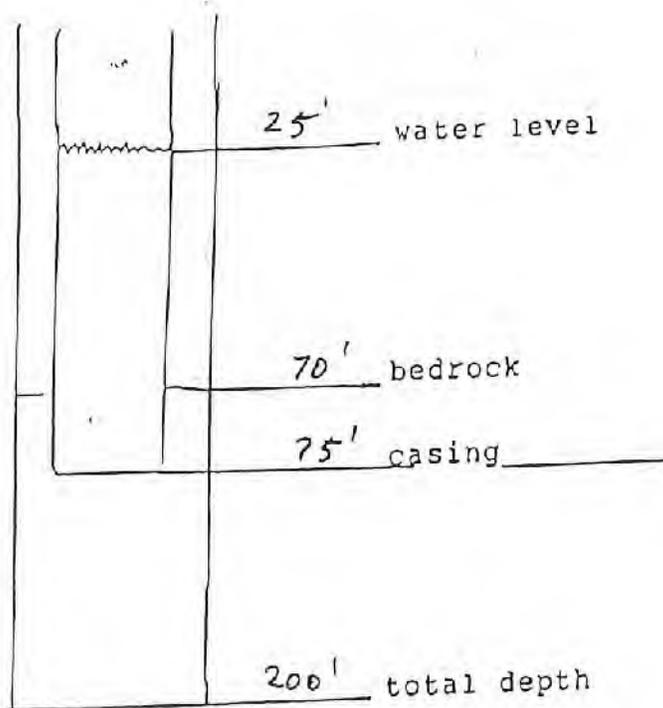
Bored or Dug Wells  
Casing Removed, Y or N? \_\_\_\_\_  
Depth to which casing was removed: \_\_\_\_\_  
Material and Type of Fill: \_\_\_\_\_  
Source of Fill \_\_\_\_\_  
Concrete Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Wells other than Bored Wells  
Casing removed, Y or N? \_\_\_\_\_  
Depth to which casing was removed: \_\_\_\_\_  
Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
Source of gravel or sand: \_\_\_\_\_  
Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Method of permanently marking location: \_\_\_\_\_

\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
	Brown Black White Grey	most water @ 160'-180'
		12.6 GPM @ 200'



I hereby certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and order and that the well complies with all applicable state and local regulations, ordinances and laws.

Company SLAYTON WELL DRILLING, INC  
 Address ROUTE 3, BOX 258 146 Well Drilling Dr.  
FARMVILLE, VIRGINIA 23901  
 Phone 804 223 8220

Driller's Signature Byron Slayton  
 License No. 5-17-02 Representing SLAYTON, WELL DRILLING, INC.  
 State Contractors License Number 2705031999A

37-A-63 Martin, Blake

### Construction Drawing

HD ID #: 09-124-042

#### Owner Information

Blake Martin  
530 Pinegrove Rd  
Cartersville, VA 23027

Phone: (804) 375-3335

#### Construction Drawing

Schematic drawing of sewage disposal system and topographic features.



This sewage disposal system construction permit is null and void if conditions are changed from those shown on the application or construction permit. No part of any installation may be covered or used until inspected, corrections made if necessary and the system is approved. The inspection will normally be made by the system designer, who may be an AOSE, PE, or EHS. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon direction of the Department or the system designer.

System Design By: Glen Moore; Site Evaluation By: Steve Hennessey & Glen Moore

Glen Moore

September 2, 2009  
Issue Date

~~March 2, 2011~~  
Expiration Date

Sept 2, 2012 *DM*  
4/22/11

# Commonwealth of Virginia Uniform Water Well Completion Report

Owner: Blake Martin Tax Map ID \_\_\_\_\_  
 Address: \_\_\_\_\_ VDH Permit 09-124-042  
 Phone: \_\_\_\_\_ WVCB Permit \_\_\_\_\_  
 Location: 605 (R) 654 Rd with turn to dirt R at County Cumberland  
Buck mountain #1405 # 448 Pinegrove RD

\* Well Data \*

**General Information**

Drilling Method air rotary  
 Depth to Bedrock 21  
 Static Water Level 40  
 Well Disinfected (Y or N) Y

Date Completed 11-8-11  
 Yield 7 (GMP)  
 Stabilized Water Level \_\_\_\_\_  
 Disinfectant Used Clorox

Total Depth of Well 205  
 Length of Test \_\_\_\_\_  
 Natural Flow (Rate) \_\_\_\_\_  
 Amount Used \_\_\_\_\_

**Casing**

From 0 To 21  
 Size 6" 4' Material PVC  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

**Gravel Pack**

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

**Grout**

From 0 To 20  
 Bore Hole Size \_\_\_\_\_  
 Type Cement  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

**Water Zones or Screened Intervals**

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

\* Use Data \*

Private Well: Domestic \_\_\_\_\_ Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
 Public Well: Community \_\_\_\_\_ Non-community \_\_\_\_\_

\* Abandonment Information \*

**Bored or Dug Wells**

Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

**Wells other than Bored Wells**

Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Method of permanently marking location: \_\_\_\_\_

faced



\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
0 - 21	hard	7 spm
21 - 205		will complete

(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name FRED JONES WELL CO.  
Address P. O. Box 818 Appomattox, Va. 24522  
Phone 352-7872  
Drillers Signature Fred H Jones Representing  
Date 11-8-11  
Virginia Contractors License Number 18064

45-A2-63

Well Construction Permit -- Drawing

HD ID #: 07-124-087

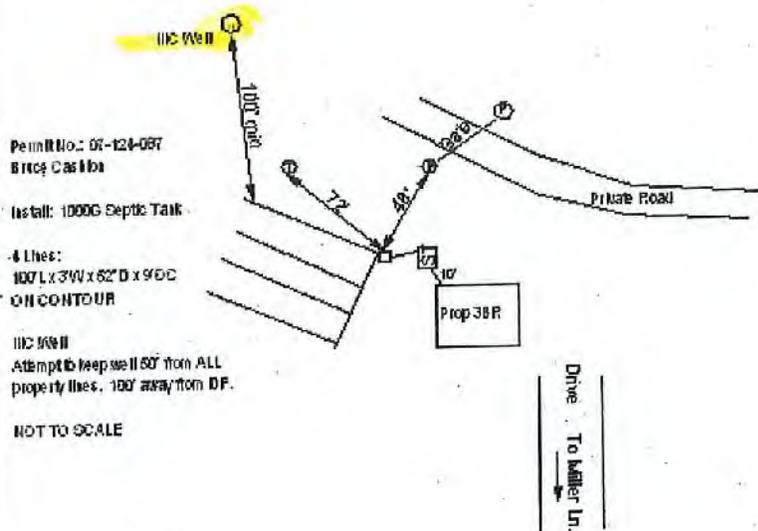
Owner Information

Bruce Cashion  
P.O. Box 820  
Midlothian, VA 23113

Phone: (804) 833-7816

Construction Drawing

Scale drawing of the well site and related features.



Show the property lines, all existing and proposed structures, existing and proposed sewage systems and water supplies, slope, and any topographic features which may impact the design of the well.

Issued by: Glen Moore

July 10, 2007  
Issue Date

January 10, 2009  
Expiration Date



Cumberland County Health Department  
P O Box 107  
15 Foster Road  
Cumberland, VA 23040  
(804) 492-4661 Voice  
(804) 492-9463 Fax

**Record of Inspection - Nonpublic Well Class IIIC**

**Property Owner**

**Bruce Cashion**  
P.O. Box 820  
Midlothian, VA 23113  
Phone: (804) 833-7816

Health Dept. ID: **07-124-087**

Tax Map: **45A2G3**

Locality: Cumberland

**Property Location**

Property Address: Rt.685

Directions: E30-L on Pinegrove (654) R on Miller Lane (685) past state maintenance sign  
=====

**Well Driller:** Fred Jones Well Co.

**Nonpublic well class:** Class IIIC

**Date construction started:** November 17, 2008

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

**Well Location / Distances from sources of pollution:**

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 100 feet; Subsurface Soil Absorption System 100 feet (nearest point); Property Line 50 feet; Other:   

**Construction, General:** (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 55.5 feet; Type of casing Concrete ; Depth of casing 55.5 feet; Diameter of casing 24 inches. Casing extends 18 inches above ground. Annular space was sealed with neat cement to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of   . Well head and opening to the interior protected: Yes. Type of well seal: Well cap. Pitless adapter used: Yes. If so, was it properly installed: Yes; and properly vented: Yes.

**Quantity:** Yield and drawdown determined by continuous pumping of    hours.

Yield: GPM; Drawdown: feet; Static Water Level: 30 feet; Type of storage: Pressure.

**Quality:** Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples:   

. Date of Sample:   

**Satisfactory Construction:** Yes on July 17, 2009

**Well Approved for Use:** Yes on July 17, 2009

Signed July 20, 2009

\_\_\_\_\_  
Glen Moore, Environmental Health Specialist SR

1760 Williams Ln

## Commonwealth of Virginia Uniform Water Well Completion Report

Owner: Bruce Cashion Tax Map ID 45A263  
 Address: B K Associates VDH Permit 07-124-017  
 Phone: \_\_\_\_\_ WVCB Permit \_\_\_\_\_  
 Location: 6015 @ 654 @ 645 past State Main WVCB ID \_\_\_\_\_  
Lot 3 County Cumberland

\* Well Data \*

**General Information**

Drilling Method rotary air Date Completed 11-2-07 Total Depth of Well 205  
 Depth to Bedrock 36 Yield 5 (GMP) Length of Test \_\_\_\_\_  
 Static Water Level 25 Stabilized Water Level \_\_\_\_\_ Natural Flow (Rate) 5  
 Well Disinfected (Y or N) Y Disinfectant Used Clorox Amount Used \_\_\_\_\_

**Casing**

From 0 To 36 From \_\_\_\_\_ To \_\_\_\_\_  
 Size 6 1/2 Material PVC Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_ Weight/Schedule \_\_\_\_\_

**Gravel Pack**

From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

**Grout**

From 0 To 20 From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_ Bore Hole Size \_\_\_\_\_  
 Type Cement Type \_\_\_\_\_  
 Method \_\_\_\_\_ Method \_\_\_\_\_

**Water Zones or Screened Intervals**

From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

\* Use Data \*

Private Well: Domestic \_\_\_\_\_ Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
 Public Well: Community \_\_\_\_\_ Non-community \_\_\_\_\_

\* Abandonment Information \*

**Bored or Dug Wells**

Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

**Wells other than Bored Wells**

Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Method of permanently marking location: \_\_\_\_\_



*boxed*

\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
0 - 36	hard	5 gpm
36 - 200		will complete

(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name FRED JONES WELL CO.  
Address P. O. Box 818 Appomattox, Va. 24522  
Phone 352-7872  
Drillers Signature Fred H Jones APH  
Date 11-3-07 Representing \_\_\_\_\_  
Virginia Contractors License Number 18064

### Commonwealth of Virginia Uniform Water Well Completion Report

Owner Ellis Cook / Bennett  
Address 1786 Taylor Road  
Dothan Va 28139  
Phone 252-621-1215  
Location RL 60 production Cumberland lease

Tax Map ID 45 1 16B  
VDH Permit 184-02-159  
WVCB Permit \_\_\_\_\_  
WVCB ID \_\_\_\_\_  
County Cumberland

#### \* Well Data \*

**General Information**  
Drilling Method air rotary  
Depth to Bedrock 65'  
Static Water Level 25'  
Well Disinfected (Y or N) Yes

Date Completed April 22-03  
Yield 2.5 (GPM)  
Stabilized Water Level \_\_\_\_\_  
Disinfectant Used Tablet

Total Depth of Well 176  
Length of Test 2 hrs  
Natural Flow (Rate) 2.5 gpm  
Amount Used 16

**Casing**  
From 0' To 61'  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

**Gravel Pack**  
From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

**Annular Seal**  
From 0' To 30'  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

**Water Zones or Screened Intervals**  
From 140' To 141'  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From 155' To 156'  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

#### \* Use Data \*

Private Well: Domestic  Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
Public Well: Community \_\_\_\_\_ Non Community \_\_\_\_\_

#### \* Abandonment Information \*

**Bored or Dug Wells**  
Casing Removed, Y or N? \_\_\_\_\_  
Y, Depth to which casing was removed: \_\_\_\_\_  
Depth and Type of Fill: \_\_\_\_\_  
Source of Fill \_\_\_\_\_  
Cement Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
Method of permanently marking location: \_\_\_\_\_

**Wells other than Bored Wells**  
Casing removed, Y or N? \_\_\_\_\_  
Depth to which casing was removed: \_\_\_\_\_  
Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
Source of gravel or sand: \_\_\_\_\_  
Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
	Acid Clay 12'	
	Brown Limestone 2.0'	
	Brown Sandstone 26'	
	Brown Shale 65'	
	Grey Granite 61'	
	Water Zone 140'	
	Water Zone 155'	

(User additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name Central Va Well Co  
 Address 2030-B Old Town Road  
Poultersville VA 22129  
 Phone 512 8590

Drillers Signature Jesse Tate  
 Representing Central Va Well Co

Virginia Contractors License Number 2705-025729A

45-2-3B

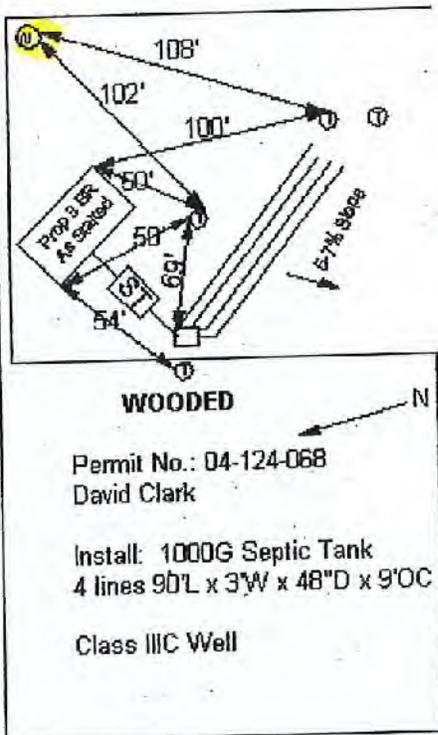
**Owner Information**

Davaid Clark  
3741 Old Buckingham Rd  
Powhatan, VA 23139

Phone: (804) 598-3709  
HD ID #: 04-124-068

**Construction Drawing**

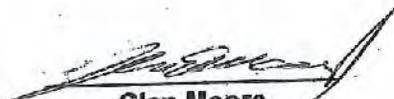
Scale drawing of the well site and related features.



Existing Drive  
Out to 685

No House

Show the property lines, all existing and proposed structures, existing and proposed sewage systems and water supplies, slope, and any topographic features which may impact the design of the well.

  
Glen Moore

5/17/2004  
Issue Date

11/17/2008  
Expiration Date

faxed to H.D  
11-4-04

Form GW-2

COMMONWEALTH OF VIRGINIA  
WATER WELL COMPLETION REPORT

DEQ WELL # \_\_\_\_\_

Revised 12/1/00

(Certification of Completion/County Permit)

Virginia Dept. Of Environmental Quality  
P.O. Box 10009  
Richmond, VA 23240-0009

COUNTY / CITY CUMBERLAND / I.D. # 04-124-068  
(County / City Stamp)

Virginia Plane Coordinates	
_____ N	_____ E
Latitude & Longitude	
Datum: <u>37° 33' 19.6" N</u> <u>078° 07' 06.5" W</u>	
Topo. Map No. _____	Elevation <u>357</u> ft.
Formation _____	Lithology _____
River Basin _____	Province _____
Type Logs _____	Cuttings _____
Water Analysis _____	Aquifer Test _____

Owner David Clark  
Well Designation or number 3741 Old Buckingham I  
Address 3741 Old Buckingham Rd.  
CUMBERLAND, VA 23040

Phone \_\_\_\_\_  
Drilling Contractor ROYALL PUMP & WELL CO.  
Address 2958 ANDERSON HWY  
POWHATAN, VA 23139  
Phone 804-598-1291

WELL LOCATION: \_\_\_\_\_ (feet/miles) \_\_\_\_\_ (direction) of \_\_\_\_\_  
and \_\_\_\_\_ (feet/miles) \_\_\_\_\_ (direction) of \_\_\_\_\_  
If possible please include map showing marked well location.

Date Started 10/27/2004 Date Completed 10/27/2004 Type Rig Bored

DEQ Permit \_\_\_\_\_  
County Permit \_\_\_\_\_  
Certification of inspecting official:  
This well does \_\_\_\_\_ does not \_\_\_\_\_  
Meet code/law requirements.  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_  
  
For Office Use

Tax Map I.D. No. \_\_\_\_\_  
Subdivision \_\_\_\_\_  
Section \_\_\_\_\_  
Block \_\_\_\_\_  
Lot \_\_\_\_\_  
Class Well I \_\_\_\_\_ IIA \_\_\_\_\_  
IIB \_\_\_\_\_ IIIA \_\_\_\_\_ IIIB \_\_\_\_\_  
IIIC  IIID \_\_\_\_\_ IIIE \_\_\_\_\_

1. WELL DATA: New  Reworked \_\_\_\_\_ Deepened \_\_\_\_\_
- Total Depth 50 ft.  
Depth to Bedrock 50 ft.
- Hole Size (Also include reamed zones)  
46 inches from 0 to 20 ft.  
36 inches from 20 to 50 ft.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Casing Size (I.D.) and Material  
30 inches from +1 to 49 ft.
- Material Concrete  
Weight per ft. \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Material \_\_\_\_\_  
Weight per ft. \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Screen Size & Mesh for Each Zone  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Gravel Pack  
From \_\_\_\_\_ to \_\_\_\_\_ ft.  
From \_\_\_\_\_ to \_\_\_\_\_ ft.
- Grout  
From 0 to 20 ft. Type Concrete  
From \_\_\_\_\_ to \_\_\_\_\_ ft. Type \_\_\_\_\_

2. WATER DATA: Water Temperature \_\_\_\_\_ F  
Static Water Level (unpumped level measured) \_\_\_\_\_ 30 ft.  
Stabilized measured pumping water level \_\_\_\_\_ ft.  
Stabilized Yield \_\_\_\_\_ gpm after \_\_\_\_\_ hours  
Natural Flow: Yes \_\_\_\_\_ No \_\_\_\_\_ Flow Rate 2 gpm  
Comment on water quality: \_\_\_\_\_
3. WATER ZONES: From \_\_\_\_\_ 30 To \_\_\_\_\_ 35  
From \_\_\_\_\_ To \_\_\_\_\_ & From \_\_\_\_\_ To \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_ & From \_\_\_\_\_ To \_\_\_\_\_
4. USE DATA  
Type of Use: Drinking  Livestock Watering \_\_\_\_\_  
Irrigation \_\_\_\_\_ Food Processing \_\_\_\_\_ Household   
Manufacturing \_\_\_\_\_ Fire Safety \_\_\_\_\_ Cleaning   
Recreation \_\_\_\_\_ Aesthetic \_\_\_\_\_ Cooling/Heating \_\_\_\_\_  
Injection \_\_\_\_\_ Other \_\_\_\_\_  
Type of Facility: Domestic  Public Water Supply \_\_\_\_\_  
Public Institution \_\_\_\_\_ Farm \_\_\_\_\_ Industry \_\_\_\_\_  
Commercial \_\_\_\_\_ Other \_\_\_\_\_
5. PUMP DATA: Type \_\_\_\_\_ Rated hp. \_\_\_\_\_  
Intake Depth \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm at \_\_\_\_\_ head
6. WELLHEAD: Type of Well Seal \_\_\_\_\_  
Pressure Tank \_\_\_\_\_ gal. Location \_\_\_\_\_  
Sample Tap \_\_\_\_\_ Measurement Port \_\_\_\_\_  
Well Vent \_\_\_\_\_ Pressure Relief Valve \_\_\_\_\_  
Gate valve \_\_\_\_\_ Check Valve (when required) \_\_\_\_\_  
Electrical Disconnect Switch on Power Supply \_\_\_\_\_
7. DISINFECTION: Well Disinfected \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
Date \_\_\_\_\_ Disinfectant Used \_\_\_\_\_  
Amount \_\_\_\_\_ Hours Used \_\_\_\_\_
8. ABANDONMENT: (where applicable) \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
Casing Pulled \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ NA \_\_\_\_\_  
Plugging Grout From \_\_\_\_\_ to \_\_\_\_\_ Material \_\_\_\_\_

faxed 11-4-04

OWNER: David Clark

DEQ WELL # 04-124-068

9. State law requires submitting to the Virginia State Water Control board information about ground water and wells for every well made in the State intended for water, or any other non-exempt well. This information must be submitted whether the well is completed, on standby, or abandoned. Information required includes: an accurately and completely prepared water well completion report, full data from any aquifer pumping tests, drill cuttings taken at ten foot intervals (unless exemption is secured), the results of any chemical analysis, and copies of the geophysical logs. Quarterly pumpage and use reports are required from owners of public supply and industrial wells. County or State permits to drill may be required in some parts of the state. Some counties require submission of a water well completion report. The Virginia State health Department requires a water well completion report for public water supply.

10. Driller's Log (Use additional sheets if necessary)

10. Driller's Log (Use additional sheets if necessary)				11. Drilling Time (Min.)	12. Diagram of Well Construction (with dimensions)
Depth (feet)		Type of Rock or Soil	Remarks		
From	To	(Color, material, fossils, hardness, etc.)	(Water, caving, cavities, broken, core, shot, etc.)		
0	18	RED CLAY			
18	50	BROWN SAND STONE			

13. Well Lot Dedicated? \_\_\_\_\_ Size \_\_\_\_\_ ft. by \_\_\_\_\_ ft. Well House? \_\_\_\_\_  
 Distance to nearest pollutant source \_\_\_\_\_ ft. Type \_\_\_\_\_  
 Distance to nearest property line \_\_\_\_\_ ft. Building \_\_\_\_\_ ft.

14. WATER SERVICE PIPE: Checked under \_\_\_\_\_ p.s.i. for \_\_\_\_\_ minutes  
 Pipe Size \_\_\_\_\_ in. Material \_\_\_\_\_  
 Installer \_\_\_\_\_  
 Date \_\_\_\_\_

15. I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

Signature James A. Johnson / JAL  
 (Well driller or authorized person)

Date 10/27/2004

License Number 014253



Cumberland County Health Department  
P O Box 107  
15 Foster Road  
Cumberland, VA 23040  
(804) 492-4661 Voice  
(804) 492-9463 Fax

## Record Of Inspection-Nonpublic Drinking Water Supply System

**Owner:** Davaid Clark  
**Owner Address:** 3741 Old Buckingham Rd  
Powhatan, VA 23139  
**Health Department I.D. #:** 04-124-068  
**Tax Map:** 45-2-3B  
**Location:** 3741 Old Buckingham Rd, Powhatan  
**Subdivision:** , **Section:** , **Block:** , **Lot:**

**Well Driller:** Royall Pump and Well Co.  
**Nonpublic drinking water well class:** Class IIIC  
**Date of Installation:** 10/27/2004

### CONSTRUCTION INFORMATION

If information in any item below is secured from other sources (i.e. well log, etc.), so note.

1. Water well completion report filed as required by Sec. 12 VAC 5-630-440. Yes
2. Well Location: Distances from sources of pollution (See Table 3.1, Minimum Separation Distances) and Sec. 12 VAC 5-630-380 of the Private Well Regulations.  
Building Sewer 50 feet Pretreatment Unit 50 feet Conveyance System 100 feet  
Subsurface Soil Absorption System 100 feet (nearest point).  
Property Line 75 feet  
Other \_
3. Construction, General: (see Sec. 12 VAC 5-630-400 and 12 VAC 5-630-410 Private Well Regulations).  
Total depth of well 50 feet. Type of casing Concrete  
Depth of casing 50 feet. Diameter of casing 30 inches.  
Casing extends above the ground 12 inches. Exterior space sealed with neat cement grout to a depth of 20 feet. Screens constructed of free of rough edges and irregularities, with positive watertight seal between screen and casing? Well head and opening to the interior protected? Yes Type of well seal Well cap. Pitless adapter used? Proper venting? Yes
4. Quantity: Yield and drawdown determined by continuous pumping of      hours. Drawdown feet. Yield 2 GPM. Type of storage Pressure.
5. Quality: Sample tap provided at entry into system? No Samples(s) collected? No  
Results of samples. Date of Sample.

Remarks:

**Date:** December 10, 2004

Signed

  
Glen Moore, Environmental Health Specialist

Schematic drawing of sewage disposal system. Show the lot lines of the building site, sketch of property showing any topographic features which may impact on the design of well or sewage disposal system, including existing and/or proposed structures and sewage disposal systems and wells within 200 feet. The schematic drawing of the well site or area and/or sewage disposal system shall show sewer lines, pretreatment unit, pump station, conveyance system, and subsurface soil absorption system, reserve area, etc. When a nonpublic drinking water supply is to be permitted, show all sources of pollution within 200 feet.

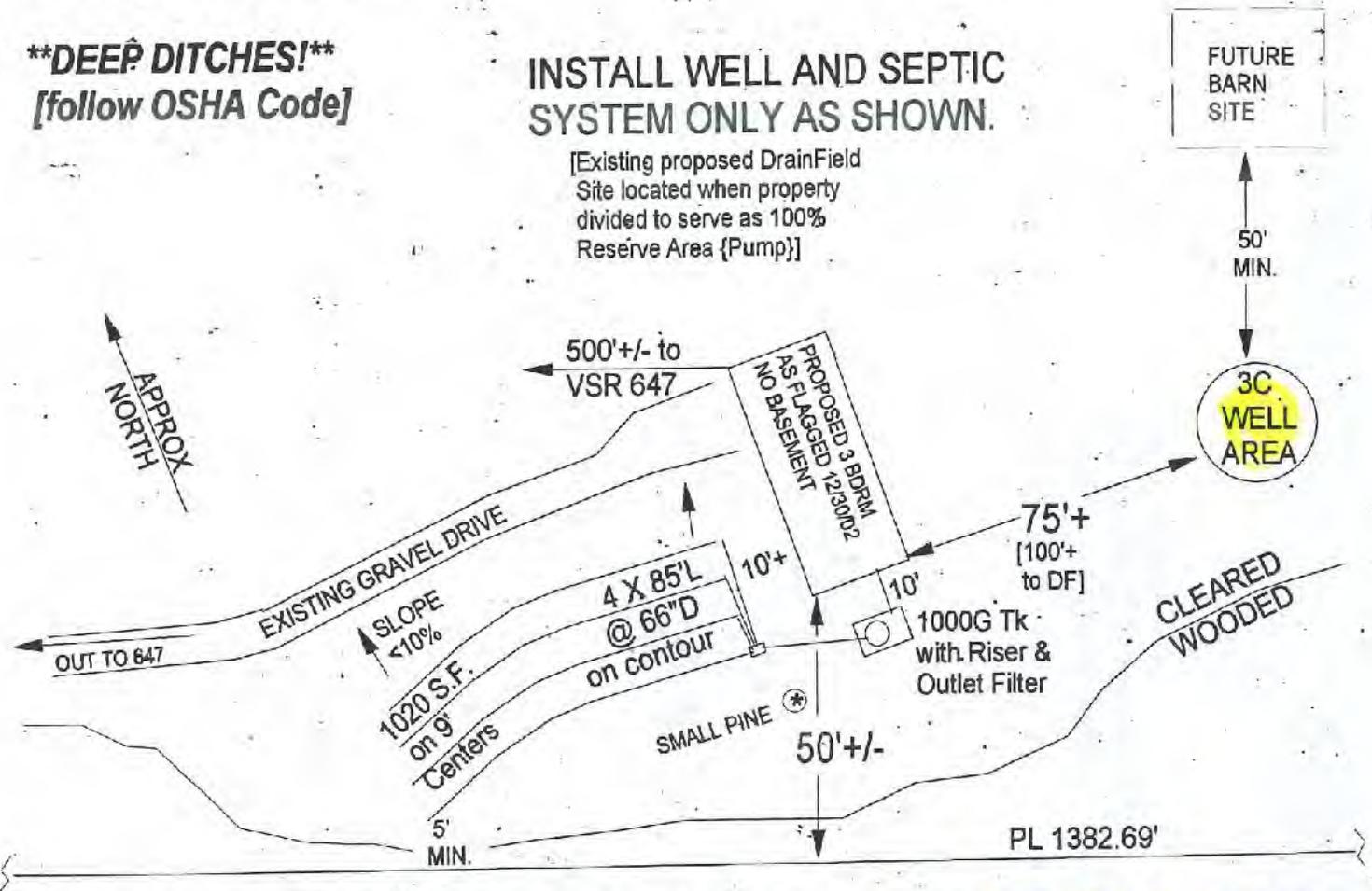
44-12

**Drawing is Not To Scale**

**\*\*DEEP DITCHES!\*\*  
[follow OSHA Code]**

**INSTALL WELL AND SEPTIC SYSTEM ONLY AS SHOWN.**

[Existing proposed DrainField Site located when property divided to serve as 100% Reserve Area {Pump}]



**DAVID HASSELL PERMIT, ID# 02-124-345**

This sewage disposal system and/or water supply is to be constructed as specified by the permit ~~X~~ or attached plans and specifications \_\_\_\_\_.

This sewage disposal system and/or well construction permit is null and void if (a) conditions are changed from those shown on the application (b) conditions are changed from those shown on the construction permit.

No part of any installation shall be covered or used until inspected, corrections made if necessary, and approved; by the local health department or unless expressly authorized by the local health dept. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon the direction of the Department.

Date: 12/30/02 Issued by: Ed Dunn  
ED DUNN E. H. S. SR. 804-492-4851

Permit Valid until 6/30/2004

Form GW-2

COMMONWEALTH OF VIRGINIA  
WATER WELL COMPLETION REPORT

DEQ WELL # \_\_\_\_\_

Revised 12/1/00

(Certification of Completion/County Permit)

Virginia Dept. Of Environmental Quality  
P.O. Box 10009  
Richmond, VA 23240-0009

# 302 BROWN RD.

COUNTY / CITY CUMBERLAND / I.D. # 02-124-345  
(County / City Stamp)

**Virginia Plane Coordinates**

Latitude & Longitude  
Datum: \_\_\_\_\_

Topo. Map No. \_\_\_\_\_  
Elevation \_\_\_\_\_ ft.  
Formation \_\_\_\_\_  
Lithology \_\_\_\_\_  
River Basin \_\_\_\_\_  
Province \_\_\_\_\_  
Type Logs \_\_\_\_\_  
Cuttings \_\_\_\_\_  
Water Analysis \_\_\_\_\_  
Aquifer Test \_\_\_\_\_

Owner George Saunders/ David Hassell  
Well Designation or number \_\_\_\_\_  
Address Rt. 647  
CUMBERLAND, VA 23040

Phone \_\_\_\_\_

Drilling Contractor ROYALL PUMP & WELL CO.  
Address 2958 ANDERSON HWY  
POWHATAN, VA 23139  
Phone 804-598-1291

DEQ Permit \_\_\_\_\_  
County Permit \_\_\_\_\_

Certification of inspecting official:  
This well does \_\_\_\_\_ does not \_\_\_\_\_  
Meet code/law requirements.  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

For Office Use

Tax Map I.D. No. \_\_\_\_\_  
Subdivision \_\_\_\_\_  
Section \_\_\_\_\_  
Block \_\_\_\_\_  
Lot \_\_\_\_\_

Class Well I \_\_\_\_\_ IIA \_\_\_\_\_  
IIB \_\_\_\_\_ IIIA \_\_\_\_\_ IIIB \_\_\_\_\_  
IIIC  IIID \_\_\_\_\_ IIIE \_\_\_\_\_

WELL LOCATION: \_\_\_\_\_ (feet/miles) \_\_\_\_\_ (direction) of \_\_\_\_\_  
and \_\_\_\_\_ (feet/miles) \_\_\_\_\_ (direction) of \_\_\_\_\_  
If possible please include map showing marked well location.

Date Started 03/14/2003 Date Completed 03/14/2003 Type Rtg Air Rotary

1. WELL DATA: New  Reworked \_\_\_\_\_ Deepened \_\_\_\_\_
- Total Depth 41 ft.  
Depth to Bedrock 41 ft.
- Hole Size (Also include reamed zones)  
46 inches from 0 to 20 ft.  
36 inches from 20 to 41 ft.
- Casing Size (I.D.) and Material  
30 inches from +1 to 41 ft.  
Material Concrete  
Weight per ft. \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Material \_\_\_\_\_  
Weight per ft. \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Material \_\_\_\_\_  
Weight per ft. \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Screen Size & Mesh for Each Zone  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.
- Gravel Pack  
From \_\_\_\_\_ to \_\_\_\_\_ ft.  
From \_\_\_\_\_ to \_\_\_\_\_ ft.
- Grout  
From 0 to 20 ft. Type Other  
From \_\_\_\_\_ to \_\_\_\_\_ ft. Type Other

2. WATER DATA: Water Temperature \_\_\_\_\_ F  
Static Water Level (unpumped level measured) \_\_\_\_\_ 23 ft.  
Stabilized measured pumping water level \_\_\_\_\_ ft.  
Stabilized Yield \_\_\_\_\_ gpm after \_\_\_\_\_ hours  
Natural Flow: Yes \_\_\_\_\_ No \_\_\_\_\_ Flow Rate 4 gpm  
Comment on water quality: \_\_\_\_\_
3. WATER ZONES: From 23 To 24  
From \_\_\_\_\_ To \_\_\_\_\_ & From \_\_\_\_\_ To \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_ & From \_\_\_\_\_ To \_\_\_\_\_
4. USE DATA  
Type of Use: Drinking  Livestock Watering \_\_\_\_\_  
Irrigation \_\_\_\_\_ Food Processing \_\_\_\_\_ Household   
Manufacturing \_\_\_\_\_ Fire Safety \_\_\_\_\_ Cleaning \_\_\_\_\_  
Recreation \_\_\_\_\_ Aesthetic \_\_\_\_\_ Cooling/Heating \_\_\_\_\_  
Injection \_\_\_\_\_ Other \_\_\_\_\_  
Type of Facility: Domestic  Public Water Supply \_\_\_\_\_  
Public Institution \_\_\_\_\_ Farm \_\_\_\_\_ Industry \_\_\_\_\_  
Commercial \_\_\_\_\_ Other \_\_\_\_\_
5. PUMP DATA: Type \_\_\_\_\_ Rated hp. \_\_\_\_\_  
Intake Depth \_\_\_\_\_ ft. Capacity \_\_\_\_\_ gpm at \_\_\_\_\_ head
6. WELLHEAD: Type of Well Seal Cement Lid \_\_\_\_\_  
Pressure Tank \_\_\_\_\_ gal. Location \_\_\_\_\_  
Sample Tap \_\_\_\_\_ Measurement Port \_\_\_\_\_  
Well Vent \_\_\_\_\_ Pressure Relief Valve \_\_\_\_\_  
Gate valve \_\_\_\_\_ Check Valve (when required) \_\_\_\_\_  
Electrical Disconnect Switch on Power Supply \_\_\_\_\_
7. DISINFECTION: Well Disinfected \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
Date \_\_\_\_\_ Disinfectant Used \_\_\_\_\_  
Amount \_\_\_\_\_ Hours Used \_\_\_\_\_
8. ABANDONMENT: (where applicable) \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
Casing Pulled \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ NA \_\_\_\_\_  
Plugging Grout From \_\_\_\_\_ to \_\_\_\_\_ Material \_\_\_\_\_

(David A. and Elaine Toth Trustees lot 44-1-2)

ID# 02-124-345

OWNER: \_\_\_\_\_

DEQ WELL # \_\_\_\_\_

9. State law requires submitting to the Virginia State Water Control board information about ground water and wells for every well made in the State intended for water, or any other non-exempt well. This information must be submitted whether the well is completed, on standby, or abandoned. Information required includes: an accurately and completely prepared water well completion report, full data from any aquifer pumping tests, drill cuttings taken at ten foot intervals (unless exemption is secured), the results of any chemical analysis, and copies of the geophysical logs. Quarterly pumpage and use reports are required from owners of public supply and industrial wells. County or State permits to drill may be required in some parts of the state. Some counties require submission of a water well completion report. The Virginia State health Department requires a water well completion report for public water supply.

10. Driller's Log (Use additional sheets if necessary)

10. Driller's Log (Use additional sheets if necessary)				11. Drilling Time (Min.)	12. Diagram of Well Construction (with dimensions)
Depth (feet)		Type of Rock or Soil	Remarks		
From	To	(Color, material, fossils, hardness, etc.)	(Water, caving, cavities, broken, core, shot, etc.)		

13. Well Lot Dedicated? \_\_\_\_\_ Size \_\_\_\_\_ ft. by \_\_\_\_\_ ft. Well House? \_\_\_\_\_  
Distance to nearest pollutant source \_\_\_\_\_ ft. Type \_\_\_\_\_  
Distance to nearest property line \_\_\_\_\_ ft. Building \_\_\_\_\_ ft.

14. WATER SERVICE PIPE: Checked under \_\_\_\_\_ p.s.i. for \_\_\_\_\_ minutes  
Pipe Size \_\_\_\_\_ in. Material \_\_\_\_\_  
Installer \_\_\_\_\_  
Date \_\_\_\_\_

15. I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

Signature Steve Wertz / (Signature)  
(Well driller or authorized person)

Date 03/14/2003

License Number 014253

# Commonwealth of Virginia Uniform Water Well Completion Report

Owner: Guy Haalboom Jr Carl Mullins  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Location: 60 E (C) 1045 1/4 mile (D) Private Dr.  
W end

Tax Map ID: 45  
 VDI Permit: 08-124-117  
 VWCD Permit: \_\_\_\_\_  
 VWCD ID: \_\_\_\_\_  
 County: Cumberland

### \* Well Data \*

**General Information**  
 Drilling Method: rotary  
 Depth to Bedrock: 94  
 Static Water Level: 35  
 Well Disinfected (Y or N): Y

Date Completed: 6-2-10  
 Yield: 8 (GMP)  
 Stabilized Water Level: \_\_\_\_\_  
 Disinfectant Used: CLOROX

Total Depth of Well: 205  
 Length of Test: \_\_\_\_\_  
 Natural Flow (Rate): \_\_\_\_\_  
 Amount Used: \_\_\_\_\_

**Casing**  
 From: 0 To: 94  
 Size: 1.75 Material: PVC  
 Weight/Schedule: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Size: \_\_\_\_\_ Material: \_\_\_\_\_  
 Weight/Schedule: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Size: \_\_\_\_\_ Material: \_\_\_\_\_  
 Weight/Schedule: \_\_\_\_\_

**Gravel Pack**  
 From: \_\_\_\_\_ To: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

**Grout**  
 From: 0 To: 20  
 Bore Hole Size: \_\_\_\_\_  
 Type: Cement  
 Method: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Bore Hole Size: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Method: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Bore Hole Size: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Method: \_\_\_\_\_

**Water Zones or Screened Intervals**  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam

### \* Use Data \*

Private Well: \_\_\_\_\_  
 Public Well: \_\_\_\_\_

Domestic: \_\_\_\_\_ Agricultural: \_\_\_\_\_ Industrial: \_\_\_\_\_ Monitoring: \_\_\_\_\_  
 Community: \_\_\_\_\_ Non-community: \_\_\_\_\_

### \* Abandonment Information \*

**Bored or Dug Wells**  
 Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill: \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 Method of permanently marking location: \_\_\_\_\_

**Wells other than Bored Wells**  
 Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_



\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
0 - 94	hard	8 spm
94 - 205		well complete

(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that it well complies with all applicable state and local regulations, ordinances and laws.

**FRED JONES WELL CO.**  
Name \_\_\_\_\_  
Address P. O. Box 818 Appomattox, Va. 24522  
Phone 352-7872  
Drillers Signature Fred H Jones SPK  
Date 6-3-10 Representing \_\_\_\_\_  
Virginia Contractors License Number 18064



Cumberland County Health Department
P O Box 107
15 Foster Road
Cumberland, VA 23040
(804) 492-4661 Voice
(804) 492-9463 Fax

Record of Inspection - Nonpublic Well Class IIIC

Property Owner

Guy Haalboom Jr.
219 Jennings Road
Cartersville, VA 23027
Phone: (434) 390-4201

Health Dept. ID: 08-124-117

Tax Map: 45-1-36A

Locality: Cumberland

Property Location

Property Address: Mosby Road
, Section 45-1 , Lot 36A

Directions: From CHD take 60 to Powhatan 1st main rd on L when in Powhatan, (1045 Mosby Rd)
1-2 tenths of a mile on L long gravel rd 4th house on R

Well Driller: Fred Jones

Nonpublic well class: Class IIIC

Date construction started: June 2, 2010

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

Well Location / Distances from sources of pollution:

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 50 feet; Subsurface Soil
Absorption System 100 feet (nearest point); Property Line 50 feet; Other: \_.

Construction, General: (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 205 feet; Type of casing PVC Plastic ; Depth of casing 94 feet; Diameter of
casing 6.25 inches. Casing extends 12 inches above ground. Annular space was sealed with neat
cement to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of \_ .
Well head and opening to the interior protected: Yes. Type of well seal: Well cap. Pitless adapter
used: Yes. If so, was it properly installed: Yes; and properly vented: Yes.

Quantity: Yield and drawdown determined by continuous pumping of hours.

Yield: 8 GPM ; Drawdown: feet ; Static Water Level: 35 feet ; Type of storage: Pressure.

Quality: Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples:
. Date of Sample: \_

Satisfactory Construction: Yes on August 30, 2010

Well Approved for Use: Yes on August 30, 2010

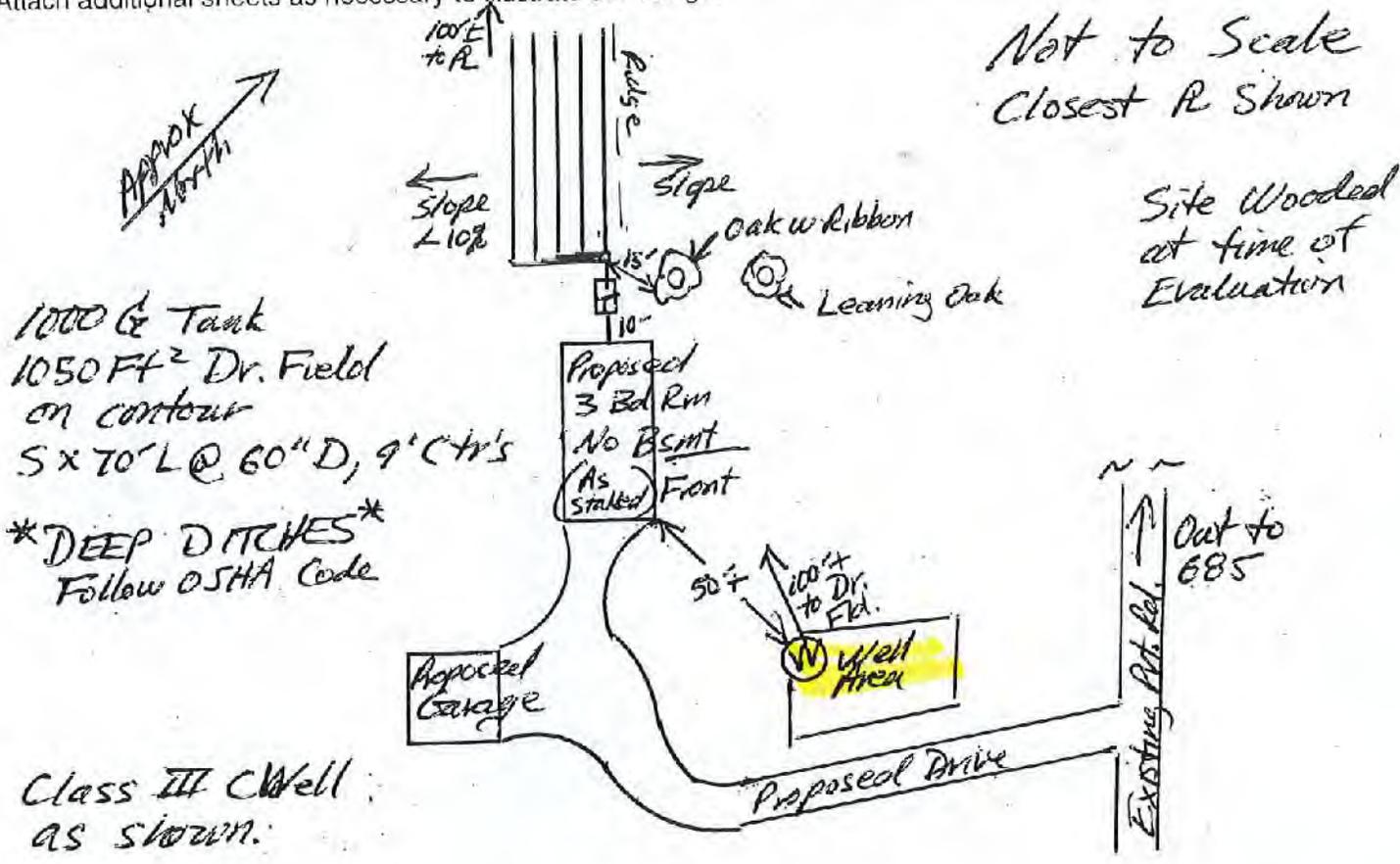
Signed August 30, 2010

Glen Moore, Environmental Health Specialist Sr

Schematic drawing of sewage disposal and/or water supply system and topographic features.

Show the lot lines of the building site, sketch of property showing any topographic features which may impact on the design of the well or sewage disposal system, including existing and/or proposed structures and sewage disposal systems and wells within 200 feet. The schematic drawing of the well site or area and/or sewage disposal system shall show sewer lines, pretreatment unit, pump station, conveyance system, and subsurface soil absorption system, reserve area, etc. When a nonpublic drinking water supply is to be permitted, show all sources of pollution within 200 feet.

The information required above has been drawn on the attached copy of the sketch submitted with the application. Attach additional sheets as necessary to illustrate the design.



Not to Scale  
Closest R Shown

Site Wooded  
at time of  
Evaluation

This sewage disposal system and/or water supply is to be constructed as specified by the permit A or attached plans and specifications.

This sewage disposal system and/or well construction permit is null and void if (a) conditions are changed from those shown on the application (b) conditions are changed from those shown on the construction permit.

No part of any installation shall be covered or used until inspected, corrections made if necessary, and approved, by the local health department or unless expressly authorized by the local health dept. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon the direction of the Department.

Date: 6/06/00 Issued by: [Signature] Sanitarian  
Date: \_\_\_\_\_ Reviewed by: \_\_\_\_\_ Supervisory Sanitarian

This Construction Permit Valid until 12/31/2001

If FHA or VA financing

Reviewed by Date \_\_\_\_\_ Date \_\_\_\_\_  
Supervisory Sanitarian Regional Sanitarian

1978-10,000

# COMMONWEALTH OF VIRGINIA WATER WELL COMPLETION REPORT

\*BWCM No. \_\_\_\_\_

State Water Control Board  
P.O. Box 11143  
2111 North Hamilton St.  
Richmond, VA 23230

*\*faxed to H.D. 8/22/01*

County/City: Cumberland, Va. / I.D. #00-124-067

County/City Stamp

Owner Hubbard Sprouse  
Well Designation or Number Rt. 685  
Address \_\_\_\_\_

Phone \_\_\_\_\_

Drilling Contractor Royall Pump & Well Co.  
Address 2958 Anderson Hwy  
Powhatan, VA 23139  
Phone 804-598-8147

WELL LOCATION: \_\_\_\_\_ (feet/miles \_\_\_\_\_ direction) of \_\_\_\_\_  
and \_\_\_\_\_ (feet/miles \_\_\_\_\_ direction) of \_\_\_\_\_  
(if possible please include map showing location marked)

Date Started 8/15/01 Date Completed 8/16/01 Type Rig Rotary Air

SWCB Permit: _____
County Permit: _____
Certification of inspecting official: This well does _____ does not _____ meet code/low requirement: S. _____ Date _____
<i>For Office Use</i>

Tax Map I.D. No. _____
Subdivision _____
Section _____
Block _____
Lot _____
Class Well: I _____, IIA _____
IIA _____, IIB _____, IIC _____, IID _____, IIE _____

*Virginia Plate Coordinates
_____ N
_____ E
Latitude & Longitude
_____ N
_____ W
*Topo. Map No. _____
*Elevation _____ ft.
*Formation _____
*Lithology _____
*River Basin _____
*Province _____
*Type Logs _____
*Cuttings _____
*Water Analysis _____
*Aquifer Test _____

1. WELL DATA: New  Reworked \_\_\_\_\_ Deepened \_\_\_\_\_  
Total depth 365 ft  
Depth to bedrock 52 ft.

Hole Size (Also include reamed zones)  
8 3/4 inches from 0 to 52 ft.  
6 1/8 inches from 52 to 365 ft.  
11 1/2 inches from 0 to 20 ft.

Casing size (I.D.) and material  
6 1/4 inches from +1 to 52 ft.  
Material PVC Well  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material \_\_\_\_\_  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material \_\_\_\_\_  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.

Screen size and mesh for each zone (where applicable)  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_

Gravel Pack  
From \_\_\_\_\_ to \_\_\_\_\_ ft.  
From \_\_\_\_\_ to \_\_\_\_\_ ft.

Grout  
From 0 to 20 ft. Type Cement - 1 bag benscal  
From \_\_\_\_\_ to \_\_\_\_\_ ft. Type \_\_\_\_\_ up top

2. WATER DATA \* Water temperature \_\_\_\_\_ F  
Static water level (unpumped level measured) \_\_\_\_\_ ft  
Stabilized measured pumping water level \_\_\_\_\_ ft.  
Stabilized yield \_\_\_\_\_ gpm after \_\_\_\_\_ hours  
Natural Flow: Yes  No \_\_\_\_\_, flow rate 4 gpm  
Comment on quality \_\_\_\_\_

3. WATER ZONES: From 45 To 65  
From 205 To 225, From \_\_\_\_\_ To \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_, From \_\_\_\_\_ To \_\_\_\_\_

4. USE DATA:  
Types of use: Drinking , Livestock Watering \_\_\_\_\_,  
Irrigation \_\_\_\_\_, Food processing , Household ,  
Manufacturing \_\_\_\_\_, Fire Safety \_\_\_\_\_, Cleaning ,  
Recreation \_\_\_\_\_, Aesthetic \_\_\_\_\_, Cooling or heating \_\_\_\_\_,  
Injection \_\_\_\_\_, Other \_\_\_\_\_  
Type of facility: Domestic , Public water supply \_\_\_\_\_,  
Public Institution \_\_\_\_\_, Farm \_\_\_\_\_, Industry \_\_\_\_\_,  
Commercial \_\_\_\_\_, Other \_\_\_\_\_

5. PUMP DATA: Type \_\_\_\_\_ Rated H.P. \_\_\_\_\_  
Intake depth \_\_\_\_\_ Capacity \_\_\_\_\_ at \_\_\_\_\_ head

6. WELL HEAD: Type well seal \_\_\_\_\_  
Pressure Tank \_\_\_\_\_ gal. Loc. \_\_\_\_\_  
Sample Tap \_\_\_\_\_ Measurement port \_\_\_\_\_  
Well vent \_\_\_\_\_, Pressure relief valve \_\_\_\_\_  
Gate Valve \_\_\_\_\_, Check valve (when required) \_\_\_\_\_  
Electrical disconnect switch on power supply \_\_\_\_\_

7. DISINFECTION: Well disinfected \_\_\_\_\_ yes  no \_\_\_\_\_  
Date \_\_\_\_\_, Disinfectant used \_\_\_\_\_  
Amount \_\_\_\_\_, Hours used \_\_\_\_\_

8. ABANDONMENT (where applicable) yes \_\_\_\_\_ no   
Casing pulled yes \_\_\_\_\_ no \_\_\_\_\_ not applicable \_\_\_\_\_  
Plugging grout From \_\_\_\_\_ to \_\_\_\_\_ material \_\_\_\_\_

Owner Hubbard Sprouse

BWCM No. 001240

9. State law requires submitting to the Virginia State Water Control Board information about groundwater and wells for every well made in the State intended for water, or any other non-exempt well. This information must be submitted whether the well is completed, on standby, or abandoned. Information required includes: an accurately and completely prepared water well completion report, full data from any aquifer pumping tests, drill cuttings taken at ten foot intervals (unless exemption is secured), the results of any chemical analyses, and copies of any geophysical logs. Quarterly pumping and use reports are required from owners of public supply and industrial wells. County or State permits to drill may be required in some parts of the state. Some counties require submission of a water well completion report. The Virginia State Health Department requires a water well completion report for public supply wells.

10. DRILLERS LOG (use additional sheets if necessary)

11.

12. DIAGRAM OF WELL CONSTRUCTION (with dimensions)

DEPTH (feet)		TYPE OF ROCK OR SOIL (color, material, fossils, hardness, etc.)	REMARKS (water, casing, cavities, broken, core, shot, (etc.))	Drilling Time (Min.)
From	To			
0	10	red clay	Fractures	
10	30	same to brownish/red dirt		
30	50	same to gray/white/brown rock	60' - 1 1/2" - 2017m	
50	65	same to dark gray/white rock	215' - 215' 460m	
65	85	same		
85	365	same rock to bottom		

13. Well lot dedicated? \_\_\_\_\_; Size \_\_\_\_\_ ft. X \_\_\_\_\_ ft.; Well house? \_\_\_\_\_  
Distance to nearest pollutant source \_\_\_\_\_ ft., Type \_\_\_\_\_  
Distance to nearest property line \_\_\_\_\_ ft., Building \_\_\_\_\_ ft.

14. WATER SERVICE PIPE: Checked under \_\_\_\_\_ p.s.i. for \_\_\_\_\_ minutes, Pipe size \_\_\_\_\_ inches, Material \_\_\_\_\_  
Installer \_\_\_\_\_  
Date \_\_\_\_\_

15. I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

Signature Brian Burtlett (Seal), Date 8-16-001  
(Well driller or authorized person) License No. 014253

State Water Control Board Regional Offices

Valley Reg. Off.  
116 North Main Street  
P. O. Box 268  
Bridgewater, Va. 22812  
703-828-2595

Piedmont Reg. Off.  
4010 West Broad Street  
P. O. Box 6616  
Richmond, Va. 23230  
804-257-1006

Southwest Reg. Off.  
408 East Main Street  
P. O. Box 476  
Abingdon, Va. 24210  
703-828-5183

Tidewater Reg. Off.  
287 Pembroke Office Park  
Suite 310 Pembroke No. 2  
Va. Beach, Va. 23462  
804-699-8742

West Central Reg. Off.  
Executive Park  
5312 Peters Creek Road  
Roanoke, Va. 24019  
703-982-7442

Northern Virginia Reg. Off.  
5515 Cherokee Avenue  
Suite 404  
Alexandria, Va. 22312  
703-750-9111

**Record of Inspection - Nonpublic Drinking Water Supply System**

**Property Owner**

Jack Gifford  
19 Churchwood Lane  
Cumberland, VA 23040  
Phone: (804) 492-5537

Health Dept. ID: **08-124-054**

Tax Map: **44-2-7A**

Locality: Cumberland

**Property Location**

Property Address: **49 Pinegrove Rd**

Directions: 60E-654 (Pine Grove Rd)N- 1/8th mi. on left in back of 49 Pinegrove Rd (long driveway)  
=====

**Well Driller:** Randy Hunt

**Nonpublic drinking water well class:** Class IIIC

**Date construction started:** June 20, 2008

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

**Well Location / Distances from sources of pollution:**

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 100 feet; Subsurface Soil  
Absorption System 100 feet (nearest point); Property Line 50 feet; Other:   .

**Construction, General:** (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 181 feet; Type of casing Sch 40 PVC WC ; Depth of casing 55 feet; Diameter of  
casing 6.25 inches. Casing extends 12 inches above ground. Annular space was sealed with     
benlonite to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of   .  
Well head and opening to the interior protected: Yes. Type of well seal: Well cap. Pitless adapter  
used: Yes. If so, was it properly installed: Yes; and properly vented: Yes.

**Quantity:** Yield and drawdown determined by continuous pumping of    hours.

Yield: 20 GPM ; Drawdown:   feet ; Static Water Level:   feet ; Type of storage: Pressure.

**Quality:** Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples:     
. Date of Sample:   

**Satisfactory Construction:** Yes on September 11, 2008

**Well Approved for Use:** Yes on September 11, 2008

Signed October 3, 2008

\_\_\_\_\_  
Glen Moore, Environmental Health Specialist SR

804  
492-9463

Commonwealth of Virginia  
Uniform Water Well Completion Report

Owner: Jack Gifford  
Address: 19 Churchwood Lane  
Cumberland, VA 23040  
Phone: (804) 492-5537  
Location: 49 Pinegrove Rd  
Tax Map ID \_\_\_\_\_  
VDH Permit 08-129-054  
WVCS Permit \_\_\_\_\_  
WVCS ID \_\_\_\_\_  
County Cumberland

\* Well Data \*

General Information  
Drilling Method Air Rotary  
Depth to Bedrock \_\_\_\_\_  
Static Water Level \_\_\_\_\_  
Well Disinfected (Y or N) Y

Date Completed 6-20-08  
Yield 2.0 (GMP)  
Stabilized Water Level \_\_\_\_\_  
Disinfectant Used Clorox

Total Depth of Well 181  
Length of Test \_\_\_\_\_  
Natural Flow (Rate) 2.0  
Amount Used \_\_\_\_\_

Casing  
From 0 To 55  
Size 6.25 Material PVC  
Weight/Schedule 40

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Size \_\_\_\_\_ Material \_\_\_\_\_  
Weight/Schedule \_\_\_\_\_

Gravel Pack  
From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

Grout  
From 0 To 20  
Bore Hole Size 2  
Type Bentonite  
Method Pour

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Bore Hole Size \_\_\_\_\_  
Type \_\_\_\_\_  
Method \_\_\_\_\_

Water Zones or Screened Intervals  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_  
Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

\* Use Data \*

Private Well: Domestic  Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
Public Well: Community \_\_\_\_\_ Non-community \_\_\_\_\_

\* Abandonment Information \*

Bored or Dug Wells  
Casing Removed, Y or N? \_\_\_\_\_  
If Y, Depth to which casing was removed: \_\_\_\_\_  
Depth and Type of Fill: \_\_\_\_\_  
Source of Fill: \_\_\_\_\_  
Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
Method of permanently marking location: \_\_\_\_\_

Wells other than Bored Wells  
Casing removed, Y or N? \_\_\_\_\_  
Depth to which casing was removed: \_\_\_\_\_  
Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
Source of gravel or sand: \_\_\_\_\_  
Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Faxed

JA-A-32

# Well Construction Permit -- Drawing

HD ID #: 11-124-043

### Owner Information

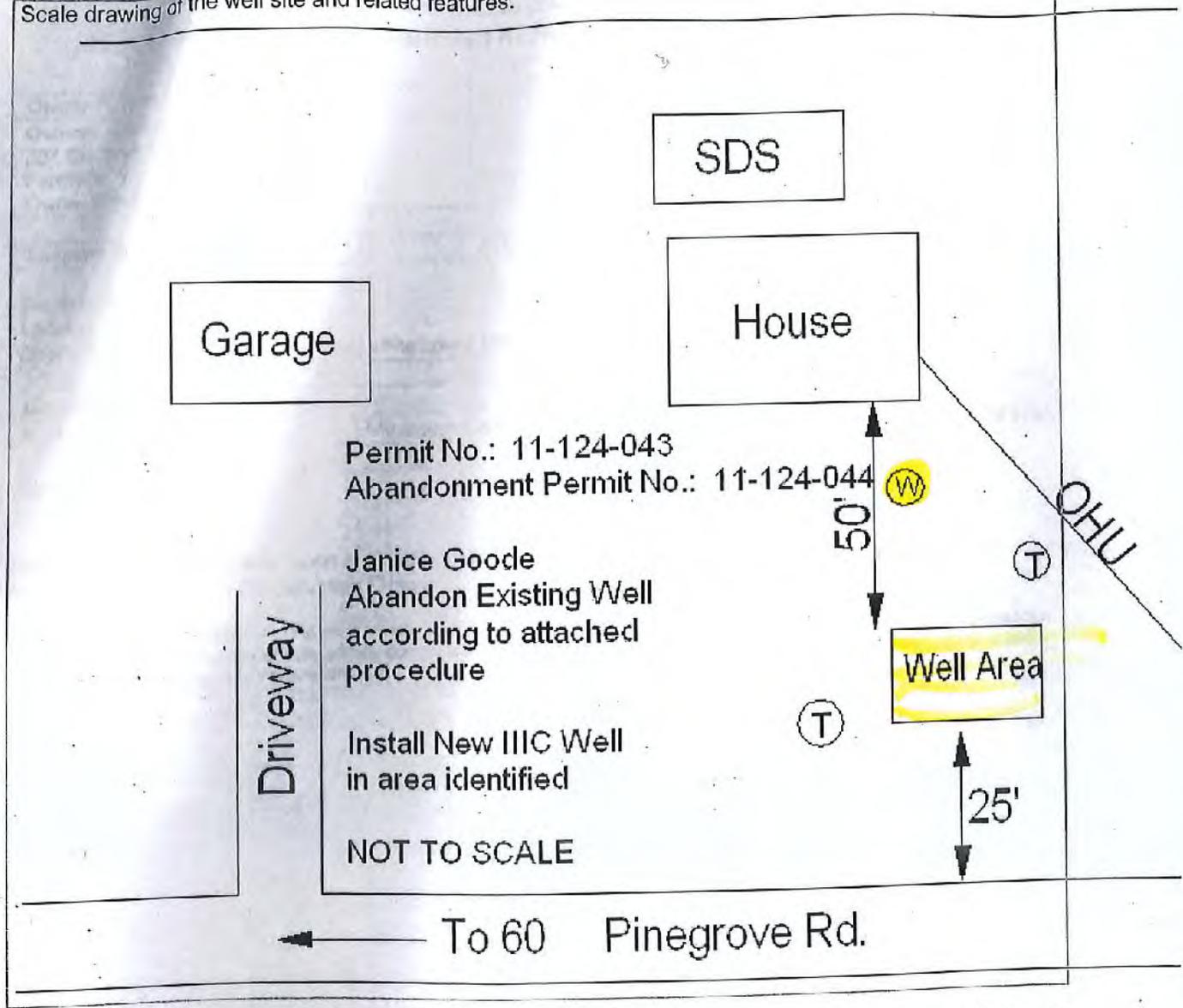
**Janice Goode**

327 Dry Bridge Rd  
Farmville, VA 23901

Phone: (434) 392-9071

### Construction Drawing

Scale drawing of the well site and related features.



Show the property lines, all existing and proposed structures, existing and proposed sewage systems and water supplies, slope, and any topographic features which may impact the design of the well.

Issued by: Glen Moore

June 3, 2011  
Issue Date

December 3, 2015  
Expiration Date

# COMMONWEALTH OF VIRGINIA UNIFORM WATER WELL COMPLETION REPORT

OWNER Jamie Hoode  
 ADDRESS 327 Dry Bridge Rd  
Farmville, VA 23901  
 PHONE 392-9071  
 LOCATION 60E - Lon Pinegrove Rd (254) white  
house with black trim on L

TAX MAP ID 44-A-32  
 VDH PERMIT 11-124-043  
 VWCB PERMIT \_\_\_\_\_  
 VWCB ID \_\_\_\_\_  
 COUNTY Cumberland

## "WELL DATA"

### GENERAL INFORMATION

DRILLED METHOD AIR ROTARY  
 DEPTH TO BEDROCK 81 ft  
 STATIC WATER LEVEL 30 ft  
 WELL DISINFECTED  OR N) YES

DATE COMPLETED 6-21-11  
 YIELD 15 GPM  
 STABILIZED WATER LEVEL 30 ft  
 DISINFECTANT USED WELL WATER  
SANITIZER PELLETS

TOTAL DEPTH OF WELL 225 ft  
 LENGTH OF TEST 30 MINUTES  
 NATURAL FLOW (RATE) 15 gpm  
 AMOUNT USED 2 CAPS FULL

### CASING

FROM 0 TO 83 ft  
 SIZE 6 1/4" MATERIAL PVC  
CERTAIN TEMP  
 WEIGHT/SCHEDULE SCH 1120

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 SIZE \_\_\_\_\_ MATERIAL \_\_\_\_\_  
 WEIGHT/SCHEDULE \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 SIZE \_\_\_\_\_ MATERIAL \_\_\_\_\_  
 WEIGHT/SCHEDULE \_\_\_\_\_

### GRAVEL PACK

FROM \_\_\_\_\_ TO \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_

### GROUT PER HEALTH DEPARTMENT SPECIFICATIONS

FROM 0 TO BEDROCK  
 BORE HOLE SIZE 9 3/4"  
 TYPE CEMENT BENSEAL  
 METHOD GRAVITY

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 BORE HOLE SIZE \_\_\_\_\_  
 TYPE \_\_\_\_\_  
 METHOD \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 BORE HOLE SIZE \_\_\_\_\_  
 TYPE \_\_\_\_\_  
 METHOD \_\_\_\_\_

### WATER ZONES OR SCREENED INTERVALS

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_  
 FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_  
 FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_

FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_  
 FROM \_\_\_\_\_ TO \_\_\_\_\_  
 MESH SIZE \_\_\_\_\_ DIAM. \_\_\_\_\_



## "USE DATA"

PRIVATE WELL: DOMESTIC  AGRICULTURAL \_\_\_\_\_ INDUSTRIAL \_\_\_\_\_ MONITORING \_\_\_\_\_  
 PUBLIC WELL: COMMUNITY \_\_\_\_\_ NON COMMUNITY \_\_\_\_\_

*faxed*

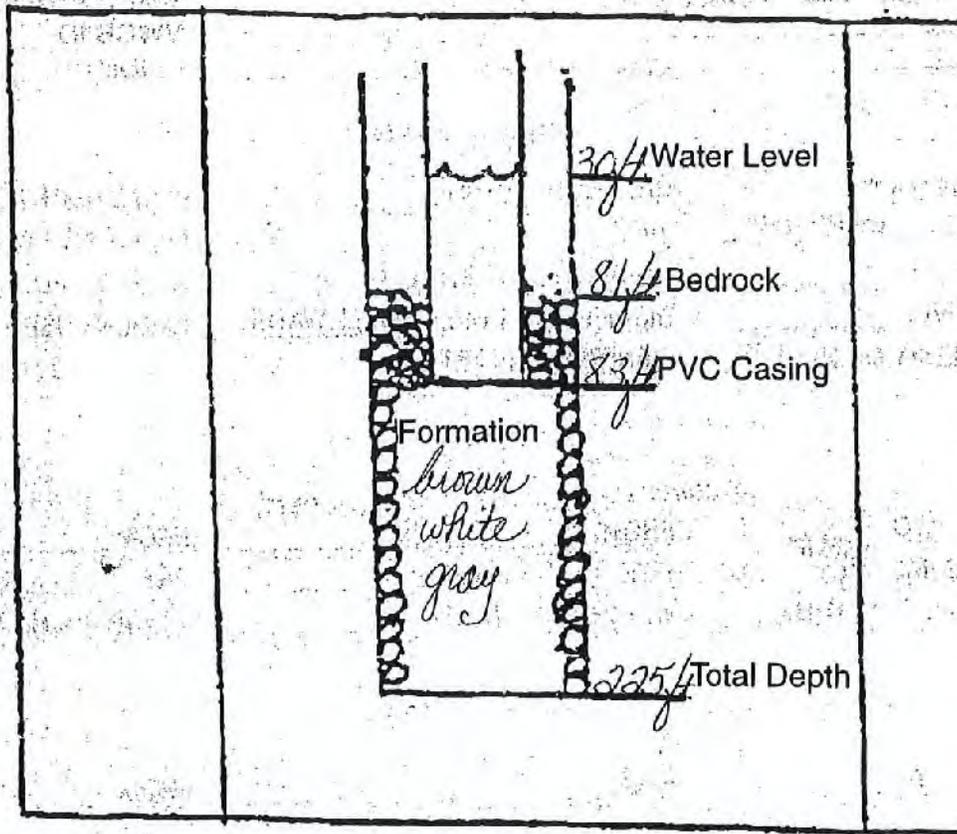
**DRILLERS LOG**

(Use additional sheets if necessary)

DEPTH

DESCRIPTION OF FORMATION OR SEDIMENT

IEM



I certify that this information enclosed here is true and that this well was installed and in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Drilling Contractor Longwood Well Drilling Company

Address 2790 West Third Street

Farmville, VA 23901

Phone (434) 392-6147

Drillant Signature Cornie A. Rowan Ted Payne Date 7-28-11

Representing Longwood Well Drilling Company

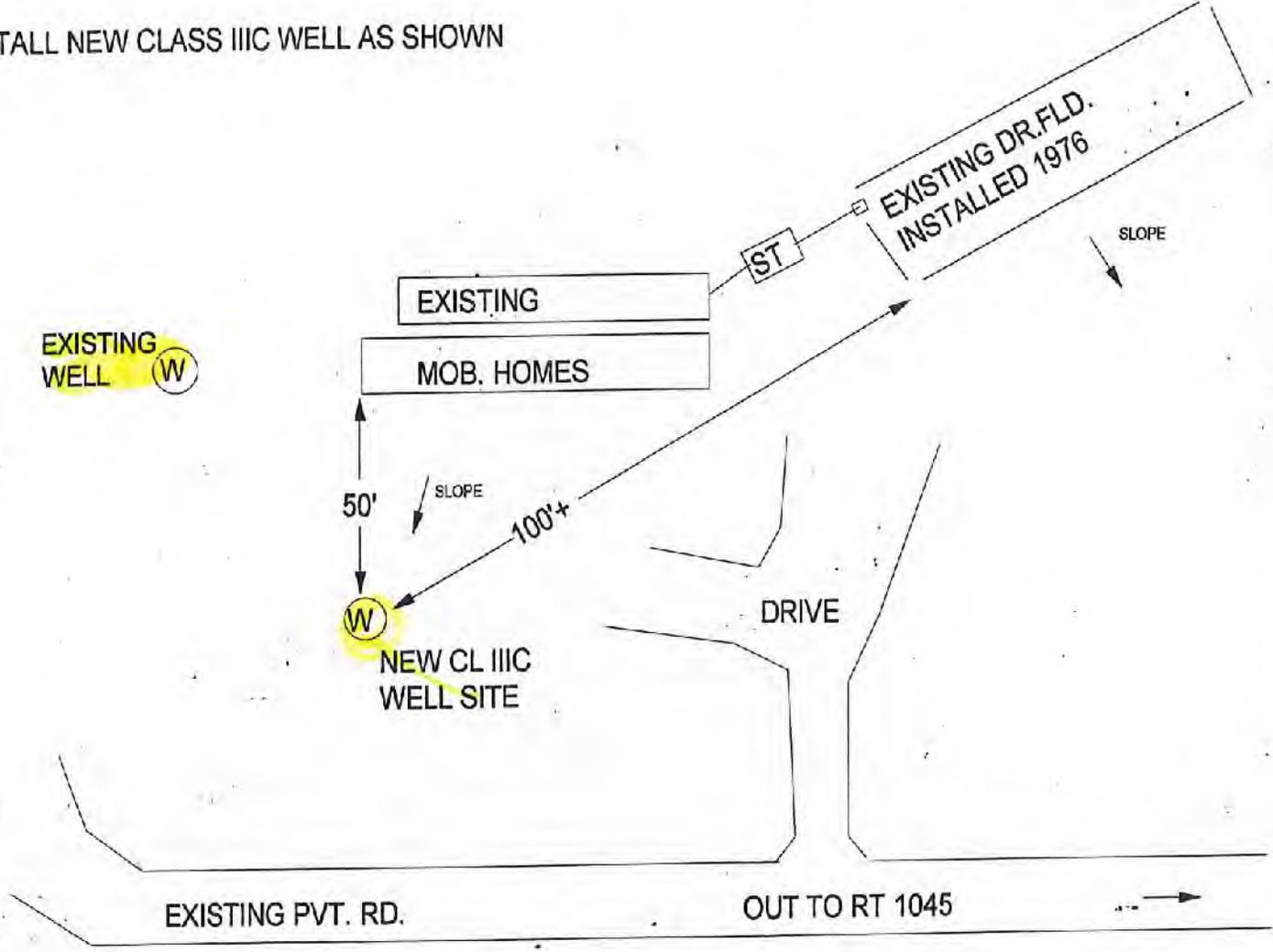
Virginia Contractor License Number 2705001134

...not lines of the building site. sketch of property showing any topographic features which may impact on the design or in...  
...or sewage disposal system, including existing and/or proposed structures and sewage disposal systems and wells within 200...  
...et. The schematic drawing of the well site or area and/or sewage disposal system shall show sewer lines, pretreatment unit,  
... pump station, conveyance system, and subsurface soil absorption system, reserve area, etc. When a nonpublic drinking water  
... supply is to be permitted, show all sources of pollution within 200 feet.

Morton, Jerry  
45-1-36

# ID# 99-124-066, MORTON WELL PERMIT, NOT TO SCALE

INSTALL NEW CLASS IIIIC WELL AS SHOWN



This sewage disposal system and/or water supply is to be constructed as specified by the permit X or attached plans and specifications \_\_\_\_\_.

This sewage disposal system and/or well construction permit is null and void if (a) conditions are changed from those shown on the application (b) conditions are changed from those shown on the construction permit.

No part of any installation shall be covered or used until inspected, corrections made if necessary, and approved, by the local health department or unless expressly authorized by the local health dept. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon the direction of the Department.

Date: 4/09/99 Issued by: Ed [Signature] Permit Valid until 10/30/2003

45-A-15A

Construction Drawing

HD ID #: 05-124-124

1647

Owner Information

Keith Grady  
17111 Second Branch Rd  
Chesterfield, VA 23838

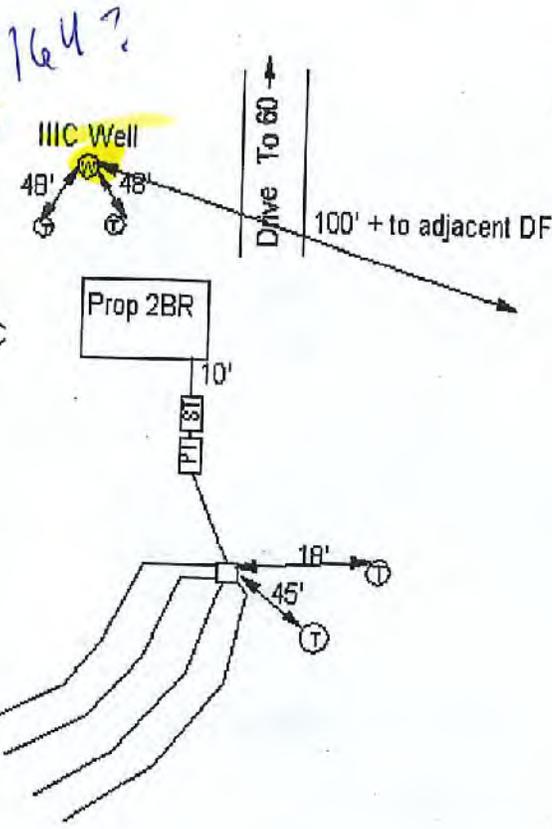
Phone: (804) 908-2065

*Jimmy Morris*

Construction Drawing

Schematic drawing of sewage disposal system and topographic features.

Permit No.: 05-124-124  
Keith Grady  
Install:  
1000 G Septic Tank  
1000 G Pump Tank



4 Lines  
70'L x 3'W x 66"D x 9'OC  
ON CONTOUR

111C Well

NOT TO SCALE

This sewage disposal system construction permit is null and void if conditions are changed from those shown on the application or construction permit. No part of any installation may be covered or used until inspected, corrections made if necessary and the system is approved. The inspection will normally be made by the system designer, who may be an AOSE, PE, or EHS. Any part of any installation which has been covered prior to approval shall be uncovered, if necessary, upon direction of the Department or the system designer.

System Design By: Glen Moore & Steve Hennessey; Site Evaluation By: Glen Moore & Steve Hennessey

*Glen Moore*  
Glen Moore

October 26, 2005  
Issue Date

April 26, 2007  
Expiration Date

State VA  
County/City, Cumberland Co.

Virginia Water Well Completion Report

*faxed to H.D. 12/21-06*

<b>Topographical Data</b>		<b>General Contractor</b>		<b>Permit Data</b>	
Datum		Name	Mr. Jimmy Morris	DEQ Permit	
Latitude	037°32'42.1" N	Address	1815 Brackets Bend	VOK WELL #	05-124-164
Longitude	078°06'35.2" W	City	Powhatan State VA	Building Permit	
Topo Map		Eip	23139- Phone (804) 598-2957	PWSID	
Elevation	399 ft	Well Designation or No.	Lot 15-A Anderson HWY	Well Address	
Formation		<b>Drilling Contractor</b>		Tax Map I.D.	4B-A 15A
Lithology		Name	Royall Pump & Well Company, Inc.	Subdivision	
River Basin		Address	2958 Anderson Highway	Section	45
Province	Piedmont	City	Powhatan	Block	A
Type Logs		State	VA Eip 23139-	Dot Number	15
Cuttings		Phone	(804) 598-8147 Fax (804) 598-1291	Well Owner	Jimmy Morris
Water Analysis		Email	info@royallpumpandwell.com	Well Address	Anderson Hwy. Rt. 50 East
Aquifer Test		License	014251	Well City	Cumharland
Well Notes				State	VA Eip 23040-
Treatment Req				Well Classes	Class IIIIC

Well Location / Drill Dates	Well Location (feet/miles) (direction) of	Well Location (feet/miles) (direction) of	Date Started 2/20/2006	Date Completed 12/20/2006	Type Rig Bored	If possible submit map with well location marked.
-----------------------------	---	---	------------------------	---------------------------	----------------	---

**WELL DATA**

New  Reworked  Deepened  Abandoned

Total Depth: 45 ft. Depth to Bedrock: unknown ft.

**WATER DATA**

Static Water Level: 17 PH: \_\_\_\_\_

Established Well Yield: 3 gpm Water Temp: F

Stabilized Pumping Level: \_\_\_\_\_

Stabilized Pumping Yield: \_\_\_\_\_ gpm after \_\_\_\_\_ hours

Comment on water quality: \_\_\_\_\_

**Casing Size (T.D.) and Material**

(1) 30 inches from 41 to 44 ft.  
Material: \_\_\_\_\_  
Weight per ft or wall thickness in.

(2) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material: \_\_\_\_\_  
Weight per ft or wall thickness in.

(3) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material: \_\_\_\_\_  
Weight per ft or wall thickness in.

**WATER ZONES**

(1) 1 gpm from 21 to 24 ft.

(2) 2 gpm from 30 to 32 ft (3) \_\_\_\_\_ gpm from \_\_\_\_\_ to \_\_\_\_\_ ft.

(4) \_\_\_\_\_ gpm from \_\_\_\_\_ to \_\_\_\_\_ ft (5) \_\_\_\_\_ gpm from \_\_\_\_\_ to \_\_\_\_\_ ft.

**Screen Size and Slot for Each Zone**

(1) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Slot Size: \_\_\_\_\_ Type: \_\_\_\_\_  
Material: \_\_\_\_\_

(2) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Slot Size: \_\_\_\_\_ Type: \_\_\_\_\_  
Material: \_\_\_\_\_

(3) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Slot Size: \_\_\_\_\_ Type: \_\_\_\_\_  
Material: \_\_\_\_\_

(4) \_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Slot Size: \_\_\_\_\_ Type: \_\_\_\_\_  
Material: \_\_\_\_\_

**USE DATA**

Type of Use:  Drinking  Livestock Watering  Irrigation  
 Food Processing  Household  Manufacturing  
 Fire Safety  Cleaning  Recreation  
 Aesthetic  Cooling/Heating  Injection

Other: \_\_\_\_\_

Type of Facility:  Domestic  Public Water Supply  Public Institution  
 Farm  Industry  Commercial  
 Other \_\_\_\_\_

**Gravel Pack**

size \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ ft.  
size \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ ft.

**Grout**

From 0 to 20 ft. Type: Concrete  
From \_\_\_\_\_ to \_\_\_\_\_ ft. Type: \_\_\_\_\_

**Lower Casing Seal**

K-Packer  Drive Shoe  Wall Pack  Shale Trap

\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.

**PUMP DATA**

Type: \_\_\_\_\_ inch Series \_\_\_\_\_ gpm  
 HP \_\_\_\_\_ Capacity \_\_\_\_\_ gpm at \_\_\_\_\_ ft. head  
 Intake Depth \_\_\_\_\_ ft Voltage \_\_\_\_\_  
 Riser Pipe Size \_\_\_\_\_ Type \_\_\_\_\_ Wire Size \_\_\_\_\_  
 Model Number \_\_\_\_\_

**WELLHEAD** Type of Well Seal/Cap: Cement Lid

Pressure Tank \_\_\_\_\_ Location: \_\_\_\_\_  
 Sample Tap: \_\_\_\_\_ Measurement Port: \_\_\_\_\_  
 Well Vent: \_\_\_\_\_ Pressure Relief Valve: \_\_\_\_\_  
 Gate Valve: \_\_\_\_\_ Check Valve (if required): \_\_\_\_\_  
 Electrical Disconnect Switch on Power supply: \_\_\_\_\_

**DISINFECTION** Disinfected \_\_\_\_\_ Date: \_\_\_\_\_  
 Disinfection Use \_\_\_\_\_ Amount: \_\_\_\_\_ Hour(s): \_\_\_\_\_

**ABANDONMENT**

Date \_\_\_\_\_ Casing Pulled  Yes  No  N/A

Well Disinfected \_\_\_\_\_ Type: \_\_\_\_\_ Amount: \_\_\_\_\_

(1) Grout/Backfill From \_\_\_\_\_ to \_\_\_\_\_ ft. Material: \_\_\_\_\_  
 (2) Grout/Backfill From \_\_\_\_\_ to \_\_\_\_\_ ft. Material: \_\_\_\_\_  
 (3) Grout/Backfill From \_\_\_\_\_ to \_\_\_\_\_ ft. Material: \_\_\_\_\_

Printed: Thursday, December 21, 2006 12:02 PM / 12:02

This Page Contains Confidential Business Information

Page 1 of 2

*KARIN*

Virginia Water Well Completion Report (continued)

Well Owner	Mr. Jimmy Morris	Permits:	DEQ Permit
	1515 Brackets Road		DOH Well # 05-124-114
	Position VA 23139-		Building Permit
	(804) 590-2957		FWSID
Well Address	Anderson Hwy. Rt. 60 East	Well Location: Latitude	037°32'41.1" N
	Cumberland VA 23040-	Longitude	078°06'31.2" W

Well Lot Dedicated		Type of Well Construction
Size: _____ ft by _____ ft	Well House _____	<input checked="" type="radio"/> Bored Well
Distance to nearest pollutant source _____ ft	Type _____	<input type="radio"/> Consolidated Well
Distance to nearest property line _____ ft	Waste Disposal Septic Tank _____	<input type="radio"/> Unconsolidated Well
Distance to Building _____ ft		<input type="radio"/> Multiple Screen Unconsolidated Well
Water Service Pipe		<input type="radio"/> Abandoned Bored Well
Checked under _____ p.s.i. for _____ minutes		<input type="radio"/> Abandoned Consolidated Well
Material _____	Pipe Size _____ in.	<input type="radio"/> Abandoned Unconsolidated Well
Installer _____	Installed Date _____	

Driller's Log

Depth (feet)		Type of Rock or Soil	Remarks
From:	To:		
0	1	Topsoil	
1	10	Red Clay	
10	25	Red & Brown Clay	
25	45	Brown Sandy Loms, White Quartz	

I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the state where the well was installed.

Signature: James Johnson Seal

James A Johnson Date: 12/20/2006 License Number 014253



Protecting You and Your Environment

Cumberland County Health Department  
P O Box 107  
15 Foster Road  
Cumberland, VA 23040  
(804) 492-4661 Voice  
(804) 492-9463 Fax

**Record of Inspection - Nonpublic Well Class IIIC**

**Property Owner**

Jimmy Morris  
1515 Brackets Bend  
Powhatan, VA 23139  
Phone: (804) 598-2957

Health Dept. ID: 05-124-164

Tax Map: 45-A-15A

Locality: Cumberland

**Property Location**

Property Address: Route 60 East  
, Section 45-A, Lot 15A

Directions: From CHD take 60 east 10 miles on the right at the Powhatan-Cumberland line

=====

**Well Driller:** Royall Pump & Well

**Nonpublic well class:** Class IIIC

**Date construction started:**

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

**Well Location / Distances from sources of pollution:**

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 50 feet; Subsurface Soil Absorption System 100 feet (nearest point); Property Line 50 feet; Other:   

**Construction, General:** (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 45 feet; Type of casing Concrete ; Depth of casing 44 feet; Diameter of casing 30 inches. Casing extends 12 inches above ground. Annular space was sealed with neat cement to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of   . Well head and opening to the interior protected: Yes. Type of well seal: Well cap. Pitless adapter used: Yes. If so, was it properly installed: Yes; and properly vented: Yes.

**Quantity:** Yield and drawdown determined by continuous pumping of hours.

Yield: 3 GPM ; Drawdown: feet ; Static Water Level: 17 feet ; Type of storage: Pressure.

**Quality:** Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples:   . Date of Sample:   

**Satisfactory Construction:** Yes on

**Well Approved for Use:** Yes on

Signed September 1, 2010

\_\_\_\_\_  
Glen Moore, Environmental Health Specialist Sr

45-A-12C

5/17

LOT 12E  
1" = 50'

190.42'

150'

KEN BROADWATER HOMES  
TAX MAP# 45-A-12C  
4.112 ACRES

279.43'

LOT 12F

... SURVEY WAS CONDUCTED  
... 200' OF THIS SEPTIC SYSTEM  
... THERE ARE NO WELLS OR WATER  
... SOURCES THAT WILL AFFECT THIS PERMIT

INSTALL:  
6 TRENCHES  
65' LONG  
3' WIDE  
9' CENTERS  
16" DEEP  
ON GRADE  
ON CONTOUR

INSTALL:  
TYPE III B WELL  
-CASED 50' MIN.  
-GROUTED 50' MIN.

NOTES:  
-INSTALL IN DRY CONDITIONS ONLY  
-DO NOT DISTURB DRAINFIELD AREA  
-ANY DISTURBANCE OR COMPACTION TO  
THE SOILS WITHIN THE DRAINFIELD  
AREA MAY VOID THIS PERMIT  
-HAND CLEARING ONLY  
-DRAINFIELD MARKED AND STAKED IN FIELD

NORWECO CONCRETE TOPSEAM TNT-500  
ATU PRE-TREAT UNIT IN SERIES TO:  
1000 GAL TOPSEAM CONCRETE PUMP TANK  
WITH RISERS TO GROUND SURFACE AND  
NORWECO CONTROL PANEL

APPROX 115'  
2" SCH 40 F.M.

PROPOSED  
3 BR HOUSE  
NO BSMT  
30'X45'

ALTERNATIVE RESERVE  
AREA 10' X 85'

6X65'X3'  
50'  
50'

TYPE III B  
WELL SITE

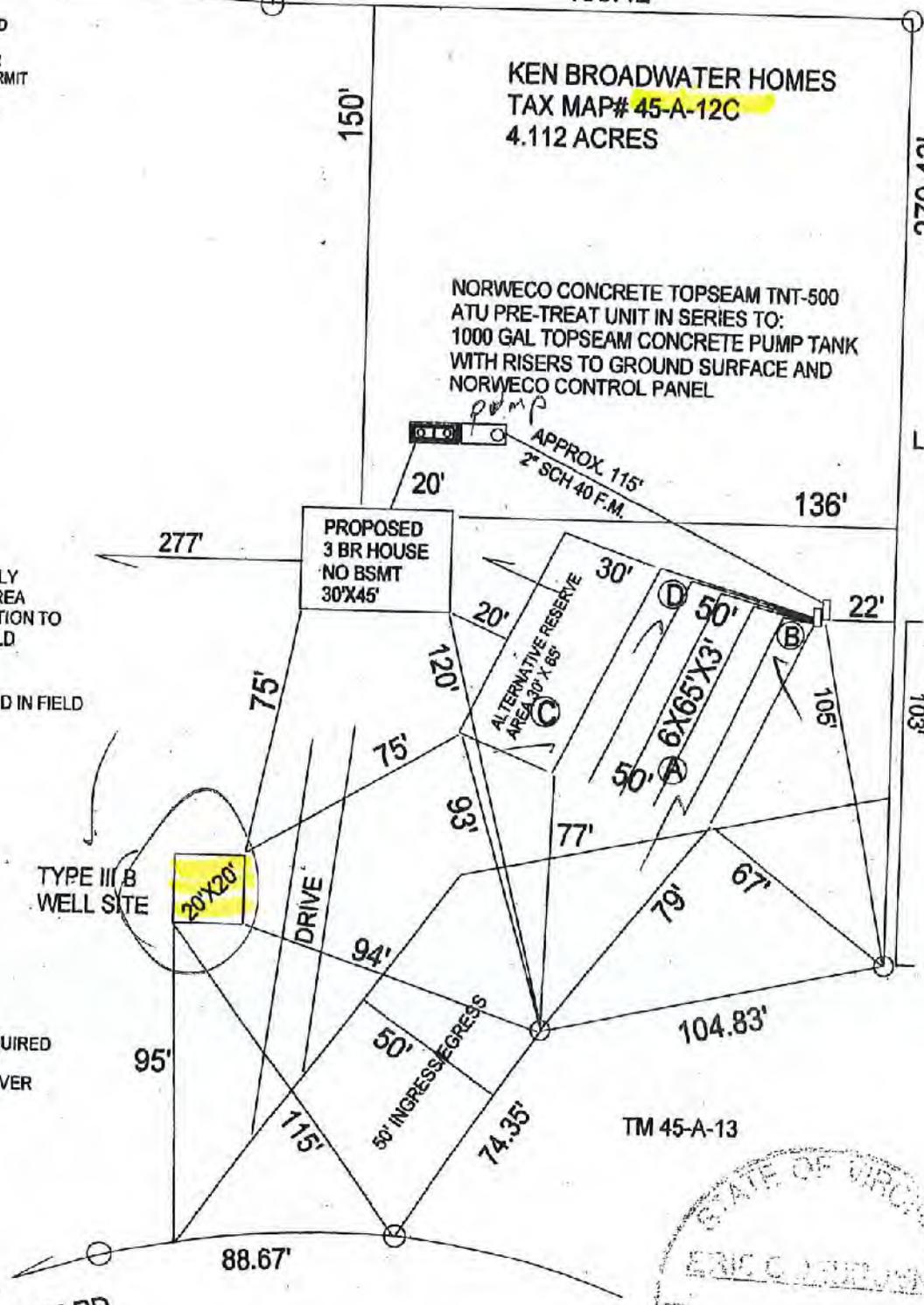
20'X20'

DRIVE

NOTES:  
-ADDITIONAL CLEAN FILL REQUIRED  
OVER INSTALLED TRENCHES  
-12" MIN. COVER REQUIRED OVER  
INSTALLED TRENCHES  
(SEE SUMMARY NOTES)

TM 45-A-13

BLENHEIM RD



### Commonwealth of Virginia Uniform Water Well Completion Report

Owner: Ken Broad Water Homes  
 Address: 99 Rhodes Lane  
Charlottesville, Va. 22902  
 Phone: \_\_\_\_\_  
 Location: Blenheim Rd

Tax Map ID 45-A-126  
 VDH Permit 12-124-71  
 WVCB Permit \_\_\_\_\_  
 WVCB ID \_\_\_\_\_  
 County Cumbersland

#### \* Well Data \*

##### General Information

Drilling Method Rotary  
 Depth to Bedrock 50'  
 Static Water Level 30'  
 Well Disinfected (Y or N) Y

Date Completed 1-27-18  
 Yield 50 (GMP)  
 Stabilized Water Level 50  
 Disinfectant Used Sanitizer pellets

Total Depth of Well 475'  
 Length of Test 20 min  
 Natural Flow (Rate) 50  
 Amount Used 2 caps full

Casing  
 From 0 To 64' ✓  
 Size 6 1/4" Material PVC  
 Weight/Schedule SCH 1120

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

Gravel Pack  
 From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

Grout  
 From 0 To 55' ✓  
 Bore Hole Size 10"  
 Type Cement Based  
 Method Pump

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

Water Zones or Screened Intervals  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

#### \* Use Data \*

Private Well: \_\_\_\_\_  
 Public Well: \_\_\_\_\_

Domestic ✓ Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
 Community \_\_\_\_\_ Non-community \_\_\_\_\_

#### \* Abandonment Information \*

##### Bored or Dug Wells

Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 Method of permanently marking location: \_\_\_\_\_

##### Wells other than Bored Wells

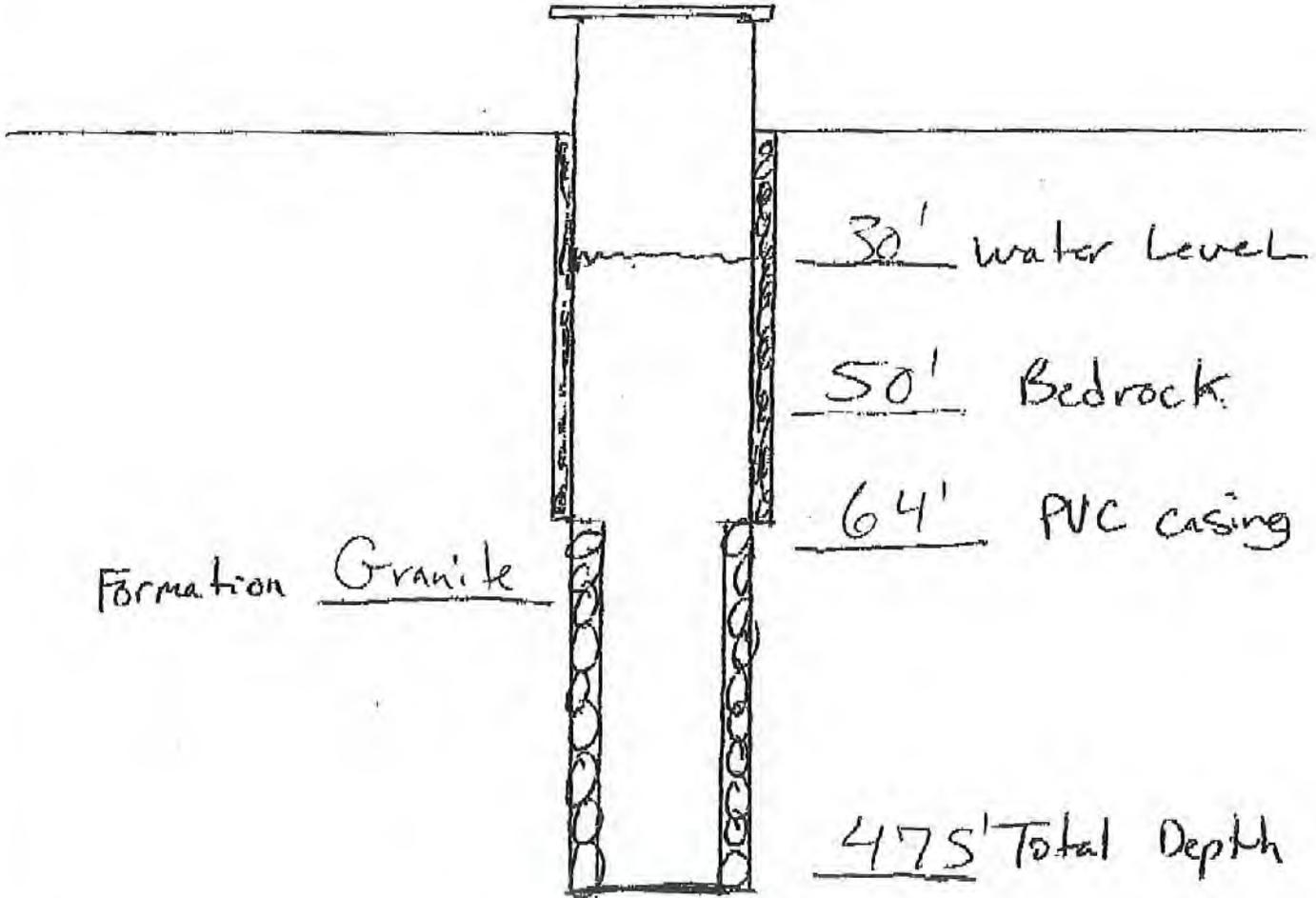
Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

" Drillers Log "

Depth

Description of Formation or Sediment

Remarks



(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name Dennis Daniel

Address 10610 West Bunker Hill Road

Rice, VA 23966

Phone 434-301-4939

Drillers Signature Fred C. Payne per Dennis Daniel

Date 4-19-14 Representing D & A Contractors

Virginia Contractors License Number 2705076114

### Commonwealth of Virginia Uniform Water Well Completion Report

Owner: LARRY GREEN  
 Address: 2365 MOSBY ROAD  
POWHATAN VA 23139  
 Phone: 492 4899  
 Location: PINEGROVE ROAD

Tax Map ID 37-2-2  
 VDH Permit 25-124-019  
 VVWB Permit \_\_\_\_\_  
 VVWB ID \_\_\_\_\_  
 County CHAMBERLAND

~~#379 Pinegrove RD~~ 391 Pinegrove RD

\* Well Data \*

General Information

Drilling Method ALA ROTARY  
 Depth to Bedrock 56  
 Static Water Level 40  
 Well Disinfected (Y or N) Y

Date Completed 4-25-05  
 Yield 10 (GMP)  
 Stabilized Water Level \_\_\_\_\_  
 Disinfectant Used CHLORINE  
TABLET

Total Depth of Well 140  
 Length of Test 30 MIN  
 Natural Flow (Rate) \_\_\_\_\_  
 Amount Used 5

Casing

From 0 To 57  
 Size 6 3/4 Material PVC  
 Weight/Schedule 40

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

Gravel Pack

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

Grout

From 0 To 20+  
 Bore Hole Size 10  
 Type BENTONITE  
 Method POUR

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

Water Zones or Screened Intervals

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

\* Use Data \*

Private Well:  Domestic  Agricultural  Industrial  Monitoring \_\_\_\_\_  
 Public Well:  Community  Non-community

\* Abandonment information \*

Bored or Dug Wells

Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill: \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Wells other than Bored Wells

Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Method of permanently marking location: \_\_\_\_\_



Cumberland County Health Department  
P O Box 107  
15 Foster Road  
Cumberland, VA 23040  
(804) 492-4661 Voice  
(804) 492-9463 Fax

## Record of Inspection - Nonpublic Drinking Water Supply System

**Property Owner**

Larry Green  
2365 Mosby Rd  
Powhatan, VA 23139  
Phone: (804) 492-4899

Health Dept. ID: **05-124-019**

Tax Map: **37-2-2**

Locality: Cumberland

**Property Location**

Property Address: 2365 Mosby Rd

Directions: 60 E 8 mi L on 654 Pinegrove Rd

**Well Driller:** Central Virginia Well Co.

**Nonpublic drinking water well class:** Class IIIC

**Date construction started:** April 25, 2005

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

**Well Location / Distances from sources of pollution:**

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 100 feet; Subsurface Soil Absorption System 100 feet (nearest point); Property Line feet; Other:    

**Construction, General:** (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 140 feet; Type of casing Sch 40 PVC WC ; Depth of casing 57 feet; Diameter of casing 6.25 inches. Casing extends 12 inches above ground. Annular space was sealed with bentonite to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of    . Well head and opening to the interior protected: Yes. Type of well seal: Well cap. Pitless adapter used: Yes. If so, was it properly installed: Yes; and properly vented: Yes.

**Quantity:** Yield and drawdown determined by continuous pumping of 5 hours.

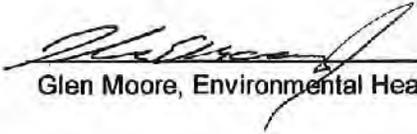
Yield: 10 GPM ; Drawdown: feet ; Static Water Level: 40 feet ; Type of storage: Pressure.

**Quality:** Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples:    . Date of Sample:    

**Satisfactory Construction:** Yes on July 27, 2005

**Well Approved for Use:** Yes on 7/27/2005

Signed September 6, 2005

  
Glen Moore, Environmental Health Specialist SR



# Commonwealth of Virginia Uniform Water Well Completion Report

Owner: Sivanand Pillai  
 Address: 11416 Abbots Cross Lane  
Green Allen Va 23059  
 Phone: \_\_\_\_\_  
 Location: \_\_\_\_\_

Tax Map ID: 45-A-11  
 VDH Permit \_\_\_\_\_  
 VWCB Permit \_\_\_\_\_  
 VWCB ID \_\_\_\_\_  
 County \_\_\_\_\_

\* Well Data \*

**General Information**

Drilling Method: Air Rotary  
 Depth to Bedrock: 25'  
 Static Water Level: 10'  
 Well Disinfected (Y or N): Y

Casing From: 0 To: 30  
 Size: 6 7/8 Material: PVC  
 Weight/Schedule: \_\_\_\_\_

Gravel Pack From: \_\_\_\_\_ To: \_\_\_\_\_

Grout From: 0 To: 20  
 Bore Hole Size: \_\_\_\_\_  
 Type: Permanent  
 Method: \_\_\_\_\_

Water Zones or Screened Intervals  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_

Date Completed: 7-27-12  
 Yield: 8 (GMP)  
 Stabilized Water Level: \_\_\_\_\_  
 Disinfectant Used: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Size: \_\_\_\_\_ Material: \_\_\_\_\_  
 Weight/Schedule: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Bore Hole Size: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Method: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_

Total Depth of Well: 155'  
 Length of Test: \_\_\_\_\_  
 Natural Flow (Rate): \_\_\_\_\_  
 Amount Used: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Size: \_\_\_\_\_ Material: \_\_\_\_\_  
 Weight/Schedule: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Bore Hole Size: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Method: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_  
 From: \_\_\_\_\_ To: \_\_\_\_\_  
 Mesh Size: \_\_\_\_\_ Diam: \_\_\_\_\_

\* Use Data \*

Private Well: \_\_\_\_\_  
 Public Well: \_\_\_\_\_  
 Domestic: \_\_\_\_\_ Agricultural: \_\_\_\_\_ Industrial: \_\_\_\_\_ Monitoring: \_\_\_\_\_  
 Community: \_\_\_\_\_ Non-community: \_\_\_\_\_

\* Abandonment Information \*

Bored or Dug Wells  
 Casing Removed, Y or N? \_\_\_\_\_  
 If Y; Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill: \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 Method of permanently marking location: \_\_\_\_\_

Wells other than Bored Wells  
 Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_



*Fused*

\* Drillers Log \*

Pillai

Remarks

Description of Formation or Sediment

Depth

0" - 25"

Soft

25" - 155"

hard



Feet??

(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name FRED JONES WELL CO.

Address P.O. Box 218 Appomattox, Va. 24522

Phone Phone 352-7872

Drillers Signature Fred H. Jones Representing

Date 8-7-12

Virginia Contractors License Number 18064

**Commonwealth of Virginia  
Uniform Water Well Completion Report**

Owner Pine Grove Community Center  
 Address c/o Robert R. Scates  
P.O. Box 65 Cumberland, Va 23040  
 Phone 492-4380  
 Location RT 45N RT 60E Left RT 654 (old)  
School House on left

Tax Map ID \_\_\_\_\_  
 VDH Permit \_\_\_\_\_  
 WVCB Permit \_\_\_\_\_  
 WVCB ID \_\_\_\_\_  
 County Cumberland

\* Well Data \*

**General Information**

Drilling Method Air Rotary (Drill) Date Completed 11-27-91  
 Depth to Bedrock 36ft Yield 2 1/2 (GPM)  
 Static Water Level 28 Stabilized Water Level 28  
 Well Disinfected (Y or N) yes Disinfectant Used \_\_\_\_\_

Total Depth of Well 145 ft  
 Length of Test 30  
 Natural Flow (Rate) 2 1/2 gpd  
 Amount Used \_\_\_\_\_

**Casing**

From 0 to 38 From \_\_\_\_\_ to \_\_\_\_\_  
 Size 6 1/4 Material Certain Lead Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule Sch 1120 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ to \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

**Gravel Pack**

From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

**Grout**

From 0 to 10 From 10 to 38  
 Bore Hole Size 9 3/4 Bore Hole Size 8 3/4  
 Type Cement & Water Type Cement & Water  
 Method Poured Method Poured

From \_\_\_\_\_ to \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

**Water Zones or Screened Intervals**

From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_  
 From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_ Mesh Size \_\_\_\_\_ Diam. \_\_\_\_\_

\* Use Data \*

Private Well: Domestic  Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
 Public Well: Community \_\_\_\_\_ Non Community \_\_\_\_\_

**Drillers Log \***  
(Use additional sheets if necessary)

Depth	Description of Formation or Sediment	Remarks
0 - 15	Clay	
15 - 36	Sandy + Clay Type Soil	
36 - 145	White + Grey Type Rock	



I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Drilling Contractor Longwood Well Drilling Co.  
 Address Rt 2 Box 365  
Farmville Va 28031  
 Phone 392-6147

Drillers Signature Longwood Well Drilling Date 2-20-92  
 Representing J. Lee Blaney  
 Virginia Contractors License Number 2705-001134

1978-10,000

# COMMONWEALTH OF VIRGINIA WATER WELL COMPLETION REPORT

State Water Control Board  
P.O. Box 11143  
2111 North Hamilton St.  
Richmond, VA 23230

\*BWCM No. \_\_\_\_\_

County/City: CUMBERLAND / I.D. # 01-124-012  
County/City Stamp

Owner R.C. Goodwyn Jr.  
Well Designation or Number Lot D-3  
Address H. 3855 W. Negrove Rd.  
Phone \_\_\_\_\_

Drilling Contractor Royall Pump & Well Co.  
Address 2958 Anderson Hwy  
Powhatan, VA 23139  
Phone 804-598-8147

WELL LOCATION: \_\_\_\_\_ (feet/miles \_\_\_\_\_ direction) of \_\_\_\_\_  
and \_\_\_\_\_ (feet/miles \_\_\_\_\_ direction) of \_\_\_\_\_  
(if possible please include map showing location marked)

Date Started 4/5/01 Date Completed 4/6/01 Type Rig Boring

- \*Virginia Plate Coordinates \_\_\_\_\_ N \_\_\_\_\_ E
- Latitude & Longitude \_\_\_\_\_ N \_\_\_\_\_ W
- \*Topo. Map No. \_\_\_\_\_
- \*Elevation \_\_\_\_\_ ft.
- \*Formation \_\_\_\_\_
- \*Lithology \_\_\_\_\_
- \*River Basin \_\_\_\_\_
- \*Province \_\_\_\_\_
- \*Type Logs \_\_\_\_\_
- \*Cuttings \_\_\_\_\_
- \*Water Analysis \_\_\_\_\_
- \*Aquifer Test \_\_\_\_\_

SWCB Permit: \_\_\_\_\_  
County Permit: \_\_\_\_\_

Certification of inspecting official:  
This well does \_\_\_\_\_ does not \_\_\_\_\_  
meet code/flow requirement:  
S. \_\_\_\_\_  
Date \_\_\_\_\_

*For Office Use*

Tax Map I.D. No. \_\_\_\_\_  
Subdivision \_\_\_\_\_  
Section \_\_\_\_\_  
Block \_\_\_\_\_  
Lot \_\_\_\_\_  
Class Well: I \_\_\_\_\_, II A \_\_\_\_\_, II B \_\_\_\_\_, III A \_\_\_\_\_, III B \_\_\_\_\_  
TIC X, IIID \_\_\_\_\_, III E \_\_\_\_\_

1. WELL DATA: New X Reworked \_\_\_\_\_ Deepened \_\_\_\_\_  
Total depth 36 ft.  
Depth to bedrock 36 ft.

Hole Size (Also include reamed zones)  
46 inches from 0 to 20 ft.  
36 inches from 20 to 36 ft.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.

Casing size (I.D.) and material  
30 inches from +1 to 36 ft.  
Material Concrete  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material \_\_\_\_\_  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Material \_\_\_\_\_  
Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.

Screen size and mesh for each zone (where applicable)  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ ft.  
Mesh Size \_\_\_\_\_ Type \_\_\_\_\_

Gravel Pack  
From \_\_\_\_\_ to \_\_\_\_\_ ft.  
From \_\_\_\_\_ to \_\_\_\_\_ ft.

Grout  
From 0 to 20 ft. Type Concrete  
From \_\_\_\_\_ to \_\_\_\_\_ ft. Type \_\_\_\_\_

2. WATER DATA \* Water temperature \_\_\_\_\_ F  
Static water level (unpumped level measured) \_\_\_\_\_ ft.  
Stabilized measured pumping water level \_\_\_\_\_ ft.  
Stabilized yield \_\_\_\_\_ gpm after \_\_\_\_\_ hours  
Natural Flow: Yes X No \_\_\_\_\_, flow rate 2 gpm  
Comment on quality \_\_\_\_\_

3. WATER ZONES: From 22 To 23  
From \_\_\_\_\_ To \_\_\_\_\_, From \_\_\_\_\_ To \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_, From \_\_\_\_\_ To \_\_\_\_\_

4. USE DATA:  
Types of use: Drinking X, Livestock Watering \_\_\_\_\_  
Irrigation \_\_\_\_\_, Food processing \_\_\_\_\_, Household X  
Manufacturing \_\_\_\_\_, Fire Safety \_\_\_\_\_, Cleaning X  
Recreation \_\_\_\_\_, Aesthetic \_\_\_\_\_, Cooling or heating \_\_\_\_\_  
Injection \_\_\_\_\_, Other \_\_\_\_\_  
Type of facility: Domestic X, Public water supply \_\_\_\_\_  
Public Institution \_\_\_\_\_, Farm \_\_\_\_\_, Industry \_\_\_\_\_  
Commercial \_\_\_\_\_, Other \_\_\_\_\_

5. PUMP DATA: Type \_\_\_\_\_ Rated H.P. \_\_\_\_\_  
Intake depth \_\_\_\_\_ Capacity \_\_\_\_\_ at \_\_\_\_\_ head

6. WELL HEAD: Type well seal \_\_\_\_\_  
Pressure Tank \_\_\_\_\_ gal. Loc. \_\_\_\_\_  
Sample Tap \_\_\_\_\_ Measurement port \_\_\_\_\_  
Well vent \_\_\_\_\_, Pressure relief valve \_\_\_\_\_  
Gate Valve \_\_\_\_\_, Check valve (when required) \_\_\_\_\_  
Electrical disconnect switch on power supply \_\_\_\_\_

7. DISINFECTION: Well disinfected \_\_\_\_\_ yes X no \_\_\_\_\_  
Date \_\_\_\_\_, Disinfectant used \_\_\_\_\_  
Amount \_\_\_\_\_, Hours used \_\_\_\_\_

8. ABANDONMENT (where applicable) yes \_\_\_\_\_ no \_\_\_\_\_  
Casing pulled yes \_\_\_\_\_ no \_\_\_\_\_ not applicable \_\_\_\_\_  
Plugging grout From \_\_\_\_\_ to \_\_\_\_\_ material \_\_\_\_\_



45-A-4

Well Construction Permit -- Drawing

HD ID #: 07-124-151

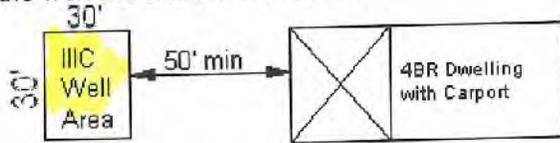
Owner Information

Timothy Cline  
16 Alder Lane  
Cumberland, VA 23040

Phone: (804) 492-4166

Construction Drawing

Scale drawing of the well site and related features.



Permit No.: 07-124-151

Timothy Cline

Install: III C Well

NOT TO SCALE

Show the property lines, all existing and proposed structures, existing and proposed sewage systems and water supplies, slope, and any topographic features which may impact the design of the well.

Issued by: Glen Moore

December 6, 2007  
Issue Date

June 6, 2012  
Expiration Date

# Commonwealth of Virginia Uniform Water Well Completion Report

*Should be  
BE 4?*

Owner: Timothy Cline  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Location: 605 L 654 R 605 R Alderhose 2nd  
Dr on R

Tax Map ID 45-A-14  
 VDHP Permit 07-124-151  
 VWCB Permit \_\_\_\_\_  
 VWCB ID \_\_\_\_\_  
 County Cumberland

### \* Well Data \*

#### General Information

Drilling Method rotary air  
 Depth to Bedrock 600  
 Static Water Level 40  
 Well Disinfected (Y or N) Y

Date Completed 5-28-08  
 Yield 2-3 (GMP)  
 Stabilized Water Level \_\_\_\_\_  
 Disinfectant Used Clorox

Total Depth of Well 305  
 Length of Test \_\_\_\_\_  
 Natural Flow (Rate) \_\_\_\_\_  
 Amount Used \_\_\_\_\_

#### Casing

From 0 To 60  
 Size 6 3/8 Material PVC  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Size \_\_\_\_\_ Material \_\_\_\_\_  
 Weight/Schedule \_\_\_\_\_

#### Gravel Pack

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_

#### GROUT

From 0 To 20  
 Bore Hole Size \_\_\_\_\_  
 Type Cement  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Bore Hole Size \_\_\_\_\_  
 Type \_\_\_\_\_  
 Method \_\_\_\_\_

#### Water Zones or Screened Intervals

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_  
 Mesh Size \_\_\_\_\_ Diam \_\_\_\_\_

### \* Use Data \*

Private Well: Domestic \_\_\_\_\_ Agricultural \_\_\_\_\_ Industrial \_\_\_\_\_ Monitoring \_\_\_\_\_  
 Public Well: Community \_\_\_\_\_ Non-community \_\_\_\_\_

### \* Abandonment Information \*

#### Bored or Dug Wells

Casing Removed, Y or N? \_\_\_\_\_  
 If Y, Depth to which casing was removed: \_\_\_\_\_  
 Depth and Type of Fill: \_\_\_\_\_  
 Source of Fill \_\_\_\_\_  
 Bentonite Plugs: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

#### Wells other than Bored Wells

Casing removed, Y or N? \_\_\_\_\_  
 Depth to which casing was removed: \_\_\_\_\_  
 Applicable, depth(s), and type of gravel/sand fill: \_\_\_\_\_  
 Source of gravel or sand: \_\_\_\_\_  
 Cement: From \_\_\_\_\_ to \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_

Method of permanently marking location: \_\_\_\_\_



*faxed*

\* Drillers Log \*

Depth	Description of Formation or Sediment	Remarks
0 - 60	hard	2-3 gpm
60 - 305		well complete

(Use Additional Sheets if necessary)

I certify that the information contained here is true and that this well was installed and constructed in accordance with the permit and further that the well complies with all applicable state and local regulations, ordinances and laws.

Name FRED JONES WELL CO.  
Address P. O. Box 818 Appomattox, Va. 24522  
Phone 352-7872

Drillers Signature Fred A Jones - JPN  
Date 5-29-02 Representing \_\_\_\_\_

Virginia Contractors License Number 18064



Cumberland County Health Department
P O Box 107
15 Foster Road
Cumberland, VA 23040
(804) 492-4661 Voice
(804) 492-9463 Fax

Record of Inspection - Nonpublic Well Class IIIC

Property Owner

Timothy Cline
16 Alder Lane
Cumberland, VA 23040
Phone: (804) 492-4166

Health Dept. ID: 07-124-151

Tax Map: 45-A-4

Locality: Cumberland

Property Location

Property Address: 16 Alder Lane

Directions: 60E-L on Pine Grove (654) R on Miller Ln- R on Alder Lane 2nd drive on Right

Well Driller: Fred Jones

Nonpublic well class: Class IIIC

Date construction started: May 28, 2008

Has water well completion report been filed as required by Sec. 12 VAC 5-630-440. Yes

Well Location / Distances from sources of pollution:

(See Table 3.1 and 12 VAC 5-630-380 of the Private Well Regulations)

Building Sewer 50 feet; Pretreatment Unit 50 feet; Conveyance System 50 feet; Subsurface Soil Absorption System 100 feet (nearest point); Property Line 50 feet; Other: \_.

Construction, General: (See 12 VAC 5-630-400 and 410 of the Private Well Regulations)

Total depth of well 305 feet; Type of casing PVC Plastic ; Depth of casing 60 feet; Diameter of casing 6.25 inches. Casing extends 12 inches above ground. Annular space was sealed with neat cement to a depth of 20 feet, and was Poured from Surface. Screens (if used) are constructed of \_.

Quantity: Yield and drawdown determined by continuous pumping of hours.

Yield: 2.5 GPM ; Drawdown: feet ; Static Water Level: 40 feet ; Type of storage: Pressure.

Quality: Sample tap provided at entry into system: Yes. Sample(s) collected: Yes. Result of samples: \_ . Date of Sample: \_

Satisfactory Construction: Yes on

Well Approved for Use: Yes on

Signed September 1, 2010

Glen Moore, Environmental Health Specialist Sr

## **I - Tourism**



[Home](#) > [State Parks](#) > [Bear Creek Lake State Park](#) > [General information](#)

# Bear Creek Lake State Park

22 Bear Creek Lake Rd., Cumberland, VA 23040; Phone: 804-492-4410; Email: [BearCreek@dcr.virginia.gov](mailto: BearCreek@dcr.virginia.gov)



## General Information

Nestled in the heart of the Cumberland State Forest in central Virginia, Bear Creek Lake is less than an hour west of Richmond. It's the perfect getaway for the outdoor enthusiast. Activities center on the 40-acre lake with a boat launch, fishing pier, boat rentals and a swimming beach. Other attractions include a meeting facility, cabins, camping, picnicking, an archery range and playgrounds. Guests also enjoy the park's trails and access to the adjoining 16,000-acre Cumberland State Forest, including the 14-mile Cumberland Multi-use Trail, which is available for hiking, biking and horseback riding.

*Note:* There is limited cell phone service in the park. Emergency phones are in the Acorn Campground Loop and outside the linen building in the cabin area. Wi-Fi is available year-round in the campground and at Lakeside Snack Bar from Memorial Day weekend through Labor Day. Wi-Fi is also available by the cabin area's linen building, which has ample parking next to it.

### Hours

8 a.m. to dusk.

### Location

The park is about 4.5 miles northwest of the town of Cumberland. From U.S. Route 60, go west on Route 622 and south on Route 629 to the park entrance.

*Note:* Those coming from the west and using GPS may be directed through a gravel-covered section of Oak Hill Rd. through the Cumberland State Forest. They should instead continue on Route 60 East through the Cumberland Courthouse area and then turn left on Trents Mill Rd. (Route 622) to reach the park's main entrance.

Drive Time: Northern Va., three hours; Richmond, one hour; Roanoke, two hours; Tidewater/Norfolk/Virginia Beach, three hours

### Park Size

329 acres; lake size, 40 acres.

### Share this page



## Cabins, camping

### OVERNIGHT FACILITIES

Camping and cabins. *For information on availability of overnight accommodations, particular park amenities or to make a reservation, you can [reserve online](#) or call 1-800-933-PARK.* Reservations are highly recommended.

During prime season, a day of guarded beach swimming per night's stay is free to overnight guests. (Parks will not refund rental fees should guarded swimming be unavailable.) [Read more about swimming in the park's Recreation section.](#)

[Click here](#) for details on reservation cancellation and transfer policies.

Visit a photo collection of [Bear Creek Lake's overnight accommodations.](#)

[Cabins](#) | [Lodges](#) | [Bunkhouse](#) | [Camping](#)

### Cabins

Between Memorial Day weekend and Labor Day, cabins and the lodge are rented by the week beginning on Friday, Saturday or Sunday. This requirement is reduced to a four-night stay three months out and dropped to two nights in the last month before arrival. A two-night minimum stay is required the rest of the year. Cabins and the lodge are open year-round and may be reserved up to 11 months in advance. Extra beds are unavailable for these dwellings.



Cabin at Bear Creek Lake.

*Directions for cabin and lodge guests to registration office:* Register at the park office near the campgrounds on Bear Creek Lake Road off Route 629. Late arrivals should call the park beforehand to obtain the dwelling's entry

code. Those arriving late will find information, including directions to their cabin, posted outside the park office door.

From Feb. 15 through April 30, a burn ban is in effect from midnight to 4 p.m. No open fires, including charcoal fires, are allowed until after 4 p.m. unless a camp host is on site.

During prime season, weekly rental for cabins 6 through 9 starts on Friday, cabins 1 through 5 on Saturday, and for 10 through 13 on Sunday.

- Check-in is 4 p.m., check-out is 10 a.m.
- Maximum two cars per cabin; additional parking is very limited and may not be available. Guests will find an overflow parking area by the linen building. A parking fee is charged for additional cars.
- Each cabin has at least one bathroom
- Kitchen: Refrigerator, stove, coffeemaker, dishes, dishcloth, dish towels, silverware, cooking utensils, pots, pans, microwave oven, toaster, manual can opener
- Linens provided include sheets, pillows, pillow cases, blankets, a comforter, towels, washcloths and dish towels. One set is provided per bed and they are not changed daily. More linens may be requested for a charge.
- Bring food, dish detergent, extra dish towels, coffee filters, coffee, salt and pepper, nonstick cooking spray, body wash/soap, extra bath towels, books, board games or cards. You may wish to bring an extra blanket or pillow.
- Keep pets on a leash no longer than 6 feet when they're not in an enclosed area. Pets are not allowed on the beach. Pets may not be left unattended at any time during your stay.
- A fee is charged per pet per night.
- No smoking in cabins.
- No dishwasher, phone, TV, washer or dryer
- Phones for emergency or calling card use only are at the linen building on Blue Heron Drive and at the Acorn Campground Loop.
- Wood-burning fireplace. The park provides one bundle of complimentary firewood; extra firewood is available for a nominal fee.
- Living area: sofa, dining table, chairs and end tables
- Bedrooms: Bed(s), nightstands, dresser, closet with hangers, clock radio
- Heat-pumps
- There are trash and recycling stations at the day-use area, Acorn Campground Loop and near the linen building on Blue Heron Drive. Separating recyclable materials is not necessary.
- Each cabin has a picnic table, fire-ring and a charcoal pedestal grill.
- Wrap-around deck; open porch with rocking chairs and end tables
- Late arrivals should call beforehand to obtain the cabin's entry code.
- Out of respect for cabin guests, large gatherings and camping are not allowed in the cabin area.
- State law permits alcohol use only in private areas (inside a cabin or camping unit) or in areas designated on permits issued by the Virginia Department of Alcoholic Beverage Control.
- Quiet hours are from 10 p.m. through 6 a.m. Only overnight guests are allowed in the park after 10 p.m. Visitors are charged daily parking and swimming fees; visitors must park in area designated by the park.
- Cabins 2, 4, 5, 11 and 12 are water-view.
- Cabin 5 has a queen bed, one set of bunk beds and a full-size pullout couch in the living area.
- Cabin 6 has 15 steps leading to the cabin.

## Lodges

- Week stay runs from Sunday to Sunday in prime season.
- Check-in is 4 p.m., check-out is 10 a.m.
- No bed rentals
- Maximum occupancy is 16.
- Maximum five cars; additional parking is very limited and may not be available. A parking fee is charged for additional cars. Overflow parking is nearby.
- Six bedrooms, one of which is universally accessible, and three bathrooms, one of which is universally accessible. One universally accessible bath is between master bedrooms; the other two baths are shared by the four remaining bedrooms.
- Two bedrooms have queen size beds.
- Two bedrooms each have two single beds.
- Two bedrooms have two sets of bunk beds (each room sleeps four).
- Universally accessible: Kitchen, dining area, living room, one bedroom and one bath. The other bedrooms and bathrooms are not universally accessible.
- No smoking
- Kitchen-dining-living area has an open floor plan.
- The kitchen is equipped with an electric range/oven, refrigerator, microwave, toaster, drip coffee maker, pots, pans, dishes and utensils.
- The living area includes a fireplace with gas logs. One bundle of wood is provided free of charge for use in the fire-ring. You can buy more wood at the park office. The dining room table seats eight, and there are six other seats at the counter.
- Heated and air-conditioned with heat pump
- Linens provided include sheets, pillows, pillow cases, blankets, a comforter, towels, washcloths and dish towels. One set is provided per bed and they are not changed daily. More linens may be requested for a charge.
- One porch on front; second porch on back of lodge
- Washer and dryer
- Limited view of water from the lodge

- Pets must be on a leash no longer than 6 feet when not in an enclosed area. They are not allowed on the beach. Pets may not be left unattended at any time.
- A fee is charged per pet per night.
- To respect other cabin guests, large gatherings and camping are not allowed in the cabin area.
- State law permits alcohol use only in private areas (inside a cabin or camping unit) or in areas designated on permits issued by the Virginia Department of Alcoholic Beverage Control.

*Total sites of each type:* two-bedroom frame, 6; two-bedroom frame waterview, 4; three-bedroom frame, 1; three-bedroom frame waterview, 1; Bear Creek Lodge, 1

#### *Site Types:*

Two-bedroom frame cabin, maximum capacity six, one queen bed, two sets of bunk beds (room sleeps four); no bed rentals; one bathroom.

Two-bedroom frame waterview cabin, maximum capacity six, one queen bed, two sets of bunk beds (room sleeps four); no bed rentals. Cabin 5, which is universally accessible, has a queen bed, one set of bunk beds and a full-size, pullout couch in the living area; one bathroom.

Three-bedroom frame cabin, maximum capacity eight, one queen bed, two single beds in second bedroom, two sets of bunk beds (room sleeps four) in third bedroom; no bed rentals; two bathrooms.

Three-bedroom frame waterview cabin, maximum capacity eight, one queen bed, two single beds in second bedroom, two sets of bunk beds (room sleeps four) in third bedroom; no bed rentals; two bathrooms.

Bear Creek Lodge (aka The Lakehouse) - six bedrooms, maximum capacity 16, three bathrooms, universally accessible, a queen size bed in each of two bedroom, two single beds in two bedrooms, two sets of bunk beds each in two bedrooms (each room sleeps four); no bed rentals.

#### **Bunkhouse**

No weekly requirement.

The park rents a bunkhouse that's next to the group campsite and near Chestnut Loop. The bunkhouse is not a full service lodge. It has two rooms and seven bunk beds, a refrigerator, a microwave oven, a coffee pot, and heating and air conditioning. The bunkhouse also has a charcoal grill and deck outside. Cooking and smoking are prohibited inside the bunkhouse. Five vehicles are permitted with rental of the bunkhouse; the daily parking fee must be paid for additional vehicles.

This facility becomes available in January each year; unlike most overnight facilities, it is not sold 11 months in advance. Check-in is 4 p.m., and checkout is 10 a.m. Late arrivals should call the park beforehand for directions and the entry code.

The transfer deadline and cancellation and pet fees are the same as those for cabins.

- No linens are provided. Guests must bring their own linens and pillows.
- Maximum occupancy is 14. Guests are responsible for any damage.
- The minimum stay is two nights.
- It has no bathroom, kitchen or fireplace.
- Bunkhouse guests use the bathroom in Chestnut Loop, which is about 75 yards away. The bathroom in Acorn Loop, which is about 200 yards away, is available during shoulder seasons.
- A fee is charged per pet per night.
- Cooking and smoking are not permitted inside.
- Electrical outlets are available but limited to 50-amp service.
- No extra bed rentals are available.
- State law permits alcohol use only in private areas (inside a cabin or camping unit) or in areas designated on permits issued by the Virginia Department of Alcoholic Beverage Control.
- The bunkhouse is next to the park's group campsite, which may be rented by calling the Customer Service Center, (800) 933-PARK (7275). Large groups should consider renting the bunkhouse and the group camping area.

#### **Camping**

Please note that the bunkhouse is *not* Bear Creek Lodge. The bunkhouse is next to the park's group campsite.

Bear Creek Lake allows campsite-specific reservations in the Acorn and Chestnut loops. [Here's a chart of those campsites](#) (PDF) and [a map of them](#) (PDF). Also, [here are photos of the sites](#).

From Feb. 15 through April 30, a burn ban is in effect from midnight to 4 p.m. Open air fires are prohibited during this time unless a camp host is in residence.

- Check-in is 4 p.m. Checkout is 1 p.m.
- Sites have metal fire-rings that may be used for campfires or as charcoal grills.
- Firewood and ice can be purchased at the park office.
- Two vehicles are allowed per site in addition to a camping unit. Some sites, however, can accommodate only one vehicle. Additional vehicles should be parked at the office parking area adjacent to the campground. The parking fee is charged for more than two vehicles

per site.

- Guests visiting campers must park in the parking area and leave by 10 p.m. Daily parking fees apply.
- A campground host is available at most times in site 14 next to the Acorn Loop Campground picnic shelter. The host may also help with firewood and ice sales after the office is closed.
- Acorn and Chestnut loops have campsite specific reservations. Campsites in the Black Oak loop may be reserved by site type only (setup is first come, first-served).
- In Acorn Loop, the only campground by the lake, there are 11 water view tent sites (10' x 10' tent pads) with no electric and water hookups. There are also five sites there that offer no view of the water but that have electric and water hookups to accommodate popups and equipment up to 20 feet long.
- Black Oak Loop has 11 sites with water and electric hookups to accommodate pop-ups and equipment up to 20 feet long, and nine sites with such hookups to accommodate equipment up to 35 feet long. (*Note:* The 35-foot length includes the combined length of the camper and tow vehicle. Those attempting to place equipment with a combined length exceeding 35 feet risk damaging their equipment.)
- Reserve large RV sites through the Customer Service Center - 800-933-7275 or online.
- Chestnut Loop has 11 electric and water sites. The campground can accommodate tents and small pop-up units.
- Most sites are shaded.
- Please keep pets on a leash no longer than six feet. Pets are not allowed on the beach. Pets must be attended at any time.
- Quiet hours are 10 p.m. to 6 a.m.
- State law permits alcohol use only in private areas (inside a cabin or camping unit) or in areas designated on permits issued by the Virginia Department of Alcoholic Beverage Control.
- Campers arriving late will find at the park office door an envelope including instructions on how and when to register the following morning. Maps are provided designating the campsite location.

Number of each site type: EW, 28; RV35, 9; Waterview TENT, 11; BC Group Site, 1

EW – Electric-water sites; gravel parking area; can hold various equipment up to 20 feet; accepts outlets 20 and 30-amp current.

RV35 – Electric-water sites; gravel parking area; holds equipment up to 35 feet long; accepts 20 and 30-amp current; all in Black Oak Loop.

Waterview TENT - Tents only. No hookups. Gravel parking area; tent pads and natural surface for setting up tent.

Total: 48 sites

### Group Campsite

The park rents a group campsite that has no hookups and is for tents only. It's near Chestnut Loop and next to the bunkhouse. The site accommodates up to 36 and is near a restroom. It has six picnic tables, a large pedestal grill and a stone fire pit surrounded by three benches. All equipment must be set up on gravel-covered areas. The campsite is available April 1 through Oct. 31. Group campsite guests use restrooms in nearby Chestnut Loop and Acorn Loop (about 200 yards away). There is a nonrefundable transaction fee plus a cancellation fee when reservations for this site are cancelled. The fee to cancel any group site that accommodates more than six people is greater than that for single campsites.

- Dogs are allowed but must be kept on a leash no longer than six feet. Dogs must be attended at all times and are not allowed on the beach.
- Sites are primitive; no water or electricity.
- One vehicle is allowed per campsite. No more than eight vehicles are allowed in the group campsite area. Additional vehicles may be parked at the park office, and a daily parking fee is charged.
- Check-in is at 4 p.m. and checkout is at 1 p.m.
- State law permits alcohol use only in private areas (inside a cabin or camping unit) or in areas designated on permits issued by the Virginia Department of Alcoholic Beverage Control.
- A burn ban is in effect from midnight to 4 p.m. Feb. 15 to April 30.

## Recreation

### TRAILS

All trails within the park allow only hiking. The park also provides access to the Willis River Trail, a 16-mile long trail winding through Cumberland State Forest. Also, the 15.7-mile Cumberland Multi-use Trail is available for bicycles, horses and hikers (this trail does not loop back to the park and is located in the state forest). Those interested in riding horses or mountain bikes in the Cumberland State Forest must obtain a State Forest Use Permit; call (804) 492-4121 or [visit the state forest department's website](#) for details

### SWIMMING

Between the Saturday of Memorial Day weekend and Labor Day, guarded beach swimming is available for a fee. Weather and other issues may at times force suspension of guarded swimming. When guarded swimming is unavailable, guests may swim at the beach's designated area but do so at their own risk. Swimming elsewhere in the park is prohibited.

The swimming beach has restrooms and Lakeside Snack Bar, which offers sandwiches, snacks and drinks. There's seating on a deck there. [Click here for park fees.](#)

## FISHING, BOATING

A 40-acre lake supports largemouth bass, crappie, bream and channel catfish. The Willis River, a small, slow tributary of the James, winds through the Cumberland State Forest. Those with a canoe or small boat can enjoy fishing there. Two canoe launches with access to the river are in Cumberland State Forest. A boat ramp at Bear Creek Lake is available for non-gasoline powered boats. The park also has a universally accessible fishing pier.

Boat rentals are available from Memorial Day to Labor Day. Shoulder season rentals are offered on weekends only from mid-April through Columbus Day Weekend. Parental supervision is required for all rentals. Rentals are sometimes cancelled during the shoulder season because of bad weather or staff shortages.

Canoes, rowboats, trolling motors, paddleboats, paddleboards and kayaks are for rent. Call the park for prices. A valid Virginia fishing license is required for fishing. Those 16 and older must have a license with them. A hardware store in the Cumberland Courthouse area sells licenses, and they are available via the [Virginia Department of Game and Inland Fisheries website](#). The park has Wi-Fi.

Those interested in fishing in the Cumberland State Forest lakes, including Arrowhead, Bonbrook, Oak Hill and Winston lakes, must obtain a State Forest Use Permit (in addition to a regular freshwater fishing license). Call 804-492-4121 or [visit the state forestry department's website](#) for details.

## HORSES

None within the park. There is a trailhead to the 15.7-mile Cumberland Multi-use Trail, which is popular for horseback riding. It's a day-use only trail. Those interested in riding horses there should call 804-492-4121 or [visit the state forest department's website](#) for details. Riders are required to carry a copy of a negative Coggins report for each horse brought to the park.

## HUNTING

Hunting is allowed in nearby [Cumberland State Forest](#). Call the state forest at (804) 492-4121 for specific dates.

## ARCHERY

The park has a 10-lane archery range with excelsior bales and 3D targets. The range, which is managed by the park and Friends of Bear Creek Lake State Park, is open from the first weekend in March through the first weekend in December. No archery equipment is available for rent. Call 804-492-4410 for details.

# Park Trail Guide

[Click here](#) (PDF) for the park's trail guide.

# Nearby Attractions

- [State Forest and Game Commission Lands and Impoundments](#)
- [Monticello](#)
- [Ashlawn](#)
- [Appomattox Court House](#)
- [High Bridge Trail State Park](#)
- [Holliday Lake State Park](#)
- [James River State Park](#)
- [Powhatan State Park](#)
- [Sailor's Creek Battlefield State Park](#)
- [Twin Lakes State Park](#)
- [Old Town Farmville](#)
- [Longwood College Visual Arts Center](#)
- [Robert R. Moton School Museum](#)

# Picnic Shelters

The park offers lakeside picnicking near the swimming beach. Picnic facilities include drinking water, grills and restrooms. Picnic shelters are available by reservation by calling the Customer Service Center at 1-800-933-PARK. [Click here for park fees](#). Shelters can be rented from 8 a.m. to dusk (all day). The shelter is rented April 1 through Oct. 31; boat rentals and swimming are available Memorial Day through Labor Day. Shelter parking is very limited so carpooling is recommended.

*Cancellation policy:* No refund within 14 days before reserved date. Before then, there's a cancellation fee.

- The park rents a 20' x 40' (small) shelter. It can accommodate up to 40 people and is 250 feet from the swimming beach, fishing pier and boat rental house. Lakeside Snack Bar and bathhouses are about 350 feet away. The shelter features pedestal grills and tables but no electricity. There is a drinking fountain nearby. Generators and amplified music are not allowed. Two commercial "play centers" with swings and a volleyball net are also within walking distance, as are trailheads for a hiking and a 15.7-mile multi-use trail. *Parking and swimming fees are not included in the shelter rental fee.*

- A burn ban is in effect Feb. 15 to April 30. No open fires, including charcoal in the grill, are allowed until after 4 p.m.

## Meeting Space and Facilities

### MEETING, CONFERENCE, WEDDING FACILITIES

#### Bear Creek Meeting Hall

Reserve by calling 1-800-933-7275. **It's a great place for weddings.** This is a day-use facility.

- Please see the table below for prices.
- **Wedding/event** package: Two consecutive days' rental (discount)
- Maximum 65 people, 25 cars
- Kitchen: Electric range, refrigerator and freezer, microwave and dishwasher; minimal cookware, utensils, serving containers, flatware or dishware
- Customers who wish to serve alcoholic beverages must first obtain a banquet license from the local ABC office. Call 804-213-4400 for details. This is the customer's responsibility, and the process may take up to a month. A copy of the ABC license must be given to park staff prior to the event. All consumption of alcoholic beverages during such events must take place within the meeting room and on the back patio. Those drinking elsewhere in public areas of the park may be charged with Drinking in Public.
- Caterers must provide a certificate of insurance and a valid health-department permit. Park staff can provide a list of caterers. Caterers are charged a commercial user's parking fee. It is recommended that the group contact the park to pay this fee.
- A rental *Terms of Agreement* form must be read and signed before the date of the event.
- Decorations are permitted but may not be attached to painted surfaces and may not damage the facility in any way. Renters are responsible for damages or any excess cleaning of the facility required after the event.
- Those renting the hall are exempt from parking fees (up to 25 vehicles) so long as they identify themselves as such at the contact station.
- No linens are provided.
- No smoking in the building.
- No pets are allowed in this facility.
- Internet access available; ask park staff for details
- Equipment available: TV with DVD, smart board and a flip chart. Equipment requests must be made ahead of time.
- A podium without amplification is available at no charge.
- There is a large group grill available next to the patio.
- A burn ban is in effect Feb. 15 to April 30. No open fires, including charcoal in the grill, are allowed until after 4 p.m.
- Memorial Day weekend through Oct. 31, the rental fee includes a 20 by 40-foot tent that covers the back patio. Outside of that timeframe, the tent can be rented.

Tables and chairs are available at no additional charge. Guests should call the park at least two weeks ahead of time to arrange their event's setup. Many sizes and configurations are available. The facility seats about 40 for sit-down meal and about 65 without tables. In warm weather, up to twelve 48-inch tables with four chairs each can be set up on the facility's stone patio.

#### *Cancellation fees*

Reservations must be paid in full within 14 days of the date the reservation is made. Cancellations can be made up until 14 days prior to the start of the reservation for a 10 percent cancellation fee or \$100, whichever is less. Within 14 days prior to the first day of the reservation period, a 30 percent cancellation fee is charged.

#### *Prices*

- From Nov. 1 to Memorial Day weekend, full day (8 a.m. - 10 p.m.) - \$236
- Memorial Day weekend through Oct. 31, full day (8 a.m. - 10 p.m.) - \$350
- From Nov. 1 to Memorial Day weekend, wedding/event package (two-day rental from 8 a.m. to 10 p.m. daily) - \$315
- Memorial Day weekend through Oct. 31, wedding/event package (two-day rental from 8 a.m. to 10 p.m. daily) - \$400
- Equipment; TV with VCR-DVD; laptop with smartboard; \$10 each per day
- Equipment at no charge: podium with no amplification and a small easel
- From Memorial Day weekend through Oct. 31, hall rental includes 20 by 40-foot tent that covers the patio. At other times, there is a charge for the tent.

The park also rents family lodges that may be used for small retreats and get-togethers.

### VISITOR CENTER, GIFT SHOP

Merchandise can be purchased at the office, concession stand and boat house.

### RESTAURANT

None but the park's Lakeside Snack Bar is open from Memorial Day through Labor Day. A small market just outside the park entrance carries a limited supply of grocery items and some camping supplies. The Town of Cumberland located on Route 60 approximately seven miles from the park has a post office, convenience stores and three small restaurants.

### LAUNDRY

Closest public laundry is 7 miles away in Cumberland Court House.

## Other Info

### ACCESSIBILITY

- Cabins 5, 9 and 13
- Restrooms at Acorn and Chestnut Campground loops
- Park office
- Concessions area, snack bar
- Restroom - beach restrooms
- Showers in Acorn and Chestnut loops
- Fishing pier
- Although motorized vehicles are not permitted on park trails, power-driven mobility devices for those with disabilities are permitted. Check with park staff to see if a given mobility device is suitable for a particular trail.

### CONCESSIONS

The swimming area and boat rentals are available from 10 a.m. - 6 p.m. Monday - Friday and 10 a.m. - 7 p.m. on weekends and holidays from Memorial Day weekend through Labor Day. Lakeside Snack Bar is open during prime season from noon to 5 p.m. Monday through Thursday, from noon to 6 p.m. on Friday, and from 11 a.m. to 6 p.m. on weekends and holidays. Please call the park about availability in early June and late August.

### NATURE, HISTORY PROGRAMS

Campfire get-togethers, music activities, archery programs, junior rangers programs, history programs, nature hikes, nature crafts, survival skills, canoeing, fishing and many more activities on most days from Memorial Day weekend through Labor Day. Programs are offered on weekends during spring and fall. Groups may request special programming any time of year if they provide advance notice and the subject matter is relevant to Bear Creek Lake's natural and historic resources. [Click here](#) to view all parks' events, festivals, workshops and interpretive programs.

### HISTORY

Bear Creek Lake was built in 1938 as a project of the Virginia Department of Agriculture through the State Forestry Division. Although this project was undertaken during the closing days of the Great Depression, the 100 men who built the lake were not members of the Civilian Conservation Corps. They were simply carpenters, farmers and unskilled laborers seeking jobs. Along with the lake, these men built two pavilions, a concession stand and six fireplaces. The land was given to the Division of State Parks in 1940, and it was operated as a day-use recreation area. In 1962 the division added campgrounds and the area's name was changed to Bear Creek Lake State Park.

### FRIENDS GROUP

Feel like lending a hand? [The Friends of Bear Creek Lake State Park](#) group is a hands-on volunteer 501c3 organization dedicated to preserving and supporting the park. Email [friendsofbearcreeklake@gmail.com](mailto:friendsofbearcreeklake@gmail.com) for more information or to become a member.

### MASTER PLAN

Master plans must be written for parks before they're built. The plans are updated at least once every 10 years thereafter. The plans cover the size, types, infrastructure and locations of facilities as well as the site's special features and resources. Three public meetings are held during the initial development of each plan. [Click here](#) (PDF) for this park's master plan.

### Events, Programs

- [08/05/2019 - Lake Canoe Tour](#)
- [08/05/2019 - Archery Games](#)
- [08/06/2019 - Little Explorers](#)
- [08/06/2019 - Request a Ranger](#)
- [08/09/2019 - Welcome Campfire](#)
- [More events at this park.](#)

[Search All State Park Events](#)

### Blogs

- [Loving Lost Barr](#)
- [7 Perfectly Delightful Ideas for Midweek Fun](#)
- [Life to Springs](#)
- [5 Favorite Cozy Cabins for Winter](#)
- [Friends Group Lights up Bear Creek Lake for Another Holiday Season](#)

- [More blogs about this park.](#)

### At a Glance

The pictographs directly below show park offerings. Mouse-over the image for a short text description or [click here](#) to view a legend in which each pictograph's meaning is expressed.

Biking, Boat Launch, Boat Rentals, Canoe Access, Cabins, Family Lodges, Camp Store/Gift Shop, Campground, Camping Lodges \*\*, Group Camping, Dump Station, Equestrian, Hiking, Lake/Bay/Ocean/River, Lifeguards, Nature/Cultural Programs, Parking fee, Picnic Shelter Rentals, Picnic Tables, Pier, Shore, Playgrounds, Recycling, Restrooms, Showers, Snack Bar, Universally Accessible

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Virginia State Parks are managed by the  
**Virginia Department of Conservation and Recreation**  
600 E. Main St., 24<sup>th</sup> Floor | Richmond, VA 23219 | 804-692-0403

To learn about park offerings and overnight accommodations, email [resvs@dcr.virginia.gov](mailto:resvs@dcr.virginia.gov) or call 800-933-PARK (7275).  
Address other general inquiries to [vastateparks@dcr.virginia.gov](mailto:vastateparks@dcr.virginia.gov).  
Please send website comments to [web@dcr.virginia.gov](mailto:web@dcr.virginia.gov).  
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Last Modified: Monday, 05 August 2019, 01:10:42 PM



BEAR CREEK LAKE STATE PARK

22 Bear Creek Lake Road  
Cumberland, Virginia 23040-9518

# Bear Creek Lake State Park

## MASTER PLAN

### Executive Summary

### 2014 Update



**Department of Conservation and Recreation**  
Division of Planning and Recreation Resources  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, Virginia 23219

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# Bear Creek Lake State Park MASTER PLAN EXECUTIVE SUMMARY

2014 UPDATE

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*Presented for review at a public meeting September 24, 2014; recommended for adoption by the Board of Conservation and Recreation on December 16, 2014; and reviewed for 30 days by the Virginia General Assembly.*

## Adopted:

/S/

\_\_\_\_\_  
Clyde E. Cristman, Director  
Department of Conservation and Recreation  
February 25, 2015



**BEAR CREEK LAKE STATE PARK**  
**MASTER PLAN EXECUTIVE SUMMARY**

This Bear Creek Lake State Park Master Plan Executive Summary is an update to the official unabridged master plan document adopted on December 6, 2002, then amended on April 28, 2009, by DCR Director Joseph H. Maroon. This master plan update is intended to set forth a clear vision for the future (based on the phased development). This 2014 executive summary represents the most recent five-year review described in §10.1-200.1 of the *Code of Virginia*. It outlines the desired future condition for Bear Creek Lake State Park when it is fully developed.

Bear Creek Lake State Park consists of some 328.7 acres nestled in the heart of the 16,242- acre Cumberland State Forest in central Virginia's Cumberland County. The park is located 4.5 miles northwest of the Town of Cumberland. Access is from U.S. Route 60. A driver would turn north on Route 622 and then west (left) on Route 629 to the park entrance.

The property today known as Bear Creek Lake State Park was originally acquired from private citizens around 1932 by the United States Department of Agriculture under the Federal Resettlement Administration. In 1939 the State Forest Service took over management of the property. In 1940 it was opened as a “State Recreation Area” with concession, bathhouse facilities, and boat rental. In 1962 the property became a state park. Providing recreational opportunities to the public was a major consideration behind the establishment of Bear Creek Lake State Park in its earliest days, and this continues to be a focus of efforts today.

The table below reflects park attendance over the last ten years:

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
50,665	51,143	46,781	62,918	70,059	77,172	77,134	79,126	78,952	78,288

In 2013 Bear Creek had 78,288 visitors: 41,856 were overnight guests, while 36,342 were day- use visitors. With this level of visitation, it is estimated that the park had an economic impact on the local economy of approximately \$3,722,112. Master plan recommendations designed to increase visitation and improve the visitor experience, once implemented, should have a further positive impact on the region’s economic vitality.

This 2014 update places value on connecting Bear Creek to other resources in the community. The park is adjacent to Cumberland State Forest, which has an extensive trail system—most notably the Willis River Trail and the Cumberland Multi-use Trail. South of the park, the Midland Trail runs along Route 60, and further south Lee’s Retreat Driving Trail follows Scenic Byways 636 and 24 to the Town of Appomattox, where our nation reunited. Other points of interest along Lee’s Retreat include Sailor’s Creek Battlefield Historical State Park and High Bridge Trail State Park. The Jackson Davis home at Cumberland Courthouse is a stop on the Civil Rights in Education Heritage Trail, and other points of interest along this trail are nearby. Bear Creek Lake and Cumberland Forest lakes are featured stops along the Fish Virginia First Trail. Other river recreation is available on Appomattox and James Rivers. The Bear Creek Lake State Park Regional Connectivity Map is an attachment to the full Master Plan document.

Bear Creek State Park received Federal Land and Water Conservation Funds (LWCF) in 1978 for swimming facilities and in 2004 for utilities. In compliance with the LWCF Act of 1965 and amendments thereto, the Commonwealth of Virginia is required to maintain the park for public outdoor recreation in perpetuity.

The Department of Conservation and Recreation Planners and State Park Staff conducted this master plan update in accordance with §10.1-200.1 of the *Code of Virginia*. This plan outlines the desired future condition of the park over a 20-year planning horizon. As required by the *Code of Virginia*, it must be revisited every five years to ensure that the development objectives outlined in the plan continue to meet the recreational, environmental and historic protection needs of the citizens of the Commonwealth. As a part of the 2014 master plan process, the 2002 park master plan and the 2009 amendment were reviewed. It was determined that significant changes occurred to the master plan to warrant a full revision. The executive summary and accompanying map have been updated. The phased development plan and costs have been revised to reflect current proposed projects. The park staffing and operations costs data have been also updated to reflect current conditions.

This 2014 master plan update describes both proposed facilities and improvements to existing facilities. New facilities are sited to minimize impact to the park, and in keeping with the prescriptive management areas as defined by the Park Resource Management Plan and the guidelines of the Park Visitor Experience Plan, when available. New facilities at this park should be designed and built with consideration to the original design and layout of facilities. These facilities will be carefully sited to minimize impacts to the views in the park and of the park from adjacent lands and water bodies to the greatest extent possible. Consideration will be given to eliminate excessive, misdirected, or obtrusive artificial light in the park in order to maximize the dark sky effect and encourage astronomy and night-sky viewing. Virginia State Parks strives to meet the requirements of the Americans with Disabilities Act (ADA) Standards. Building and site design will implement green energy standards using energy-efficient and sustainable materials and process to the greatest extent possible. Green design initiatives will be considered during the design process for park renovations and new construction. Development activities will comply with requirements set forth by the Department of Environmental Quality's best management practices for erosion, sediment control and stormwater management in order to protect water quality. A setback guideline of 100 feet from the reservoir shoreline has been established by DCR, and trails and water dependent facilities such as fishing stations, piers, and other water access facilities will be the only developments permitted within the 100-foot setback.

Additional land acquisition is recommended to enhance park offerings, establish connective trail easements/corridors, buffer the park from inappropriate development or protect valued viewsheds. Future land acquisitions will only be negotiated with willing property owners. The placement of conservation easements on adjacent property to preserve the natural resources, cultural landscapes, and scenic resources in close proximity to the park will be encouraged. In working cooperatively with neighboring landowners, the park will be enhanced and protected over time.

## Phased Development Plan

Completion of all of the projects in this list will represent total build-out (completion of the master plan), and covers a 20-year timeframe. The phasing costs are based on 2014 estimates.

### **Phase I**

Cabins (three – 3 bedroom cabins have been funded, not included in cost estimate)

Replace contact station

Redesign and construct Black Oak and Chestnut Campground Loops, Bathhouses, camp host site and (3) camping cabins

Replace bathhouse at Acorn Campground Loop

Expand linen building for storage/operations

Large Gazebo with deck at Bear Creek Hall

Remove inactive water tanks, and connect entire park to public water system

Remove all sewage holding tanks and connect fully to public sewer system

Staff residence

Improve trailheads (2)

Expand trail system

**The total estimated cost for Phase I development is \$5,962,367**

### **Phase II**

Visitor center and office/contact station park entrance/parking/dump station

Renovate beach bathhouse and concession building and deck

Play equipment at beach (water-based)

Replace boathouse and renovate docks (2)

Redesign beach area parking

Accessible trail

Expand day-use parking

Expand trail system

**The total estimated cost for Phase II development is \$5,300,100**

### **Phase III**

Extend boat launch and add dock

Large picnic shelter

Large picnic shelter in Group Camp

Comfort Station in Group Camp

Footbridges (2) along Lakeside Connector Trail

Relocate utility wires underground

Expand trail system

**The total estimated cost for Phase III development is \$2,050,121**

**The total cost to bring Bear Creek Lake State Park to its desired future condition is \$13,312,588**

**Staffing and Operations**

Staffing and operational costs at Bear Creek lake State Park are presently budgeted at \$739,000 annually, including salaries for 7 staff positions. Two additional staff positions are identified in Phase 1 which are either vacant positions or would bring the current park staffing to standard base level. At complete build out of the proposed 3 phases of development, 3 additional staff will be needed and an additional \$270,000 in operating funds. In order for the park to operate effectively and efficiently at full build out, the park must be provided the projected staffing and operating costs for the 3 development phases. The total budget for Bear Creek Lake at full build out is projected to be \$1,009,000 with 10 staff positions.

**BEAR CREEK LAKE STAFFING AND OPERATING COSTS**

<b>EXISTING (FY 15)</b>	<b>PHASE 1</b>	<b>PHASE 2</b>	<b>PHASE 3</b>	<b>FULL BUILD OUT</b>
<b><u>STAFFING</u></b>				<b>STAFFING</b>
Park Manager				Park Manager
Asst. Park Mgr				Asst. Park Mgr
Chief Ranger				Chief Ranger
	Educ. Specialist*			Educ. Specialist
Park Ranger (3)	Park Ranger*			Park Ranger (4)
	Housekeeper			Housekeeper
Office Manager				Office Manager
<b>SALARY TOTAL</b>				<b>SALARY TOTAL</b>
\$414,000	\$150,000			\$564,000
<b>WAGE TOTAL</b>				<b>WAGE TOTAL</b>
\$138,000	\$33,000	\$15,000	\$5,000	\$191,000
<b>OTPS TOTAL</b>				<b>OTPS TOTAL</b>
\$187,000	\$34,000	\$30,000	\$3,000	\$254,000
<b>TOTAL BUDGET (FY15 dollars)</b>				<b>TOTAL BUDGET (FY15 dollars)</b>
\$739,000	\$217,000	\$45,000	\$8,000	\$1,009,000

NOTE – All costs (salary, wage, OTPS (Other than Personnel Services)) are based on FY15 budget projections.  
 \* Additional positions which are vacant and/or will bring park to standard base level staffing.

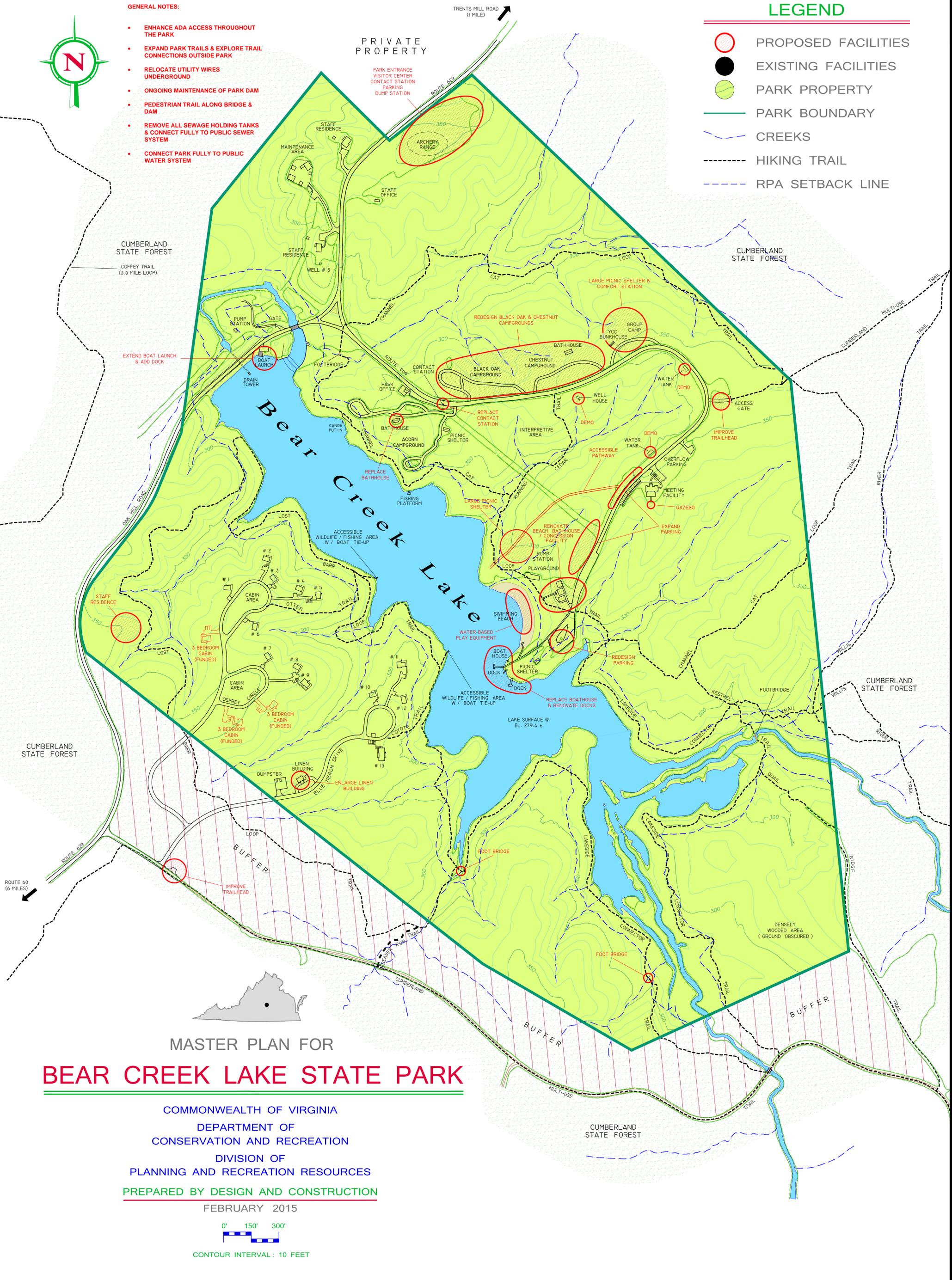


**GENERAL NOTES:**

- ENHANCE ADA ACCESS THROUGHOUT THE PARK
- EXPAND PARK TRAILS & EXPLORE TRAIL CONNECTIONS OUTSIDE PARK
- RELOCATE UTILITY WIRES UNDERGROUND
- ONGOING MAINTENANCE OF PARK DAM
- PEDESTRIAN TRAIL ALONG BRIDGE & DAM
- REMOVE ALL SEWAGE HOLDING TANKS & CONNECT FULLY TO PUBLIC SEWER SYSTEM
- CONNECT PARK FULLY TO PUBLIC WATER SYSTEM

**LEGEND**

- PROPOSED FACILITIES
- EXISTING FACILITIES
- PARK PROPERTY
- PARK BOUNDARY
- CREEKS
- - - HIKING TRAIL
- - - RPA SETBACK LINE



MASTER PLAN FOR

**BEAR CREEK LAKE STATE PARK**

COMMONWEALTH OF VIRGINIA  
 DEPARTMENT OF  
 CONSERVATION AND RECREATION  
 DIVISION OF  
 PLANNING AND RECREATION RESOURCES  
 PREPARED BY DESIGN AND CONSTRUCTION

FEBRUARY 2015



CONTOUR INTERVAL: 10 FEET

# Cumberland State Forest

## Forest History

The land that comprises Cumberland State Forest has a long history of farming. Evidence of the land's former inhabitants can be seen in the cemeteries and old homesteads scattered throughout the forest. By the mid-1930s, much of this land had become unproductive and was highly eroded. At that time, the federal government began purchasing marginal farmland under the Bankhead-Jones Farm Tenant Act, enacted to help conserve and restore the health of the land. Much of this purchased land was soon leased to the state. In 1954, the federal government deeded land to the Commonwealth of Virginia, and the Cumberland State Forest was born. Under the Virginia Department of Forestry's management, the forest grew to its present 16,222 acres in central Virginia's Cumberland County.

Cumberland State Forest is rich in history. The Charles Irving Thornton tombstone, with an inscription written by Charles Dickens, is on the National Register of Historical Places and the Virginia Landmarks Register. The forest is also the site of Col. Jesse Thomas' homestead. Colonel Thomas rode his famous horse "Fearnought" through the night to warn Baron Von Steuben that Cornwallis was coming, thus saving Von Steuben's regiment and the Continental Army's sole remaining supplies in Virginia.

## Forest Management

One management goal on the Cumberland State Forest is sustainable timber production. Management activities on the State Forest demonstrate good forestry and conservation practices and provide sites for applied research in forestry. Wildlife habitat, recreation, and watershed protection are all compatible with sound timber management strategies.

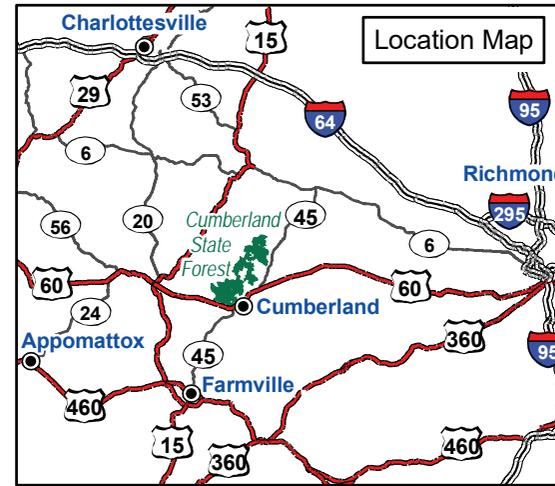
In the 1930s, much of today's forest was open farmland. When farming ceased, native pines colonized the abandoned fields. Today, the Cumberland State Forest contains a diversity of timber types, including loblolly pine stands and mature oak-hickory forest.

## About Your State Forests

The Virginia Department of Forestry (VDOF) manages 19 State Forests and other state lands, totaling 57,685 acres. Virginia's State Forests are managed for multiple uses: water quality, recreation, forest products, wildlife and scenic beauty. The primary management goals of individual State Forests may vary, usually depending on the wishes of the donor of the land.

The State Forests of Virginia are self-supporting and receive no taxpayer funds for operation. Operating funds are generated from the sale of forest products. In addition, up to 25 percent of the revenue received from the sale of forest products is returned to the counties in which the forests are located. You can support educational programs on your State Forests by donating a portion of your state tax refund to Virginia's State Forests Fund.

## LOCATION



## MORE INFORMATION

To learn more about what your state forests have to offer and to get directions to any state forest, visit [www.dof.virginia.gov](http://www.dof.virginia.gov).

## CONTACT INFORMATION

**State Forest Main Office and Cumberland State Forest Office:**

Phone: (804) 492-4121 ; FAX: (804) 492-9213  
751 Oak Hill Road, Cumberland, VA 23040-2511



**Virginia**  
**Department of Forestry**  
Headquarters  
900 Natural Resources Drive, Suite 800  
Charlottesville, Virginia 22903  
[www.dof.virginia.gov](http://www.dof.virginia.gov)  
Phone: (434) 977-6555  
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VDOF P00152; 06/2009

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# CUMBERLAND STATE FOREST

~ 16,222 Acres ~  
Cumberland County



Virginia Department of Forestry  
[www.dof.virginia.gov](http://www.dof.virginia.gov)



## Forest Recreation

The Cumberland State Forest is open from dawn to dusk and offers opportunities for hiking, wildlife watching, biking, horseback riding, hunting, fishing, and picnicking. Visitors are asked to adopt a "leave no trace" ethic when visiting the forest, as there are no restrooms or trashcans on the forest itself. Bear Creek Lake State Park, operated by the Department of Conservation and Recreation, is located within the forest and provides a good starting point for visiting the State Forest. The 14-mile Cumberland Multi-Use Trail weaves through both park and forest and can be accessed from either the park or the Cumberland State Forest office. The 16-mile Willis River Hiking Trail meets the Willis River as it goes from one end of the forest to the other. Hikers may also use the network of forest roads and trails that traverse the forest. Four lakes are available for fishing.

A State Forest Use Permit is required for hunting, trapping, fishing, bike riding and horse riding on Virginia State Forests. Permits are required for individuals age 16 and older, and can be purchased online for \$15.00 at <http://secure01.virginiainteractive.org/horf/> or where hunting licenses are sold.

### Cumberland State Forest Features:

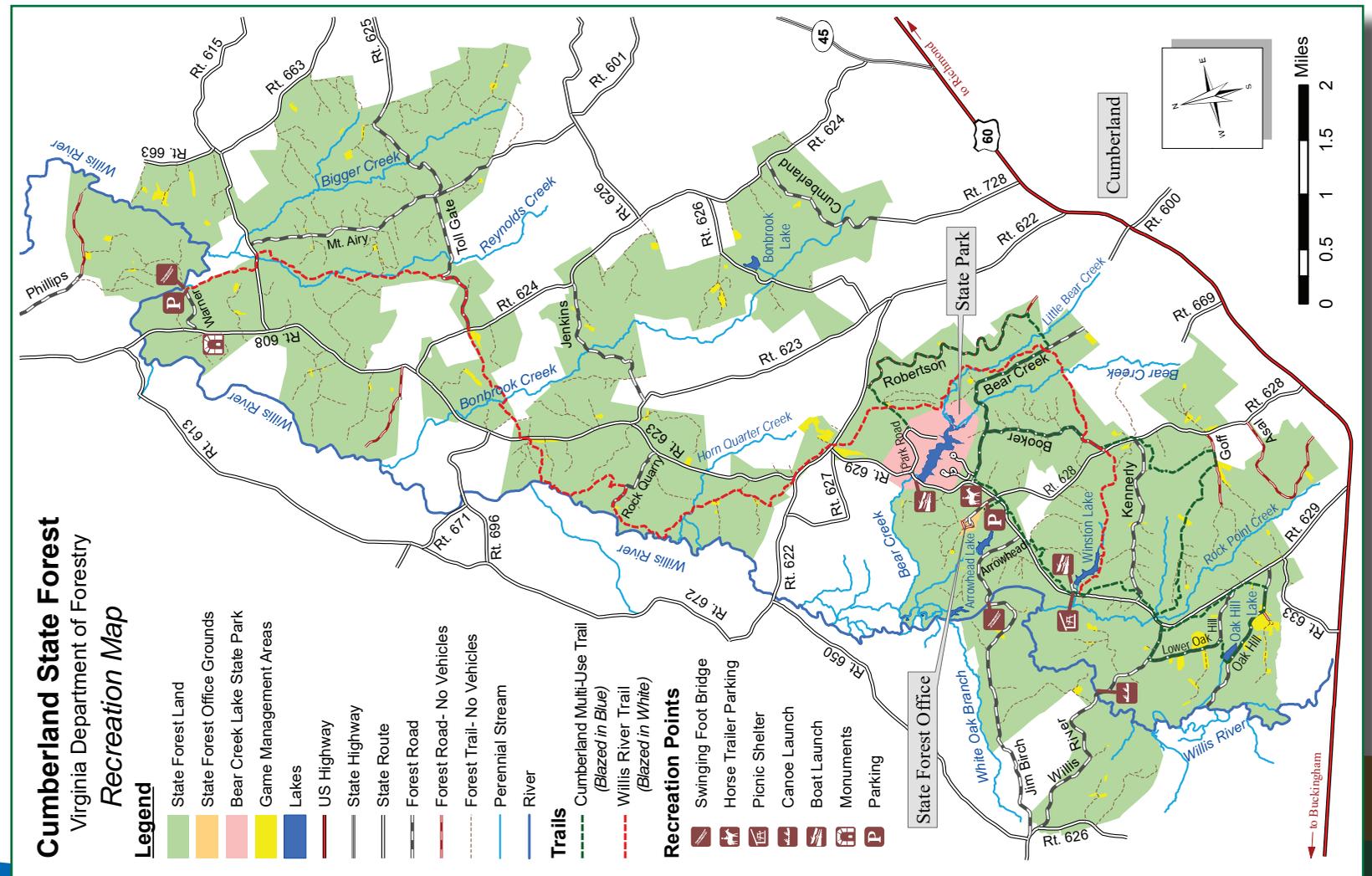
- Trails: 30.5 miles
- Vehicle Roads: 24.8 miles
- Gated Vehicle Trails: 74.8 miles
- Ponds/Lakes: 4
- Hunting/Fishing: Yes
- Picnic Shelter: 1
- Restrooms: No

## State Forest Regulations

- Hunting and trapping with State Forest Use Permit in accordance with state hunting regulations.
- Fishing in designated areas only with State Forest Use Permit in accordance with state fishing regulations.
- Biking and horse riding in designated areas only with State Forest Use Permit.
- State Forest Use Permits required only for anyone age 16 and older.
- No removal of any tree, plant or mineral.
- Remove all trash.
- No camping, ATVs or public display of alcohol.
- No fireworks, campfires or open air fires of any type.
- Firearms are prohibited except for hunting purposes.
- Gasoline motorized boats are not permitted.
- Vehicular traffic on established roads only; not permitted on gated roads.

For a complete listing of State Forest Regulations, go to [www.dof.virginia.gov](http://www.dof.virginia.gov).

Hunters map available at [www.dof.virginia.gov](http://www.dof.virginia.gov).



# Cumberland State Forest

Agencies contacted during the preparation of this Landfill Impact Statement and Part A Application include:

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1 Courthouse Circle  
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(804) 492-3800

Ms. Stephany S. Johnson  
Deputy Clerk/FOIA Officer  
1 Courthouse Circle  
P.O. Box 110  
Cumberland, VA 23040  
(804) 492-3800

Ms. Vivian Giles (left County employ)  
County Administrator/County Attorney

Mr. Brian Butler (County Attorney)  
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Cumberland, VA 23040  
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Mr. Don Unmussig (County Administrator)  
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**U.S. Army Corps of Engineers**

Mr. Steve Vanderploeg  
Richmond Field Office  
9100 Arboretum Parkway, Suite 235  
Richmond, VA 23236  
(804) 323-3781

**U.S. Fish and Wildlife Service**

Virginia Ecological Services Field Office  
6669 Short Lane  
Gloucester, VA 23061-4410  
(804) 693-6694

USFWS: Endangered Species  
<https://www.fws.gov/endangered/>

iPAC: Information for Planning and Consultation  
<https://ecos.fws.gov/ipac/>

**Virginia Department of Aviation**

Mr. S. Scott Denny  
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5702 Gulfstream Road  
Richmond, VA 23250-2422  
(804) 236-3624

**Virginia Department of Conservation and Recreation**

Ms. René Hypes  
Natural Heritage Project Review Coordinator  
600 East Main Street  
Richmond, VA 23219  
(804) 786-6124

DCR: Natural Heritage Definitions  
<http://www.dcr.virginia.gov/natural-heritage/help>

**Virginia Dam Safety and Floodplain Management**

600 East Main Street  
Richmond, VA 23219  
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**Virginia Department of Environmental Quality**

Mr. Jason Miller (retired)  
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Glen Allen, VA 23060  
(804) 527-5020

Sanjay V. Thirunagari  
Manager  
Division of Land Protection & Revitalization  
Department of Environmental Quality  
(804) 698-4193

**DEQ: Water Quality**

[https://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/IntegratedReport/2018/ir18\\_Appendix1a\\_Category5\\_List.pdf](https://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/IntegratedReport/2018/ir18_Appendix1a_Category5_List.pdf)

**Virginia Department of Game and Inland Fisheries**

<https://vafwis.dgif.virginia.gov/maps/>

**Virginia Department of Health**

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**Virginia Department of Historic Resources**

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Archives Coordinator  
Survey & Register Division  
(804) 482-6440

VCRIS: Cultural Resource Information System

<https://vcris.dhr.virginia.gov/vcris/MapView/Account/Logon?returnUrl=%2Fvcris%2FMapView%2F>

**Virginia Marine Resources Commission**

Ms. Allison Lay  
Environmental Engineer, Habitat Management  
380 Fenwick Road, Bldg. 96  
Fort Monroe, VA 23651-1064  
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**Virginia Department of Transportation**

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