

**Public Comments submitted to the  
Virginia Department of Environmental Quality  
For the Westmoreland County No Discharge Zone Application**

**Public Comment:**

Mon 6/20/2011 10:32 AM

Dear Ms. McKercher,

Please accept my comments in favor of the Westmoreland County NDZ draft application. Eliminating the contribution of partially treated sewage from marine sanitation devices will go far towards achieving compliance with water quality standards in these small creeks.

Thank you for allowing me to submit comments and be on record for the approval of this application.

Sincerely,

Denise Mosca

6977 Ark Road

Gloucester Va. 23061

804-693-9097

[dmosca@cox.net](mailto:dmosca@cox.net)

**DEQ Response:**

Tue 6/21/2011 9:04 AM

Greetings Ms. Mosca,

I received your comment supporting the draft application for designation of No Discharge Zones in Westmoreland County. Your comment will be incorporated into the application for submittal to EPA.

Best Regards, Liz

**Public Comment:**

*Public Comment is Embedded in DEQ Response Below*

**DEQ Response:**

August 5, 2011

Mr. Dale T. Weatherstone  
Managing Director Ft. Lauderdale Operations  
Raritan Engineering Company, Inc.  
3101 S.W. 2<sup>nd</sup> Avenue  
Ft. Lauderdale, Florida 33315  
954-525-0378 ext. 300  
Fax: 954-764-4370

[Dalew@raritaneng.com](mailto:Dalew@raritaneng.com)

Dear Mr. Weatherstone:

Thank you for your comments, dated June 24, 2011, regarding the Westmoreland County NDZ application and process.

Enclosed are staff responses to your requests.

I appreciate your company's efforts to participate in the process.

Sincerely,

David S. Lazarus  
Watershed Program Manager  
Office of Water Quality Programs

Enclosures

Cc: Mark Alling  
Margaret Smigo  
[charlene@raritaneng.com](mailto:charlene@raritaneng.com)

**Westmoreland County NDZ Application  
Comments for Mr. Weatherstone, Raritan Engineering and DEQ Responses**

Under Certification of Need: DEQ claims that "while terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore may have a more immediate impact on local water quality.

Comment: In all waters of Virginia and the United States it is a violation of State and Federal law to discharge untreated waste into any waters within the state. A Federal NDZ is only a ban on the use of Type I and II MSD's that treat waste by destroying the bacteria that DEQ is addressing. The most popular device used by recreational vessels under 65 ft. is Electro Scan (formerly Lectra Scan) which treats waste water with bacterial reductions 100 times greater than EPA standards. As most boats use raw water for flushing, the treated discharge water returns cleaner than receiving waters.

*Response: DEQ acknowledges that some MSDs may emit low levels of bacteria. Design, operation, maintenance and salinity affect performance and all MSDs are not equal in performance. While some devices are more environmentally protective than others, the Federal law does not allow states to exempt those more protective devices. Direct depositions of bacteria and nutrients have a greater impact on water quality in sensitive shellfish resource areas. DEQ acknowledges that type I and II MSDs are required to discharge effluent that generally meets the water quality standard for recreation. An EPA study in 2007 determined that the vast majority of effluent discharged from an Electro scan MSD had*

*low levels of fecal coliform bacteria. However, there is no guarantee that MSDs are working properly long after they leave the factory. Many older vessels still have their original MSD on board, and are two to three decades old.*

Comment: The current existing laws “prohibit the discharge” of untreated human waste. Banning the only alternative that is clean, safe and will not cause water quality impairment in already impaired waters in the form of current USCG approved MSD’s is not a logical nor effective means of attempting to improve water quality. Enforcement of existing laws and regulations is what is needed.

*Response: NDZs are designated as one tool to protect shellfish growing waters from treated and untreated boat waste. While it is illegal to discharge raw waste per the Clean Water Act, NDZs elevate the message to the public that dumping is illegal and that because the waters are sensitive to pollution, it is necessary to prohibit discharges from MSDs to achieve reductions in sensitive water bodies.*

*Enforcement of existing laws and regulations can improve within NDZs. Local residents become aware of the prohibition and will report violations. Also, because a physical barrier to the use of the y-valve or toilet is required, it is easier for law enforcement officials to visually identify violations.*

*It is a watershed stewardship tool that can be effective for improving water quality and given the extent of impairments for bacteria, SAV and DO, the DEQ has determined that they are necessary and beneficial. NDZs in Virginia have proven to be an effective means of reducing waste entering Virginia’s waters. In the Lynnhaven River the number of pump outs at the Cavalier Golf and Yacht Club increased from 154 in 2006 (pre-NDZ) to 299 in 2007 (post-NDZ). In the Middlesex County, Virginia NDZs, three major marinas report double number of pump-outs in first year of NDZ designation.*

**Monitoring:** DEQ states that “although many sources potentially contribute to declining water quality in these waters, it should be **assumed** that discharges from vessels anchored, docked, moored, or operating within them, have the potential to be contributory sources to the overall bacterial load.”

Comment: First, these statements are speculative with no basis in scientific factor evidence with regard to vessels equipped with approved USCG Type I or II treatment technology. Has DEQ conducted any DNA analysis of the bacterial found in the listed impaired creeks to establish the source? If this has been done and human bacteria found, it should not be “assumed” that said bacteria comes from boats, particularly inasmuch as there are so many low lying septic systems and an estimated human population of **10,620 people** that may reside adjacent to the water bodies that DEQ intends to be a NDZ for boat MSD’s. Of the 4,462 (E911) structures listed what percentage of or how many are connected to sanitary sewer system or how many or what percentage rely on on-site sewage system such as a septic tank system that may contribute to bacterial and nutrient loading to adjacent creek waters?

Comment: According to a study conducted in the mid 1990’s to determine non point sources of bacteria done by Professor George Simmons, Virginia Polytech, on the eastern shore of Virginia, the high fecal coliform and ecoli levels were attributed to wildlife, not human. The bacteria was identified via DNA fingerprinting and other means. Has DEQ conducted similar tests in the tidal creeks slated for NDZ designation? What is the percentage or ratio of animal sources versus human sources.

Response: Yes, DEQ uses bacteria source tracking (BST) to identify the probable source of fecal bacteria. Pollution budgets (aka TMDLs) have been developed for nine watersheds or water bodies within Westmoreland County. The relative percentages are available online by looking at the TMDLs. See, <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> and search by the water body name or county name, then view the the full TMDL report.

Some water bodies exhibit a prominent bacterial load from wildlife and others do not. For example, Mill Creek in the Yeocomico River basin receives an estimated 40% of its fecal bacteria load from wildlife and 29% from humans. Conversely, in the Garret's Marina Watershed 31% of fecal coliform is from human sources versus 14% from wildlife. See, upper Rappahannock watershed TMDL for more information. Irrespective of relative pollutant loads, many pollution budgets identify the need to completely eliminate all sources of human bacteria. That translates to a 100% reduction in human bacteria sources to meet water quality standards. Therefore, all boat-based and land-based human waste must be eliminated from the water bodies.

TMDLs for Gardner and Jackson creeks call for a 100% reduction in human and livestock bacteria sources to meet the pollution budget. The Bonum Creek TMDL calls for 100% reduction in human sources and 99% reduction in livestock and pet sources. The Lower Machodoc Creek watershed TMDL calls for a range of 55% to 100% reductions in human sources across five water bodies. The Mattox Creek TMDL calls for a 100% reduction in human fecal coliform sources, 99% reduction in livestock based sources and a 50% reduction in wildlife based sources. The Monroe Creek TMDL seeks to eliminate 100% of the human derived fecal component regardless of the allowable load determined through the load allocation process. The Nomini Creek watershed TMDL seeks to eliminate 100% of the human derived fecal component across all water bodies in the watershed. The Popes Creek TMDL calls for a 100% reduction in human source fecal bacteria and 99% reduction in livestock sources of fecal bacteria. The Rosier Creek TMDL calls for 100% and 75% reductions in human source and livestock source fecal bacteria, respectively. The Yeocomico River watershed TMDL calls for a 100% reduction in human source fecal bacteria for four water bodies, and zero bacterial reduction in Mill Creek where no bacterial reduction is necessary for any source. The TMDL for the upper Rappahannock calls for a 100% reduction of human sources for all water bodies in the study area.

The table below presents overall percentages of animal sources versus human sources for Westmoreland County TMDLs pursuant to your request.

<b>Summary of Bacteria Sources*</b>	<b>Source of Fecal Coliform Bacteria (Percent of total fecal coliform load)</b>			
	<i>Wildlife</i>	<i>Human</i>	<i>Livestock</i>	<i>Pets</i>
<i>Gardner, Jackson and Bonum Creeks (averaged*)</i>	13.6	72	40	39
<i>Lower Machodoc Creek Watershed</i>	10	22	37	31
<i>Mattox Creek</i>	40	17.5	26	16.5
<i>Monroe Creek</i>	39	28	23	10

Nomini Creek watershed (averaged*)	20	30	35	14
Popes Creek (Potomac River: Mattox Creek to Currioman Bay)	36	24	25	15
Rosier Creek	38	30	20	12
Yeocomico River watershed (averaged*)	26	28	22	24
Upper Rappahannock River watershed (averaged*)	18	22	38	23
*Nomini Creek watershed – 7 water bodies, Yeocomico – 5 water bodies, Upper Rappahannock – 5 water bodies				

DEQ does not have the statistic regarding number of homes using municipal sewer versus on-site sewage treatment. Nor does the data differentiate between land-based and boat-based human sewage. However, TMDL's characterize land-based sources of bacteria and estimate the number of septic systems in the TMDL area. Certain TMDLs differentiate in the data summary between on-site sewage treatment and other system that are not effectively treating sewage (e.g. straight pipes and failing septic systems). Most TMDLs estimate the number of septic systems and other land-based sources such as number of horses, cattle, sheep, duck, deer raccoon, etc for the TMDL study area. All TMDLs provide copies of recent Virginia Department of Health shoreline surveys, which identify and serve to rectify failing on-site sewage systems along the shore. The most recent VDH shoreline surveys can be found at <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm>

The table below provides data from the TMDLs in Westmoreland County.

TMDL Water body	Number of Septic Systems
Lower Machodoc Creek	39
Mattox – Free-flowing Segment	565
Mattox – Tidal Segment	793
Monroe Creek	243
Nomini Creek watershed	1274
Popes Creek	99
Rosier Creek	No estimate in TMDL*
Yeocomico River watershed	No estimate in TMDL*

**\*The Rosier Creek TMDL only cites the Department of Health survey which identifies 2 onsite sewerage deficiencies. The Yeocomico River watershed TMDL reports that 51 onsite sewerage deficiencies were identified via the Department of Health shoreline surveys.**

Mattox Creek and the Upper Rappahannock are examples of TMDLs characterizing failing septic systems and onsite sewerage deficiencies rather than just listing them. The upper Rappahannock River TMDL estimates number of houses on sewer, septic, "other means", and failing septic. The table below provides a dataset derived from relevant County estimates in the Northern Neck plus Essex County. The upper Rappahannock TMDL goes into far greater detail. See <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> to view any of the TMDL Reports cited.

The following tables present data on failing onsite sewerage systems for two TMDL reports.

<b>Estimates in Mattox Creek</b>			
<b>Water body</b>	<b>Septic Systems</b>	<b>Failing Septic Systems</b>	<b>Uncontrolled Discharges</b>
Mattox – Free-flowing Segment	565	101	29
Mattox – Tidal Segment	793	143	15
<b>Total</b>	<b>1,358</b>	<b>244</b>	<b>44</b>

<b>Estimates in the Rappahannock River Watershed</b>			
<b>Number of Houses Public Sewer</b>	<b>Number of Houses on Septic Systems</b>	<b>Number of Houses on "Other Means"</b>	<b>Number of Houses with a Failing Septic System</b>
<b>4,788</b>	<b>23,023</b>	<b>1,977</b>	<b>2,763</b>

Comment: EPA effluent standards for Type I & II MSD's do not require that current devices address nutrients, COD or BOD other than reductions of TSS because of so few vessels that would be using these devices when compared to all other point and non point sources which contribute over 99% of the above. An example of how few nutrients are released using the Raritan Electro Scan (see USEPA "evaluation of improved Type I Marine Sanitation Devices – Performance Evaluation Report published January 2010). See pages 4-14.

Table 4-8, total Kjeldahl nitrogen – Electro Scan and page 4-16, to table 4-10, total phosphorus – Electro Scan.

<b>Effect of Discharge From Electro Scan</b>						
			Flush Volume			
			Gallon	100 Gallon	500 Gallon	1000 Gallon
	Mg/l*	kg/G	Lb/G	Lb/100 G	Lb/500 G	Lb. 1000 G
Total Kjeldahl Nitrogen	45	0.00017	0.000375	0.0170325	1.18769815	0.3753963
Total Phosphate	2.2	8.33E-6	184E-05	0.0008327	0.0009176354	0.018352708
*average of 10 day test table 4 -8 to 4-10 as per "Evaluation of Type I Marine Sanitation Devices" report by EPA						

To put the MSD nutrient discharge into proper perspective see:  
[http://www.epa.gov/reg3wapd/pdf/pdf\\_chesbay/FinalBayTMDL/CBayFinalTMDLExecSumSection1through3final.pdf](http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/CBayFinalTMDLExecSumSection1through3final.pdf)

See 3<sup>rd</sup> paragraph contained in the above link to Chesapeake Bay/Final Bay TMDL Executive Summary Section 1 through 3 – The TMDL – The largest ever developed by EPA – Specifically, the TMDL sets by watershed limits of **185.9 Million Pounds** of nitrogen, **12.5 Million Pounds** of Phosphorus and **6.45 Billion Pounds** of sediment **Per Year!** Boat toilets with Electro Scan devices use on average ½ - ¾ gallon per flush. The amount (wt.) of the total nitrogen for 10,000 gallons of treated waste is **3.75 Pounds** and the amount of phosphorus for 10,000 gallons of treated waste is **0.18 Pounds**.

**Monitoring:** DEQ further states that “Depending on the Type of MSD, wastewater discharges from marine vessels may also contain additional pollutants, such as protozoa (e.g., Giardia), viruses (e.g., Norovirus), and deodorants or sanitizing chemicals (e.g. Formaldehyde) that are potentially harmful to humans, wildlife, and the environment.”

**Comments:** This is not only incorrect it is misleading. The only “MSD” that could potentially discharge some of the things the DEQ contends is a Type III MSD or holding tanks which if that is the case is and has been, regardless of NDZ designation, a violation of state and federal laws. USCG Type I & II MSD’s **Do Not** discharge these elements but rather eliminate harmful bacteria and even viruses which POTW’s (Publicly Owned Treatment Works) are not required to do. DEQ’s desire to require a 100% dependence on the only system that can, if done illegally, cause problems in favor of accepting other forms of technology that would otherwise prevent this is counter to DEQ’s and the public’s desire for unimpaired water.

DEQ, through it’s public comments and statements to the media has caused financial damage to our company, Raritan Engineering Company, Inc. by using false and misleading assumptions and incorrect information in describing the operation and effectiveness of our product(s). This also impairs the further development and improvements in technology that could result in even better environmental protection. Furthermore, NDZ’s result in boaters not investing in Type I or II systems for fear they will be banned causing them to in many cases discharge raw holding tank sewage into waters not yet equipped with pump outs.

**Final Comments:** DEQ reports that there are 536 vessels from 26 ft. to over 40 ft. in Westmoreland County, VA.

DEQ lists 15 creeks or rivers to be designated as NDZ’s so of these the NDZ would address 35.73 boats 26 ft to 40 ft per creek that must find a pump out, and not be allowed to use a Type I MSD such as the Electro Scan.

DEQ states that the 15 creeks or rivers to be designated as NDZ’s consist of a total of 5,938 acres. This means that there will be 11 acres of creek waters per boats from 26 ft to over 40 ft.

DEQ lists the collective square miles of the 15 creeks or rivers to be designated as NDZ’s to be 9.22 square miles and DEQ lists the collective shoreline distance for the 15 creeks or rivers to be 150.75 miles. The 6 pump out facilities listed by DEQ to provide services to all boats over this vast area, appear to be woefully inadequate. Based on these facts it appears that the exiting pump outs will not be reasonably available or adequate. What is DEQ’s plan when one or more pump outs is out of order? These are mechanical systems that will have mechanical breakdowns occasionally.

According to the National Marine Manufacturers Association (NMMA) in a letter sent to the USEPA office of water November 9, 2010 that “use patterns should be evaluated when considering MSD regulations of recreational boats.” Boats in the US were used an average of 29 days in 2009. Boats smaller than 13 feet were used an average of 21 days, boats 14 feet to 29 feet were used an average of 31 days, and boats 30 feet and larger were used an average of 34 days. (NMMA, 2009 statistical abstract (table 1.17k).

Based on the number of boats (536 26 to over 40 ft) and the low average use patterns of recreational boats and the comparative large area of waters targeted by DEQ to be NDZ's it is unrealistic to expect any water quality improvement as a result of NDZ's and it may actually result in unnecessary pollution from boats forced to empty holding tanks when pump outs are not functioning or not accessible. This can be avoided in an environmentally safe, clean and intelligent way by not removing the only rational alternatives to a one size fits all approach.

*Response: DEQ acknowledges that complying with NDZs can require additional planning by boaters. Because NDZs are only applicable in limited areas usage of MSD technology is supported by DEQ and may be used in all non-NDZ waters.*

*Also, DEQ acknowledges pump outs may be less available in certain areas despite being generally available across Westmoreland County. Nationwide data suggest that the EPA formula to determine adequate pump out availability does confirm adequate pump outs in NDZs. EPA surveyed 958 boaters during 2003 to evaluate NDZs across the United States. When asked if they had trouble using a pump out during the 2003 boating season, the reply included the following: 9% said Yes, 74% said No, and 17% said they did not attempt to use a pump out. When asked if they had trouble using a pump out the last time they were in an NDZ the reply included the following: 3% said Yes, 70 % said No, and 27% said they did not try to use a pump out the last time they were in an NDZ. Source: Final No Discharge Zone Evaluation, 2004. See, <http://water.epa.gov/polwaste/vwd/ndzdocument.cfm>. To designate only the most enforceable and practical No Discharge Zones, DEQ and the NNPDC removed four creeks from the application prior to the public notice of the draft. This was done because Hull, Hacks, Cubitt, and Presley creeks do not provide a pump out within the water body, and they are relatively difficult to navigate at the mouth.*

*DEQ encourages Raritan Engineering Company, Inc. to continue to be a front runner in MSD technology by developing a hybrid Electro Scan that can provide immediate treatment and discharge in Non-NDZ areas, but can delay discharges when the vessel is in an NDZ for later on-board treatment or pump out.*

### 3.1 Facility Maintenance

DEQ states here that the “broken pump-outs can be reported by calling the VDH marine Program.” When a boat/vessel with a full holding tank that needs to be pumped out encounters a broke pump-out station a phone call to VDH will do nothing to relieve the situation and will unfortunately in some or many cases result in the discharge of highly concentrated holding tank sewage overboard this will not only be violating existing laws but could have been prevented if DEQ had not pressed for NDZ designation and allowed the environmentally safe discharge of properly treated one flush at a time effluent from USCG approved Type I or II MSD's. Because the NDZ prevents the use of these devices and requires a one size fits only approach to

onboard marine sanitation systems in the form of boat/vessel holding tanks water contamination will occur and DEQ will be partner to this environmental damage.

*Response: Thank you for identifying this on-going water quality concern. It is correct that pump-outs do periodically break down. The VDH is diligent about rectifying any break-downs especially for marinas receiving federal funding to provide pump-out facilities.*

*DEQ acknowledges that overboard discharge of untreated sewage, a Clean Water Act violation, may currently occur throughout the Chesapeake Bay region. These violations can occur irrespective of NDZ designation. DEQ believes that heightened enforcement capabilities, due to across-the-board enforcement of the NDZ for all boats, will deter illegal dumping of onboard sewage proximal to sensitive shellfish beds.*

*NDZs designated in coastal Virginia in recent years have resulted in an increased number of pump-outs. In the Lynnhaven River NDZ, the Cavalier Golf and Yacht Club reported 154 pump-outs in 2006 (pre-NDZ) and 299 pump-outs in 2007 (post-NDZ). In the Deltaville area, three major marinas report a doubling of pump-outs in the first year of NDZ designation in Broad and Jackson creeks and Fishing Bay. DEQ acknowledges that complying with NDZs can require additional planning by boaters. DEQ believes that management of sensitive tidal waters through the implementation of NDZs will help balance multiple uses of the water bodies in question and ultimately improve water quality.*

**Public Comment:**

July 8, 2011

Liz McKercher  
DEQ Watershed Coordinator  
P.O. Box 1105  
Richmond, VA 23219

RE: Westmoreland County No Discharge Zone

The Chesapeake Bay Foundation (CBF) is the largest conservation organization dedicated solely to saving the Chesapeake Bay watershed. Our motto, *Save the Bay*, defines the organization's mission and commitment to reducing pollution, improving fisheries, and protecting and restoring natural resources such as wetlands, forests, and underwater grasses. CBF has approximately 80,600 members in Virginia.

CBF believes implementation of no discharge zones as currently proposed in Westmoreland County waterways would help the county meet the quantifiable nutrient and sediment reductions that will be required by Phase II of Chesapeake Bay Watershed Implementation Plans.

In its efforts to restore the Bay and its tributaries, CBF has been focused on reducing nutrients (nitrogen and phosphorus), identified as the primary source of impairment for these waters. Solids, sometimes referred to as sediments, are also a significant source of concern throughout the watershed. The current Chesapeake Bay Total Maximum Daily Load focuses clean-up actions on these three pollutants, which cause a variety of problems for the Chesapeake Bay that can limit recreational and economic development opportunities.

Excess nutrients are responsible for producing algae blooms that block much needed sunlight from passing through the water, stunting vital underwater grasses, and also create low oxygen conditions as the algae die and decompose. Solids also reduce light passing through the water and can lead to the sedimentation (covering) of various benthic habitats, including oyster habitat.

Currently, the most readily available marine sanitation devices (MSD) on the market offer no reduction in the nutrient load in the waste stream. In addition, current MSDs treat solids, which will eventually become sediments, only through maceration and do not remove them as is the case with more advanced wastewater treatment techniques.

Because of this, making the proposed waterways in Westmoreland County no-discharge zones and ensuring that all wastes are treated with more advanced wastewater treatment techniques will only help in the ongoing efforts to restore these waterways. CBF believes that the timing of this proposed No Discharge Zone is fortuitous in that it could improve waterway quality, expand water-related economic opportunities, and also help Westmoreland County meet its nutrient reduction requirements.

Sincerely,

Chris Moore  
Hampton Roads Scientist  
Chesapeake Bay Foundation

**DEQ Response:**

*Fri 7/8/2011 4:40 PM*

Chris,

Thank you for your comment. It will be included with the application for final submittal to EPA.

Best Regards, Liz

**Liz McKercher**

Watershed Coordinator, Virginia Department of Environmental Quality

**Public Comment:**

VADEQ-Central Office  
Attn: Liz McKercher, Watershed Coordinator  
P.O. Box 1105  
Richmond, VA 23218

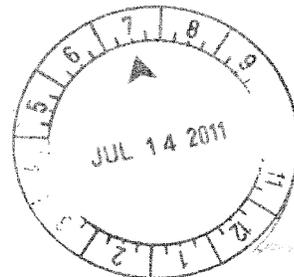
July 11, 2011

To: Whom it may concern:

This comment is in regard to "Westmoreland County NDZ draft application". I am opposed to any attempts to impose additional federal rules or regulations that affect the citizens of Westmoreland without their direct oversight and control. That includes the setting the allowable limits, taking of samples and determining the acceptable quality levels of all contaminants.

Jerry Sartori  
644 Buckner Creek Road  
Montross, VA 22520

Jerry Sartori



**DEQ Response:**

Jerry Sartori  
644 Buckner Creek Road  
Montross, VA 22520

August 5, 2011

Dear Mr. Sartori:

Thank you for your comment, dated July 11, 2011, regarding the Westmoreland County No Discharge Zone (NDZ) application. Your comment will be incorporated into the final application for submittal and review by the U.S. Environmental Protection Agency.

DEQ has encouraged local input during multiple points in the development of the Westmoreland County application. DEQ contracted the Northern Neck Planning District Commission (NNPDC) to prepare applications for NDZ designations in the four counties, because the NNPDC could impart local knowledge. DEQ removed Popes Creek from the application prior to the public notice of the draft due to local comments. The local reports indicated that Popes Creek does not provide a pump out within the water body, and it is relatively difficult to navigate at the mouth. DEQ is also considering extending boundaries of the Nomini and Lower Machodoc NDZs due to local requests to provide extended protection of shellfish resources specifically in those water bodies.

I appreciate your participation in the process.

Sincerely,

Liz McKercher  
Watershed Coordinator  
Office of Water Quality Programs

Cc: Mark Alling (by email)  
Margaret Smigo (by email)  
Dave Lazarus (by email)

**Public Comment:**

07/11/11

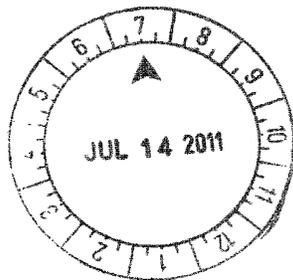
VADEQ-Central Office  
Attn: Liz McKercher, Watershed Coordinator  
P.O. Box 1105  
Richmond, VA 23218

Westmoreland County NDZ draft application  
Comments:

Make no mistake, adapting the NDZ program means the local authorities loose control on how our streams and land are used. Once again outside groups want to decide how, when and where things are done. They always know what is best for us. They say, we always pay!!!!

ROBERT TRUNNELL  
758 BOCKNER CREEK RD  
MOUNT HOLLY, VA 22524

*Robert Trunnell*



**DEQ Response:**

August 5, 2011

Robert Trunnell  
758 Buckner Creek Road  
Mount Holly, VA 22524

Dear Mr. Trunnell:

Thank you for your comment, dated July 11, 2011, regarding the Westmoreland County No Discharge Zone (NDZ) application. Your comment will be incorporated into the final application for submittal and review by the U.S. Environmental Protection Agency.

DEQ has encouraged local input during multiple points in the development of the Westmoreland County application. DEQ contracted the Northern Neck Planning District Commission (NNPDC) to prepare applications for NDZ designations in the four counties, because the NNPDC could impart local knowledge. DEQ removed Popes Creek from the application prior to the public notice of the draft due to local comments. The local reports indicated that Popes Creek does not provide a pump out within the water body, and it is relatively difficult to navigate at the mouth. DEQ is also considering extending boundaries of the Nomini and Lower Machodoc NDZs due to local requests to provide extended protection of shellfish resources specifically in those water bodies. .

I appreciate your participation in the process.

Sincerely,

Liz McKercher  
Watershed Coordinator  
Office of Water Quality Programs

Cc: Mark Alling (by email)  
Margaret Smigo (by email)  
Dave Lazarus (by email)

**Public Comment:**

*Public Comment is Embedded in DEQ Response Below  
Comments and responses included multiple attachments. Please contact  
[Elizabeth.mckercher@deq.virginia.gov](mailto:Elizabeth.mckercher@deq.virginia.gov), 804-698-4291 to obtain copies of the attachments.*

**DEQ Response:**

August 12, 2011

Mr. Tom Neale  
Boaters for Clean Waters  
P.O. Box 631  
Lancaster, VA 22503  
[tomneale@juno.com](mailto:tomneale@juno.com)

Dear Mr. Neale:

Thank you for your comments, dated July 14, 2011, regarding the Westmoreland County NDZ application and process. Pursuant to your request, DEQ will notify you of any pending State Water Control Board action.

Enclosed are staff responses to your requests.

I appreciate your company's efforts to participate in the process.

Sincerely,

David S. Lazarus  
Watershed Program Manager  
Office of Water Quality Programs

Enclosures

Cc: Mark Alling  
Margaret Smigo  
Jefferson Reynolds

**Westmoreland County NDZ Application Comments and DEQ Responses  
Mr. Tom Neale**

Neale Comment:

To: VA DEQ, VA Water Control Board and US EPA  
From: Tom Neale, PO Box 631, 532 Mastons Wharf Road Lancaster, VA 22503  
Phone: 804 462 6208  
Re: Westmoreland County Virginia NDZ Petition, prepared by VA DEQ and NNPDC  
Date: July 14, 2011

**I request to speak before the Virginia Water Control Board concerning this petition.**

Standing

I live on a tributary in the Northern Neck of Virginia. I travel thousands of miles per year on boats and fish, swim and dive in local area waters. I passionately desire clean water. This DEQ petition will cause more pollution not less, and it ignores real causes of pollution. Following are comments in opposition.

**Preliminary Statement**

**The presentation of this petition to the EPA will be tantamount to making false statements to a Federal agency for the purpose of obtaining a rule making decision. See discussion below.**

**Research has been conducted in a manner to manipulate a predetermined desired result as to whether there are adequate pumpouts and whether there is need for an NDZ. Fundamental conclusions presented in the petition are the result not of fact but of assumption and an EPA formula which creates fiction to support the desired conclusion and is in direct contradiction to 33 USC 1322 (f) (3). They are also the result of misstatements of facts so egregious that they must be assumed to be deliberate. This raises potential liability issues.**

*DEQ Response to Preliminary Statement:*

*DEQ has sought to designate NDZs in waters that do not meet Virginia Water Quality Standards for shellfish consumption. The shellfish condemnations in Westmoreland County waters are based on a large body of data stemming from Virginia Department of Health shoreline surveys. See, <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm> for most recent surveys.*

*DEQ determined that adequate pump outs exist, using EPA guidance. When applying EPA's guidance, the application included an additional margin of safety by rounding-up the calculated number of necessary pump outs. Based on boat populations, the EPA method yielded a requirement of 1.11 pump outs. The application rounded-up this result to 2 pump outs to serve the estimated 75 boats needing pump out facilities.*

Neale Comment:

**Information Specific to the Petition**

1. The Virginia Code Section 62.1-44.33 cited and relied upon by DEQ is incorrect as cited and does not include recent amendments.

*DEQ Response to Preliminary Statement:*

*Mr. Neale,*

*Thank you for recognizing this recent change. Effective July 1, 2011 62.1-44.33 was reworded with more general language requiring a physical barrier to prevent a sewage discharge while a vessel is in an NDZ. It also updates the language to more accurately reflect DEQ's current practice of seeking NDZ designation to improve impaired waters. Note that the draft application is satisfactory, because it was public noticed prior to the effective date of the change. DEQ intends to notify EPA of the changes when submitting the applications.*

2. There is not an adequate number of pumpouts in the area. 33 USC 1332 (f) (3) states inter alia: "... except that no such prohibition shall apply until the Administrator determines that adequate facilities for the safe and sanitary removal and treatment of sewage from **all** vessels are reasonably available for such water to which such prohibition would apply."

3. Many boats will be unable to access the few pumpouts in the designated waters. Many facilities listed have no dump stations, which are necessary for most commercial seafood harvesting boats. Many boats will have to travel great distances to obtain pumpouts or dumps, in the open and potentially difficult waters of the Potomac. Many of the facilities listed have very shallow water controlling their approach depths, rendering it impossible for larger boats to access listed facilities. When boats with holding tanks need a pumpout or dump and are unable to obtain one, as will be the fact should this petition be granted, the result will be increased dumping of large amounts of raw sewage from holding tanks into the water. See charts and alleged facility designations in the application for proof of this.

*DEQ Response to 2 and 3:*

*Nationwide data suggest that the EPA formula to determine adequate pump out availability does generally provide for adequate pump outs in NDZs.*

*EPA surveyed 958 boaters during 2003 to evaluate NDZs across the United States. When asked if they had trouble using a pump out during the 2003 boating season, the reply included the following: 9% said "Yes", 74% said "No", and 17% said they "did not attempt to use a pump out." When asked if they had trouble using a pump out the last time they were in an NDZ the reply included the following: 3% said "Yes", 70% said "No", and 27% said they "did not try to use a pump out the last time they were in an NDZ." (Source: Final No Discharge Zone Evaluation, 2004. See, <http://water.epa.gov/polwaste/vwd/ndzdocument.cfm>)*

*In order to designate only the most enforceable and practical No Discharge Zones, DEQ and the Northern Neck Planning District Commission (NNPDC) removed Popes Creek from the application prior to the public notice of the draft. This was done because it does not provide a pump out within the water body, and it is relatively difficult to navigate at the mouth.*

*DEQ believes any perceived shortage of dump stations for commercial seafood harvesting boats is immaterial to designation of NDZs, because untreated sewage must not be discharged under Section 312 of the Clean Water Act regardless of NDZ designation. There continue to be environmentally acceptable and legal alternatives to dump station disposal, especially for vessels making day trips.*

*The Westmoreland County NDZ application considers depth at each pump out and dump station facility. Facilities in Westmoreland County typically exhibit 6 to 8 foot depth. The exception, Colonial Beach Yacht Center with a 5 foot depth, is a short distance to a non-NDZ area and to another marina with an approach depth of 8 feet.*

*Any facility with a shallow approach depth exhibits a depth comparable to the surrounding water body. Therefore, larger vessels will not use the waters surrounding these marinas. Larger vessels will be in the main stem rivers or in deeper water bodies.*

Neale Comment:

4. There is strong public opposition to the petition. DEQ fails to admit that the Northern Neck Planning District Commission upon which it relies for public support is not a governmental agency, has no authority to speak for citizens and was paid by DEQ \$125,000.00 of Federal Stimulus funds to support the petition. DEQ has waged a campaign of disinformation to generate purported support.

*DEQ Response to 4:*

*Public comments have been submitted in support of and against NDZs in Westmoreland County. Four comments were submitted in support of the NDZ application for Westmoreland County. Four comments were submitted against the NDZ application.*

*DEQ contracted the NNPDC to prepare applications for NDZ designations in the four counties, because the NNPDC could impart local knowledge and provide sufficient personnel and expertise to the project. DEQ's Office of Watershed Programs routinely contracts with educational institutions, Planning District Commissions, and private consulting firms to complete projects when contracting allows for optimal use of expertise and resources.*

*A Planning District Commission is a political subdivision of the Commonwealth chartered under the Regional Cooperation Act by the local government of each planning district. The purpose of Planning District Commissions is set out in the Code of Virginia, §15.2-4207, which in part states, "It is the purpose of the planning district commission to encourage and facilitate local government cooperation and state-local cooperation in addressing on a regional basis problems of greater than local significance."*

Neale Comment:

5. DEQ has flagrantly ignored § 62.1-44.33 of the Code of Virginia, as amended, which only authorizes NDZ petitions of tidal creeks and provides that a petition for any creek be premised upon a finding that said action will improve the impairment of said creek. DEQ is proceeding against rivers, including waters that, according to DEQ's impairment maps, are not impaired. Neale DEQ makes no factual statements and offers no proof that said NDZ designation will improve the impairment of any that are.

*DEQ Response to 5:*

*The terms "tributary", "tidal creek" and "river" are all used interchangeably in the Code of Virginia to represent the areal extent of tidal influence for certain water bodies. The terms creek and river are used interchangeably in the Code and in mapping. For example certain named creeks, are designated as Scenic Rivers in §10.1-400 (e.g. Goose Creek and Catoctin Creek). The Virginia Code (See, § [10.1-400](#). Definitions) defines "River" as "a flowing body of water, or a section or portion thereof".*

*DEQ is directed by the Code of Virginia to premise NDZ designations on improvement of impaired tidal creeks. DEQ's program is primarily premised on addressing tidally influenced areas where water quality is impaired. However, NDZs are not limited to the boundaries of the impairment by the Code of Virginia or Section 312 of the Clean Water Act. Federal guidelines also allow States to designate NDZs under the Clean Water if any State determines that the protection and enhancement of the quality of some or all of the waters within such State require greater environmental protection.*

Neale Comment:

6. DEQ erroneously states in its petition, with no documentation or proof, that Type 1 MSDs add chemicals to the water and that boaters put chemicals into them. When requested to provide in writing brands of Type 1 MSDs that do this, they could not do so. In fact, no Type 1 adds chemicals to the water and boaters do not use these or other chemicals with Type 1 devices. There is no need to do so because they treat on a flush by flush basis and to do so would harm the devices. However boaters do frequently add chemicals, including formaldehyde, to holding tanks to control smell and other issues. These chemicals are dumped into the water when pumpouts aren't available and dumped into the ground water when they are. But this is the only method that DEQ wants to use.

Holding tanks create dangerous gasses including hydrogen sulfide which has been found by OSHA to be very dangerous. See attached OSHA Fact sheet.

*DEQ Response to 6:*

*To clarify, it is common for boaters to use additives for holding tanks and sanitation piping, not Type I and II MSDs. Holding tanks are a separate issue from Type I and II MSDs irrespective of the brand.*

*Information related to treatment efficiency, nutrients, and additional pollutants is from the EPA "Evaluation of Improved Type I Marine Sanitation Devices-Performance Evaluation Report" published in January 2010, and the Wildlife and Sport Fish Restoration Program Toolkit (by the US Fish and Wildlife Service). In its summary of the Clean Vessel Act, the Tool kit states, "Chemical additives such as chlorine and formaldehyde are used to disinfect or control odors of on-board sewage. There is little indication that these chemicals have any harmful effects on the environment. The holding tank chemicals in use today are generally biodegradable and, if even marginally diluted, have little effect on treatment systems. No heavy metals or other severe, lingering toxics can be expected. However, some discussion of possible problems should be mentioned here. Of the two major disinfectant chemicals used-chlorine and formaldehyde- only chlorine has been shown to be toxic in the aquatic environment. While formaldehyde is considered a toxic substance, it is completely miscible in water and is readily degradable. While a direct link between MSD holding tank disinfectants and effects on the environment has not been documented, the presence of these chemicals in sufficient concentrations may be of concern (JRB Associates, 1981). Use of these chemicals as directed by the manufacturer should not result in problems.*

*However, since the amounts of chemicals added are controlled by the boat owner or operator, excess use may occur."*

*DEQ does not dispute the need to be diligent and safe in proximity to Hydrogen Sulfide gas, especially if working in unventilated areas.*

Neale Comment:

7. This petition would reduce, from two to one, the methodology available to boaters for handling sewage. The one to be outlawed in designated waters uses advanced technology rather than dumping and is the most effective. The most commonly used Type 1 device, the Electro Scan, was tested by the EPA and its effluent was found to be cleaner than the water usually around the boat. These findings showed a reduction in FCU to almost nonexistent levels and a reduction in BOD to levels, as quantified in ambient waters, to insignificant levels. DEQ has knowingly and misleadingly misrepresented this test. See full EPA test findings at [www.epa.gov/nrmrl/pubs/600r10008/600r10008.pdf](http://www.epa.gov/nrmrl/pubs/600r10008/600r10008.pdf) . See also attached analyses entitled: **Performance of the Electro Scan As Demonstrated by EPA Test Project Number 0214.00.020, EPA Test Table 4.1, and Executive Summary, unsanitized, of EPA test.**

This test stated that a product, Thermo Pure, performed less than satisfactory. Neither I nor any other boater with whom I have spoken have ever seen such product in use and a survey of the major marine retail catalogues shows that it is not listed therein for sale. This product is not relevant to this determination.

*DEQ Response to 7:*

*DEQ understands that holding tanks can be retrofitted for high treatment systems such as Electro Scan MSDs. Because NDZs are only applicable in limited areas usage of MSD technology is supported by DEQ and may be used in all non-NDZ waters. DEQ believes that management of sensitive tidal waters through the implementation of NDZs will help balance multiple uses of the water bodies in question and ultimately improve water quality. DEQ acknowledges that some MSDs may emit only low levels of bacteria. While some devices are more environmentally protective than others, the Federal law does not allow states to exempt those more protective devices for use in NDZs.*

*Design, operation, maintenance and salinity affect performance and all MSDs are not equal in performance. Direct depositions of bacteria and nutrients have a more immediate impact on water quality in sensitive shellfish resource areas. DEQ acknowledges that type I and II MSDs are required to discharge effluent that generally meets the water quality standard for recreation. However, this still exceeds the water quality standard for shellfish consumption. DEQ is aware of the EPA study in 2007, which determined that the vast majority of effluent discharged from an Electro Scan MSD had low levels of fecal coliform bacteria.*

Neale Comment:

8. DEQ was asked to provide, over signature, information upon which it relied to support its general allegations. DEQ did not provide information, instead supplying assumptions and deliberately evasive statements, with no signature of person(s) responsible. Some of the responses are so obviously evasive and erroneous that intent to misinform must be assumed. See attached **Information Request and DEQ Response: Analysis**

*DEQ Response to 8:*

*Thank you for your follow-up questions. DEQ has addressed your questions in the attached document titled, "DEQ Response to Mr. Neale's Information Request/Response Analysis July, 2011." Additional clarifications and enhancements have been inserted into the document.*

Neale Comment:

9. Many areas (such as in New England) that were designated NDZ years ago now have shellfish warnings posted for periods of heavy boating warning to avoid taking shellfish because of pollution from those boats which have only holding tanks and cannot use Type 1 MSDs. The NDZ is a failed solution. These instances are documented in relevant USCG Notices to Mariners.

*DEQ Response to 9:*

*In Virginia and elsewhere, administrative closures of shellfish beds are ongoing in the vicinity of marinas where pollution sources may unpredictably contaminate growing areas and adjacent to sewage treatment plant outfalls. Marinas may be a pollution source due to gray water and petroleum entering the water, in addition to bacteria sources.*

*DEQ recognizes that discharges of vessel sewage are not the sole source of shellfish condemnations. It appears that scientists in New England still view NDZ designations as a useful tool. See, <http://www.gpo.gov/fdsys/pkg/FR-2011-07-06/html/2011-16879.htm> for a public notice of a newly proposed NDZ (aka NDA) in Massachusetts.*

*DEQ discussed the comments regarding New England NDZs with Ann Rodney, EPA contact for NDZs in New England. Ms. Rodney reports that, similar to Virginia, buffers are in place around marinas in New England where shellfishing is prohibited. These buffers are in place due to shellfish sanitation guidelines, which do not change irrespective of NDZ designations. Ms. Rodney reports that NDZs are not a failed solution in New England. She states that there is no guarantee that MSDs are working properly because there is no monitoring of these devices while in use. She also stated that many older vessels still have their original MSD on board, and are two to three decades old. Ms. Rodney was not aware of any recent shellfish closures within NDZs, which were directly attributed to boats using holding tanks.*

*Other references cite shellfish closures in New England in recent years as being due to the following: one expansive closure due to bacteria from an extraordinary rainfall/runoff event; multiple closures due to toxins from algal blooms especially red tide; and multiple conservation closures implemented by municipalities to protect shellfish resources from over-harvest. DEQ can find no information linking recent shellfish closures in New England to high bacteria loads in NDZs.*

References:

[http://www.seafoodsource.com/newsarticledetail.aspx?id=616;](http://www.seafoodsource.com/newsarticledetail.aspx?id=616)  
[http://www.cop.noaa.gov/news/fs/ne\\_hab\\_200505.aspx\)](http://www.cop.noaa.gov/news/fs/ne_hab_200505.aspx)  
<http://www.mainewardenassociation.org/id24.html>  
<http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/ucm046988.htm>

Neale Comment:

10. This petition, by its own express terms, only “assumes” that pollution in the affected waters comes from boaters. It offers no evidence other than *assumptions* and DEQ failed to provide basis in fact for its assumptions when requested in writing.

11. DEA [sic, recte DEQ] does not address pollution sources from shore although it acknowledges they exist. Most of the creeks that EPA considers to be impaired have low lying shorelines with many residential dwellings and old septic systems.

*DEQ Response to 10 & 11:*

*DEQ acknowledges that NDZs are just one tool for overall watershed stewardship. An estimated 5,262 vessels utilize the Westmoreland County tidal waters. DEQ believes that management of sensitive tidal waters through the implementation of NDZs will help balance multiple uses of the water bodies in question and ultimately improve water quality.*

*Pollution budgets (aka TMDLs) have been developed for nine watersheds within Westmoreland County. The TMDLs are available online. See, <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> and search by the water body name in Table 1 to review the full TMDL report. Bacteria source tracking employed in TMDL development identifies human waste in these watersheds. Boats are one source of human waste. Working to eliminate boat discharges as a potential source of pollution is expected to improve water quality and allow stakeholders to focus on land-based pollution sources. Vessel pollution is a direct source of fecal material including bacteria, nitrogen, phosphorus and biochemical oxygen demand to the water body, in or near oyster grounds and/or surface or bottom aquaculture activities. Such direct deposit does not undergo the level of bacterial die-off that land based non-point source (NPS) bacterial loads undergo. This relationship is consistent in all fate and transport bacteria models. The parallel is the impact of cattle direct deposition in the stream vs. land deposition and transport.*

*DEQ, the Department of Conservation and Recreation, as well as local governments, are actively working across the Commonwealth to address onshore sources. The Virginia Department of Health performs routine shoreline surveys, which report and address on shore sources. See, <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm#Survey>*

Neale Comment:

12. A direct consequence of this and other conduct of DEQ is to discourage public purchase and development of technology that provides a better solution than the outhouse technology proposed by DEQ.

*DEQ Response to 12:*

*DEQ does not discourage MSD manufacturers to continue to development of MSD technology. Engineers can innovate and accommodate NDZs by developing hybrid MSDs that can provide immediate treatment and immediate discharge in Non-NDZ areas, but can hold waste and delay treated discharges when the vessel is in an NDZ.*

Neale Comment:

### **Information Regarding NDZs in General**

1. An NDZ deprives the boater of the most effective way to avoid discharging sewage. That is a certified working onboard treatment device.

2. There are far more malfunction opportunities in a pumpout system than with a certified onboard treatment device.
3. It is already illegal to discharge sewage into our waters.
4. No Discharge Zones (NDZ) generally cause more, not less pollution.
5. For several years DEQ has waged a campaign to mislead the public. News media and the public have been repeatedly given misleading information by DEQ as to facts and issues.
6. There are now two methods of dealing with sewage from boats: EPA certified onboard treatment devices and pumpouts. An NDZ eliminates one of those methods in the area. This causes more pollution because:
  - a. Some boats cannot access pumpouts. Reasons include lack of availability, pumpout breakdowns, insufficient room to navigate to pumpouts, not enough water depth, bad weather, distance.
  - b. Most boats with toilets experience times when the holding tank is full and there is no pumpout available.
  - c. In both the above cases, a properly working certified onboard treatment device allows the boater to discharge treated effluent rather than illegally dump sewage.
  - d. A properly working certified onboard treatment device treats sewage as well as or better than many public treatment centers.
  - e. Pumpouts around the water often dump large concentrated amounts of sewage into septic tanks near the water.
  - f. That sewage often contains chemicals that must be added to the boat tank to stabilize smell and gas buildup. Those chemicals are injurious to septic tanks and surrounding waters into which they leach.

*DEQ Response: The summary of issues has been addressed in the responses contained in this document.*

**DEQ Response to Mr. Neale's Information Request/Response Analysis  
August, 2011**

Note: Comments submitted for the Lancaster County NDZ application by Mr. Tom Neale for Boaters for Clean Waters are listed below. DEQ responded to Mr. Neale's public comments for the Lancaster County NDZ application and Mr. Neale provided follow-up questions and statements, which were submitted with public comments for the Westmoreland and Northumberland County NDZ applications. Subsequent pages provide the initial comment by Mr. Neale, the initial DEQ response, Mr. Neale's follow-up question/statement, and DEQ's second response.

Initial Public Comment by Mr. Neale:

1. Upon what facts to you base the following statement? Provide the specific source for said facts. "While terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore has a larger impact." (From 1.7 of Petition)

Initial DEQ Response:

- 1) *Vessel pollution is a direct source of fecal material including bacteria, viruses, parasites, nitrogen, phosphorus and biochemical oxygen demand to the waterbody, in or near oyster grounds and/or surface or bottom aquaculture activities. Such direct deposit does not undergo the level of bacterial die-off that land based non-point source (NPS) bacterial loads undergo. This relationship is consistent in all fate and transport bacteria models. The parallel is the impact of cattle direct deposition in the stream vs. land deposition and transport.*

Mr. Neale's follow-up question or statement:

**The question called for facts. The answer provides only theory.**

August, 2011 DEQ's follow-up response:

Mr. Neale,

The application actually states, "While terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore may have a more immediate impact on local water quality". The facts supporting this statement include the following: 1) Vessels are able to discharge treated sewage directly over shellfish beds into an anaerobic environment (no reference needed), 2) Such direct deposition does not undergo the level of bacterial die-off that land based non-point source (NPS) bacterial loads undergo. Distance provides time for bacteria die-off and nutrient assimilation (Chow et al. 1972). Aerobic environments allow for more efficient assimilation and treatment of sewage (Eckenfelder et al.) due to the greater energy available in aerobic environments for biochemical mechanisms to breakdown waste.

Chow, Ven T., Rolf Eliassen, and Ray K. Lindley (eds). 1972. *Wastewater Engineering: collection, treatment, and disposal*. McGraw-Hill Book Company, New York. 782 pgs. (See pages 390-391 regarding the kinetics of biological growth and longer treatment times.)

Eckenfelder, W.W., J.B. Patoczka, and G.W. Pulliam. *Anaerobic Versus Aerobic Treatment in the U.S.A. A Ware Incorporated*. See, <http://www.google.com/url?sa=t&source=web&cd=1&ved=0CBUQfjAA&url=http%3A%2F%2Fwww.patoczka.net%2FJurek%2520Pages%2FPapers%2FAnaerobic%2520vs%2520Aerobic%2520Treatment.pdf&ei=tFMXTvfoEMvOgAerx6EK&usg=AFQjCNGK4e1Hel6TR-HX8jzpBnoVaaDE3Q>

Initial Public Comment by Mr. Neale:

2. What steps are being taken to stop terrestrial pollution which is a threat to these marine natural resources, as you say in 1.7 of Petition.

Initial DEQ Response:

- 2) DEQ developed TMDLs ( approved by EPA and SWCB) for shellfish impairments in Lancaster County for Tabbs, Dymer, Antipoison, Carter, Greenvale, Beach, Lancaster, Mulberry, Deep, Oyster and Mosquito Creeks and the Corrotoman River watershed. These TMDL studies may be viewed on the DEQ TMDL website <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> by entering Lancaster in the City/County search tool. A pollution budget was developed for each impairment. Local Greenvale Creek stakeholders developed an Implementation Plan (IP) for that shellfish impairment that, when implemented, will lead to bacterial reductions. IPs for other impaired waters have not yet been completed. The Clean Marina Program is active in the county, and the Virginia Department of Health (VDH) monitors approximately 150 shellfish bacterial stations in Lancaster County monthly. In addition, shoreline surveys are revised every 5-8 years.

Mr. Neale's follow-up question or statement:

**Answer gives only one concrete step taken for one creek to curb land pollution and that step is only a plan.**

August, 2011 DEQ's follow-up response:

Mr. Neale,

Pollution budgets (aka TMDLs) have been developed for multiple watersheds within Lancaster, Northumberland, Westmoreland counties. The TMDLs are available online. See, <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> and search by the water body name in Table 1 to review the full TMDL report. DEQ, the Department of Conservation and Recreation, as well as local governments, are actively working across the Commonwealth to address onshore sources such as storm water. The Virginia Department of Health performs routine shoreline surveys, which report and address on shore sources. See, <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm#Survey>

Initial Public Comment by Mr. Neale:

3. Upon what facts to you base the following statement? Provide the specific source for said facts. "Bottlenose dolphins utilize these waters, as well as Harbor Porpoises,....Kemps-Ridley, loggerhead and green sea turtles" utilize these waters. (From 2.2 of the petition.)

Initial DEQ Response:

- 3) *The source of this information is the Virginia Department of Game and Inland fisheries: -* [http://vafwis.org/fwis/?Menu=Home.\\_\\_\\_\\_By+Place%20Name](http://vafwis.org/fwis/?Menu=Home.____By+Place%20Name)

Mr. Neale's follow-up question or statement:

**Question asks for facts. The web site only gives "potential" habitats or "likely" habitats with no specific observation references.**

August, 2011 DEQ's follow-up response:

Mr. Neale,

[\*The Marine Mammals Of Virginia\*](#) by Blaylock, Virginia Institute of Marine Science and [\*Sea Turtles in Virginia\*](#) by the Virginia Department of Game and Inland Fisheries. Field guides such as these and the VAFWIS cited above are developed based on site-specific collections or occurrences. Habitat data at locations where species are collected may also be used to predict other possible locations of the species.

Initial Public Comment by Mr. Neale:

4. Upon what facts do you base the following statement? Provide the specific source for said statement and provide the brand name(s) of Type 1 MSDs to which you are referring.. "In addition, the average marine sanitation device provides minimal, if any, treatment for chemical or biological oxygen demand, phosphorus, or nitrogen." (From 2.3 of the petition.)
5. What is your definition, including brand names, of "the average marine sanitation device?"
6. What specific brand(s) of Type 1 MSDs discharge formaldehyde into the water?
7. What specific brand(s) of Type 1 MSDs discharge the pollutants to which you refer in the following statement, and in what amounts. "Depending on the type of MSD, wastewater discharges from marine vessels may also contain additional pollutants, such as protozoa (e.g., *giardia*), viruses (e.g., *norovirus*), and deodorants or sanitizing chemicals (e.g., formaldehyde) that are potentially harmful to humans, wildlife, and the environment." (From 2.3 of the Petition.)

Initial DEQ Response:

4-7) The majority of the literature and marine sanitation device (MSD) studies focus on the two major brands of equipment: Electro Scan and Thermopure-2. It is common for users to supplement types I, II, and III MSDs with ammonia or formaldehyde based deodorizers/disinfectants as additional treatment. Information related to treatment efficiency, nutrients, and additional pollutants is from the EPA "Evaluation of Improved Type I Marine Sanitation Devices-Performance Evaluation Report" published in January 2010, and the Fish and Wildlife Service document found at: [HTTP://wsfrprograms.fws.gov/subpages/tookitfiles/cv](http://wsfrprograms.fws.gov/subpages/tookitfiles/cv).

Mr. Neale's follow-up question or statement:

**The question asks for the specific brands to which you refer. You give none. The website cannot be found. The EPA report published does not state that information. The fact that "studies focus" on the Electro Scan and the Thermopure-2 is not a statement that either brand emits chemicals or does the other things that you claim. Neither adds chemicals or formaldehyde to the waters. Users do not place these chemicals or others in the units. To do so would void the warranty and serve no purpose. Users on holding tanks, which you advocate to the exclusion of Type 1s do add these chemicals for smell reduction and ferment control during storage.**

August, 2011 DEQ's follow-up response:

The Fish and Wildlife Service document is attached.

DEQ acknowledges that the concentrations of constituents in MSD discharges likely vary widely among brands, makes, models, maintenance, and operators. To clarify, it is common for boaters to use additives for holding tanks and sanitation piping, not Type I and II MSDs. Holding tanks are a separate issue from Type I and II MSDs irrespective of the brand. While it is illegal to discharge raw waste per the Clean Water Act, NDZs elevate the message to the public that dumping is illegal.

DEQ does not have data relating to specific MSD brands other than the previously cited EPA report. DEQ is proposing NDZs as one tool to address impairments in tidal watersheds. DEQ cites the study of the Electro Scan and the Thermopure-2 as an example of how an otherwise highly effective MSD can discharge in excess of Water Quality Standards due to malfunction or operator error.

The term, "the average marine sanitation device" used in the Northumberland application refers to MSDs that comply with the U.S. Coast Guard design specifications for treatment.

Initial Public Comment by Mr. Neale:

8. State the number of those units in use in the covered waters and state the basis for your conclusion.

Initial DEQ Response:

8) The number of MSDs in Lancaster County waterbodies is an estimate. The Department of Environmental Quality (DCQ) relies on the EPA formula (current NDZ Guidance) for calculating the estimated number of MSDs.

Mr. Neale's follow-up question or statement:

**An estimate should not be used to facilitate the extinction of one of the two ways of dealing with onboard sewage. EPA formulas produce estimates only and are not fact. Outlawing technology dealing with onboard sewage without facts can increase pollution and result in erroneous assessment of adequate pumpouts.**

August, 2011 DEQ's follow-up response:

The Code of Virginia at §62.1-44.33(B) requires, "an affirmative determination from the EPA that there are adequate facilities for the removal of sewage from vessels". Using the formula enables EPA to make this determination as required by 33 U.S.C. § 1322(f)(3).

DEQ recognizes that overboard discharge of untreated sewage, a Clean Water Act violation, may currently occur throughout the Chesapeake Bay region. These violations can occur irrespective of NDZ designation. DEQ believes that heightened enforcement capabilities, due to across-the-board enforcement of the NDZ for all boats, will deter illegal dumping of onboard sewage proximal to sensitive shellfish beds.

NDZs designated in Virginia in recent years have resulted in an increased number of pump-outs. In the Lynnhaven River NDZ, the Cavalier Golf and Yacht Club reported 154 pump-outs in 2006 (pre-NDZ) and 299 pump-outs in 2007 (post-NDZ). In the Deltaville area, three major marinas report a doubling of pump-outs in the first year of NDZ designation in Broad and Jackson creeks and Fishing Bay. DEQ acknowledges that complying with NDZs can require additional planning by boaters. DEQ believes that management of sensitive tidal waters through the implementation of NDZs will help balance multiple uses of the water bodies in question and ultimately improve water quality.

Initial Public Comment by Mr. Neale:

9. With regard to the following statement “While terrestrial pollution is a threat to these marine natural resources, vessel pollution is direct and proximate to oyster grounds, and therefore may have a more immediate impact on local water quality. Trends over the past decade have shown that bacteria levels in these waters are increasing, resulting in expanded shellfish condemnations.” what data proves that vessel pollution actually does rather than “may” have a more immediate impact. What is the increase in the number of residential homes along the shores during “past decade” to which you refer. (Statement from 2.4 of the petition)

Initial DEQ Response:

9) See the response to questions #1 & 2. The approved TMDLs draw the conclusion that boat discharges are a potential bacteria source in these impaired waters. VDH long term monthly data, VDH shoreline surveys, and local land use and population data were used in determining the pollution budgets.

Mr. Neale’s follow-up question or statement:

**See above analysis of your response to questions 1 & 2. You provide no data that boat pollution has caused increased water impairment and you fail to answer the question as to increased number of homes on the shores in the time period you reference.**

August, 2011 DEQ’s follow-up response:

Although shellfish condemnations have expanded, DEQ does not have data relating to vessel discharges or MSD brands. DEQ is proposing NDZs as one tool to address impairments in tidal watersheds. Boats are one source of human waste. Working to eliminate boat discharges as a potential source of pollution within shellfish condemnation areas is expected to improve water quality and allow stakeholders to focus on land-based pollution sources.

The Virginia Department of Game and Inland Fisheries reports increased state boating registrations in Northern Neck counties from 1997 to 2007. Westmoreland, Northumberland, and Lancaster statistics are provided below.

### Number of Active Boating Registrations by Year on December 31

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Westmoreland	3,490	3,509	3,495	3,484	3,545	3,630	3,645	3,701	3,832	3,916	4,026
Northumberland	4,626	4,625	4,758	4,842	4,934	5,126	5,180	5,253	5,430	5,568	5,725
Lancaster	3,039	3,082	3,128	3,192	3,233	3,324	3,352	3,401	3,480	3,544	3,601

Source: [www.dgif.virginia.gov/boating/2007-accident-report.pdf](http://www.dgif.virginia.gov/boating/2007-accident-report.pdf)

DEQ does not have specific data documenting the increased number of homes on the shorelines of Westmoreland, Lancaster, and Northumberland counties. DEQ acknowledges that shoreline development likely also contributes to water quality degradation. The change in number of housing units for a county from 2000 to 2009 is available through the U.S. Census. For example, in Northumberland County 8,057 housing units were reported in 2000 and

9,511 housing units were reported in 2009. In Lancaster County 7,190 housing units were reported in 2000 and 7,372 housing units were reported in 2009. See, <http://quickfacts.census.gov/qfd/states/51/51133.html> to look up more Northern Neck statistics.

Pollution budgets (aka TMDLs) have been developed for multiple watersheds within Westmoreland, Lancaster, and Northumberland counties. The TMDLs are available online. See, <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> and search by the water body name or county name in Table 1 to review the full TMDL report. These reports include an analysis of point source and non-point source pollution. The reports rely on data from Virginia Department of health shoreline surveys. See, <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm>

Initial Public Comment by Mr. Neale:

10. What percentage of fecal bacteria referred to in statement below came from discharge from boats? Upon what facts to you base the following statement? Provide the specific source for said facts.: “Bacterial source-tracking (BST) data collected as a component of the Shellfish TMDLs for the subject waters suggest that, averaged annually, approximately between 3% (Taylor Creek) and 66% percent (Antipoison and Davenport Creeks) of the fecal bacteria in these waters were of human origin. Other sources include wildlife, pets, and livestock. (From 2.4 of the Petition)

Initial DEQ Response:

10) *Bacteria source tracking (BST) human percent contribution of the magnitude in the 66 percent range for Antipoison / Davenport Creeks or 32 percent for the East Branch Corrotoman River indicates that more than one bacteria source is present in the impairment. The likely sources are failed septic systems, and boat discharges. The 2006 VDH Sanitary Survey documented only 2 septic failures and 6 no facilities (straight pipes) in the East Branch Corrotoman River watershed. None of the septic failures and only two of the no facilities were within a half-mile of tidal water. Boat discharges are one logical source of the human component in the Corrotoman River. Refer to the BST portion of the TMDLs for Antipoison Creek and Corrotoman River referenced in the website link in response #2.*

Mr. Neale's follow-up question or statement:

**You fail to provide percentage that came from boats.**

August, 2011 DEQ's follow-up response:

*This statistic is not available to DEQ. Boat discharges are one source of human sewage.*

Initial Public Comment by Mr. Neale:

11. What is the percentage of human origin fecal bacteria that is found in each of the other designated bodies of water from bacterial source tracking?
12. Who performs what tests in your bacterial source tracking determinations? Provide copies of said test results and procedure and names and contact information for persons conducting said tests .

Initial DEQ Response:

11) *Refer to in the website link in response #2. Select the final report for each TMDL and refer to the BST sections of the reports. Other than Taylor and Antipoison Creeks, average BST human percentages in Shellfish Use Impairments in Lancaster County were 65% in Indian Creek, 26% in Dwyer Creek, 18% in Tabbs Creek, 37% in West Branch Carter Creek, 18% in Central Branch Carter Creek, 20% in East Branch Carter Creek, 33% in West Branch Corrotoman River, 29% in Senior Creek, 24% in Ewells Prong, 27% in Millenbeck Prong, 25% in Hills Creek, 26% in Bells Creek, 32% in East Branch Corrotoman River, 16% in Myer Creek, 20% in Greenvale Creek, 14% in Beach Creek, 16% in Lancaster Creek, 18% in Mulberry Creek, 13% in Deep Creek, 54% in Oyster Creek, and 62% in Mosquito Creek. BST is one current technology for estimating differentiation of sources. DEQ used*

*this along with VDH shoreline surveys, land use and population data for determining pollution budgets in the TMDLs.*

12) *The BST samples were collected, under the supervision of Rob Whittman, who worked for VDH at that time. MapTech, Inc. performed the BST analysis for bacterial impairments. Contact Phillip McClellan, president, 1715 Pratt Drive, Blacksburg, VA 24060, phone 540-961-7864.*

Mr. Neale's follow-up question or statement:

**You fail to provide test results and procedure.**

*August, 2011 DEQ's follow-up response:*

*Mr. Neale,*

*DEQ provides this data on a side bar of the TMDL homepage (<http://www.deq.virginia.gov/tmdl/homepage.html>). See, [BST Analyses to support Virginia's TMDLs](#). The previously named individuals at MapTech, Inc. are also good resources to gain a full understanding of the BST analysis procedures.*

*You can follow the links below for the data and procedure.*

- o [/032009bst.pdf](#)
- o [/082008bst.pdf](#)
- o [/092007\\_phase5bst.pdf](#)
- o [/092007\\_phase6bst.pdf](#)
- o [/102006bst.pdf](#)
- o [/122005bst.pdf](#)
- o [/122006bst.pdf](#)

**Initial Public Comment by Mr. Neale:**

13. What specific steps has DEQ or any other agency (and name said agency) of the Commonwealth taken to stop the ground source pollution in the areas in which you seek NDZ designation?

Initial DEQ Response:

13) *See response #2.*

Mr. Neale's follow-up question or statement:

**See above Analysis of response # 2.**

*August, 2011 DEQ's follow-up response:*

*Mr. Neale,*

*Pollution budgets (aka TMDLs) have been developed for multiple watersheds within Lancaster, Northumberland, Westmoreland counties. The TMDLs are available online. See, <https://www.deq.virginia.gov/TMDLDataSearch/ReportSearch.aspx> and search by the water body name in Table 1 to review the full TMDL report. DEQ, the Department of Conservation and Recreation, as well as local governments, are actively working across the Commonwealth to address onshore sources such as storm water. The Virginia Department of Health performs routine shoreline surveys, which report and address on shore sources. See, <http://www.vdh.state.va.us/EnvironmentalHealth/Shellfish/closureSurvey/index.htm#Survey>*

**Initial Public Comment by Mr. Neale:**

14. Upon what do you rely in support of your statement, "The Commonwealth of Virginia believes the waters addressed in this application are appropriate candidates for designation as a *No Discharge Zone*." (5 of the petition) Provide names and positions of officials who have said that the Commonwealth of Virginia so believes, provide copies of any documents asserting said beliefs, and times and dates of said statements.

Initial DEQ Response:

14) *See response #2. Also see the Va. Code Section 62.1-44.33, which authorizes the State Water Control Board (SWCB) to pursue the designation of impaired tidal creeks as NDZs.*

Mr. Neale's follow-up question or statement:

**This is totally unresponsive. Further, 62.1-44.33 refers to impaired tidal creeks only (not rivers) and NDZ designation is to be premised on a finding that such would improve the impairment. Also, see above Analysis of response # 2.**

August, 2011 DEQ's follow-up response:

Mr. Neale,

The terms "tributary", "tidal creek" and "river" are all used interchangeably in the Code of Virginia to represent the areal extent of tidal influence for certain water bodies. . The terms creek and river are used interchangeably in the Code and in mapping. For example certain named creeks, are designated as Scenic Rivers in §10.1-400 (e.g. Goose Creek and Catoctin Creek). The Virginia Code (See, § [10.1-400](#). Definitions) defines "River" as "a flowing body of water, or a section or portion thereof".

DEQ is directed by the Code of Virginia to premise NDZ designations on improvement of impaired tidal creeks.

DEQ's program is primarily premised on addressing tidally influenced areas where water quality is impaired.

However, NDZs are not limited to the boundaries of the impairment by the Code of Virginia or Section 312 of the Clean Water Act. Federal guidelines also allow states to designate NDZs under the Clean Water if any State determines that the protection and enhancement of the quality of some or all of the waters within such State require greater environmental protection.

For more information regarding the impairments of water bodies related to the NDZ application in the Northern Neck, please see **The Final 2008 Water Quality Assessment Integrated Report for Virginia** and fact sheets at <http://www.deq.virginia.gov/wqa/ir2008.html#factsheets>

Initial Public Comment by Mr. Neale:

15. Provide full details of any request by Lancaster County for the petition to declare certain Lancaster County waters as NDZ. Including name and position of requesting official(s) and/or authority(s), time of request and copy of any document containing said request.
16. Provide full details of any request by the Northern Neck Planning District Commission for the petition to declare certain Lancaster County waters as NDZ. Including name and position of requesting official(s) and/or authority(s), time of request and copy of any document containing said request.

Initial DEQ Response:

15 & 16) Multiple communications have occurred between county leadership, NNPDC, DCR, VDH, and DEQ. Most NN localities have been supportive but neutral in these efforts. Starting in 2007, three presentations have been given to the Rappahannock River Basin Commission, one to the Board of Supervisor of Westmoreland and Northumberland Counties (April 10, 2008). Concerning Lancaster County, in an email communication between Mr. William Pennell and Jeff Chanat (DEQ), dated February 23, 2009, Mr. Pennell stated "Please know that we will do whatever we can to assist in this project." The communication cites VA GA Bill 1774 and the pursuit of No Discharge Zones in the Northern Neck. Additionally, Mr. Jerry Davis, Executive Director of the NNPDC, has monthly meetings with the County Administrators and has kept them apprised of the regional NDZ effort. No negative communications have been received following those meetings.

Mr. Neale's follow-up question or statement:

**You fail to state that you paid \$125,000 (or more) in Federal Stimulus money to NNPDC, that NNPDC is not a governmental agency and represents on one. Your presentations to various bodies do not constitute an endorsement by any such body. Your presentations have included false and misleading information, including but not limited to statements made by your agent at a Rappahannock River Basin Commission meeting in the September of 2010. The statement that a county is "supportive but neutral" is self contradictory and deliberately deceptive, as is your reference to a 2001 letter from Mr. Pennell who very recently told you, when you asked him for a letter of support, that only the Board of Supervisors could endorse your position. Further you are misleading in that you fail to admit that you called the Chairman of the Lancaster Board of**

**Supervisors and demanded a letter of support from that body and he told you that none was forthcoming unless the board so authorized it and that you'd already had a public hearing which approximately 40 people attended in opposition and that your agents attempted to prevent them from stating their positions.**

*August, 2011 DEQ's follow-up response:*

*DEQ contracted the NNPDC to prepare applications for NDZ designations in the four counties, because the NNPDC could impart local knowledge and provide sufficient personnel and expertise to the project. DEQ's Office of Watershed Programs routinely contracts with educational institutions, Planning District Commissions, and private consulting firms to complete projects when contracting allows for optimal use of expertise and resources. A Planning District Commission is a political subdivision of the Commonwealth chartered under the Regional Cooperation Act by the local government of each planning district. The purpose of Planning District Commissions is set out in the Code of Virginia, §15.2-4207, which in part states, "It is the purpose of the planning district commission to encourage and facilitate local government cooperation and state-local cooperation in addressing on a regional basis problems of greater than local significance."*

*To clarify regarding discussions with Mr. Pennell, Mr. Pennell offered personal support and indicated that the Board of Supervisors had not drafted a formal endorsement.*

*During the Lancaster County public meeting, DEQ attempted to facilitate a discussion to allow exploration of all sides of the proposed NDZ designation. DEQ aimed to provide an equivalent amount of time for each person who wished to speak.*

*For the Lancaster NDZ application, DEQ received numerous public comments from individuals and organizations representing a vast range of perspectives. Comments were submitted by boaters, oyster growers, scientists, and area residents who swim in the water bodies in question. DEQ received 18 written public comments in support of the Lancaster NDZ application and 14 against the application.*

Initial Public Comment by Mr. Neale:

17. Under what statutory or other authority do you petition to have the Eastern and Western Branches of the Corrotoman River declared to be No Discharge Zones.

Initial DEQ Response:

17) *Va. Code Section 62.1-44.33 and the Federal Clean Water Act.*

Mr. Neale's follow-up question or statement:

**Said act refers to impaired tidal creeks only, it requires that an NDZ designation be premised on the fact that such would improve the impairment, and your Mr. David Paylor told Delegate Albert Pollard on February 11, 2011 that DEQ was only going after the shallow headwaters of the Corrotoman branches.**

*August, 2011 DEQ Response:*

*The terms "tributary", "tidal creek and "river" are used interchangeably in portions of the Code of Virginia to represent the areal extent of tidal influence for certain water bodies. The terms creek and river are used interchangeably in the Code and in mapping. For example certain named creeks, are designated as Scenic Rivers in §10.1-400 (e.g. Goose Creek and Catoctin Creek). The Virginia Code (See, § [10.1-400](#). Definitions) defines "River" as "a flowing body of water, or a section or portion thereof".*

*DEQ is directed by the Code of Virginia to premise NDZ designations on improvement of impaired tidal creeks. DEQ's program is primarily premised on addressing tidally influenced areas where water quality is impaired. However, NDZs are not limited to the boundaries of the impairment by the Code of Virginia or Section 312 of the Clean Water Act. Federal guidelines also allow States to designate NDZs under the Clean Water if any State determines that the protection and enhancement of the quality of some or all of the waters within such State require greater environmental protection.*

*Staff is aware of the February 2011, meeting between Mr. Paylor and Delegate Pollard. It is staff understanding that the discussion focused on the eastern and western branches of the Corrotoman as originally described in the Lancaster NDZ application. The Lancaster application only proposes NDZ designation for the eastern and western branches, not the main stem of the Corrotoman. Staff received*

no direction from Director Paylor to modify the proposed NDZ boundaries for the eastern and western branches of the Corrotoman.

There is a lack of clarity over terminology on this issue. DEQ premises NDZ designations on impaired tidal water bodies. Often these water bodies are shallow and slow-flushing, and waste material from onshore and offshore sources cannot be diluted via flushing. These shallow, slow-flushing tidal water bodies are often navigable by motored vessels. A headwater stream or wetland is typically up-gradient from the shallow tidal area and is more typically navigable by canoe, not motored vessels. Headwater streams are predominantly non-tidal.

Figure 1 presents the tidal flushing characterization for the Corrotoman. Figure 2 presents headwater wetlands and streams for the eastern branch of the Corrotoman as an illustration of the headwater concept.

Figure 1. Tidal flushing characterization for the Corrotoman. The Corrotoman is entirely a slow-flushing system.

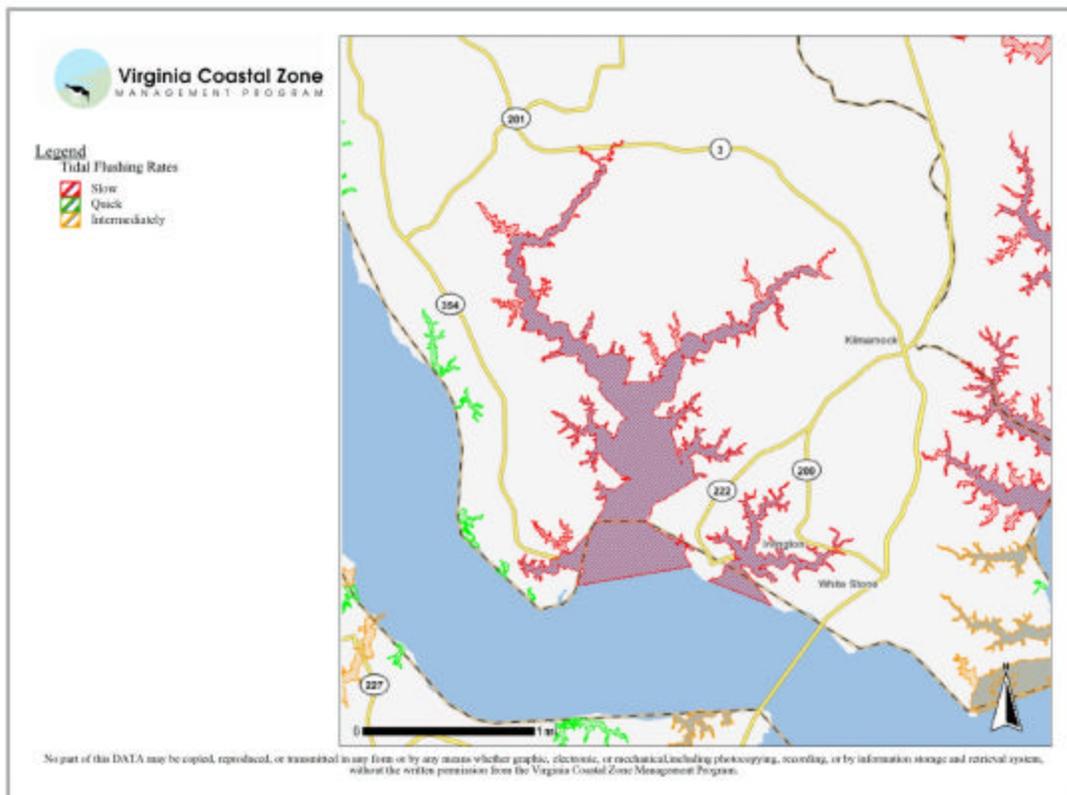
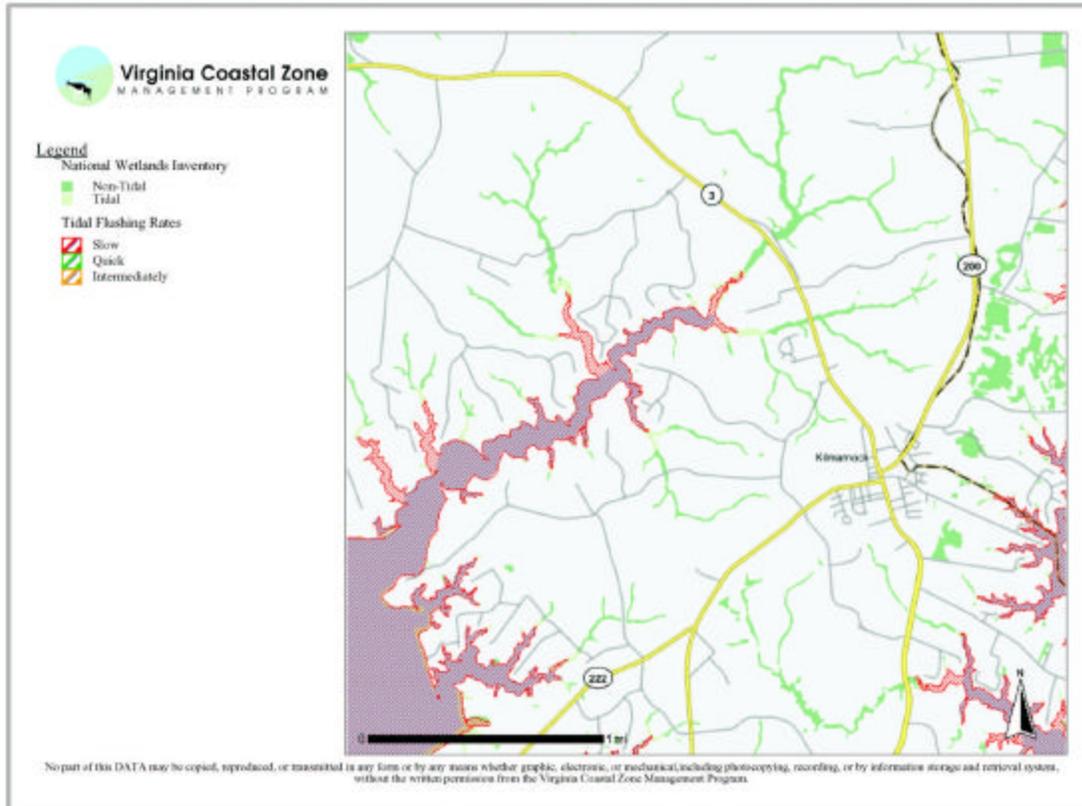


Figure 2. Headwater wetlands and streams for the eastern branch of the Corrotoman. The headwater complexes are shown in green.



Initial Public Comment by Mr. Neale:

18. What is the name of and contact information for the person at EPA to whom you are required to submit your NDZ petition for Lancaster County.

Initial DEQ Response:

18) Mr. Michael Hoffman, US EPA, Region III, 1650 Arch Street, Philadelphia, PA 19103

No follow-up question was submitted by Mr. Neale for question #18.

**Public Comment:**

**Public Comment on Westmoreland County NDZ draft application  
July 15, 2011**

We are in strong support of establishing No Discharge Zones (NDZ) in the proposed Westmoreland county tributaries. In particular, we are interested in improving water quality and protecting our economically viable oyster industry in the Northern Neck.

Generally, we would support NDZ designation in the Westmoreland county Potomac tributaries at the State line because this would provide consistency throughout the State, help to protect all of our marine resources, reduce the opportunity for detrimental algae blooms and reduce the incidence of bacterial accumulation. Additionally, if NDZ's were located at the State line in the Potomac tributaries, then education would be more consistent and less confusing for impacted user groups.

Of particular concern are the Nomini and Lower Machodoc tributaries because of the large numbers of oysters, both private and public, planted in these productive sub-estuaries. Thousands of bushels of seed oysters are planted privately each and every year in both tributaries and, to a lesser degree, seed oysters are planted on public grounds. The presence of these oyster beds represents important economic and ecological services that are being provided to the Commonwealth. Both private leases and public grounds are currently located outside of the proposed NDZ, however these areas must be afforded a layer of protection that is consonant with our Virginia Health Department standards to protect our shellfish resources. We recommend that the currently proposed NDZ lines in the Lower Machodoc and Nomini Creeks should be re-evaluated and extended further toward the mouths of these rivers, preferably to the Virginia State line.

It is important to understanding the ineffectiveness of the marine sanitation device in relation to public health standards. The Virginia Department of Health, Division of Shellfish Sanitation is responsible for determining shellfish ground condemnations and has set strict standards to protect public health that marine sanitation devices are incapable of realizing. This discrepancy that undermines the Health Department's effort to protect our shellfish resource as well as public health is unacceptable. Exacerbating the problem of marine sanitation devices is that nutrients (nitrogen and phosphorous) are not eliminated nor treated during discharge. These elements are responsible for detrimental algal blooms that deprive shellfish as well as other marine organisms of oxygen, potentially leading to an increase in "dead zones".

We recognize the importance of protecting our shellfish resources as well as meeting nutrient reduction goals and improving the overall health of our Commonwealth waterways. One step in the process is implementing strict NDZ lines that will aid in the protection of shellfish resources to benefit businesses in the Northern Neck region as well as continue to provide jobs and bolster our economy. As we continue to work toward full

protection of these shellfish resources, it is important to recognize the need for additional pump-outs in tributaries that are currently void of these facilities. If boaters are unable to utilize pump-out facilities,

then they should follow the suggested NDZ line and only be allowed to discharge in the main stem Potomac River or the main stem Chesapeake Bay.

Respectfully submitted by:  
A.J. Erskine  
Bevans Oyster Company  
Cowart Seafood Corporation  
July 15, 2011

**DEQ Response:**  
Fri 7/15/2011 2:53 PM  
AJ,

Thank you for your comment and references regarding the Westmoreland County NDZ draft application. Your submittal will be incorporated into the final application for submittal to EPA.

Best Regards, Liz

**Liz McKercher**

Watershed Coordinator, Virginia Department of Environmental Quality  
629 East Main Street, Richmond, Virginia 23219 PHONE 804.698.4291 FAX 804.698.4032  
Mailing Address: P.O. Box 1105, Richmond, Virginia 23218

**Public Comment:**  
**REPLY TO:**

Department of Conservation and Recreation  
Tappahannock Regional Office  
P. O. Box 1425  
Tappahannock, VA 22560  
Telephone: (804) 443-1494

July 15, 2011

VA Department of Environmental Quality  
Attn: Ms. Elizabeth McKercher, Watershed Coordinator  
P.O. Box 1105, Richmond, VA 23218

RE: Bonum Creek, Jackson Creek, Gardner Creek, Ragged Point, Branson Cove, Lower Machodoc Creek, Glebe Creek, Cabin Point Creek, Nomini Creek, Poor Jack Creek, Currioman Creek, Cold Harbor Creek, Mattox Creek, Monroe Bay, and Rosier Creek

Dear Ms. McKercher:

The VA DCR Tappahannock Regional Office would like to offer strong support for the designation of No Discharge Zones (NDZs) in the above mentioned creeks, from the Northumberland/Westmoreland County border to the Westmoreland/King George County border.

As most of these creeks are currently designated as impaired for bacterial contamination of shellfish waters, any measures taken to reduce the discharge of bacteria laden boat waste will serve as a benefit towards their restoration. These creeks are also impaired for dissolved oxygen due to excessive nutrients and, like the Potomac River and the Chesapeake Bay, would stand to benefit as well from reduced nutrient pollution.

As expressed in the TMDL study, there are numerous sources of bacteria from terrestrial sources in these watersheds. And despite the lack of a formal implementation plan, best management practices for farmed land and problematic septic systems have been and continue to be used to reduce bacteria and nutrient runoff. The proper management of boat waste is an integral part of protecting these small, shallow tidal coves and the shellfish habitat they provide. A requirement for MSD "treated" boat waste to be pumped out into holding tanks at marinas is just one tool of many that may restore these creeks, providing for safer fisheries and recreation. Efforts must be made to reduce all sources of bacteria entering shellfish growing areas due to the very restrictive water column bacteria standard for shellfish consumption. Even though the contribution of bacteria from boat waste may not compare to the level from other land based runoff sources after rainfall events, the opportunity to reduce human waste to these creeks and the Potomac River will further citizen awareness of the actions we must all take in watershed restoration.

We commend the Northern Neck Planning District Commission for the extensive field work and mapping provided for this application. The document is clear and provides the necessary details for EPA to use in evaluating the ability of a NDZ to work in these areas. As this is the last NDZ application being developed for the Northern Neck, I'd like to suggest that DEQ provide outreach support to local groups and marina owners so that Northern Neck residents and visitors are aware of the NDZ once established in each county. The use of dye tablets, as is done after pump outs in the Lynhaven River watershed, may also be a consideration to assist with enforcement of the NDZ.

Coupled with an educational/outreach effort for local and transient boaters, a NDZ in these areas could have a positive impact to shellfish harvesting and the improved waterquality of these low flushing tidal creeks. Building a stronger community of responsible boaters throughout the region can only be a benefit to the work we do for Chesapeake Bay restoration. The VA DCR Tappahannock Regional Office is pleased to see the NDZ initiative taking place in our region and applaud the efforts of citizens, planners and VA DEQ staff for initiating this process.

Sincerely,

May Sligh  
TMDL Watershed Field Coordinator

Cc: Charlie Lunsford, VA DCR

**DEQ Response:**

Fri 7/15/2011 3:01 PM

May,

Thank you for the comment submittal regarding the Westmoreland County NDZ draft application. Your letter will be incorporated into the final application for submittal to EPA.

Best Regards, Liz

Liz McKercher

Watershed Coordinator, Virginia Department of Environmental Quality

629 East Main Street, Richmond, Virginia 23219 PHONE 804.698.4291 FAX 804.698.4032

Mailing Address: P.O. Box 1105, Richmond, Virginia 23218