Comment Response Document

Regarding the Total Maximum Daily Loads of Fecal Bacteria for the Restricted Shellfish Harvesting Area in Laws Thorofare and Upper Thorofare of the Tangier Sound Basin in Somerset County, Maryland

The Maryland Department of the Environment (MDE) has conducted a public review of the proposed Total Maximum Daily Loads (TMDLs) of Fecal Bacteria for the Restricted Shellfish Area of the Tangier Sound Basin. The public comment period was open from March 15, 2006 through April 13, 2006. MDE received 2 sets of written comments.

Below is a list of commentors, their affiliation, the date comments were submitted, and the numbered references to the comments submitted. In the pages that follow, comments are summarized and listed with MDE's response.

List of Commentors

Author	Affiliation	Date	Comment Number
Joan Kean	Somerset County Government	April 3, 2006	1
Jennifer Schaafsma	Maryland Department of Agriculture	April 11, 2006	2-3

Comments and Responses

1. The commentor finds the data in Tables 2.1.1 and C-7 difficult to reconcile. The first, showing Land Use Percentage Distribution, indicates crop, pasture and feedlot accounting for only 1.8% of land type as opposed to 18.8% for residential. The second table, Distribution of Fecal Coliform Source Loads, shows livestock contributing 70.3% fecal coliform and human only 0.1%. How can it be that 1.8% of land use accounts for 70.3% of the problem?

   Response: This is the result of the method used in estimating sources. The human contribution was determined to be only from failing septic systems. Given the low failing septic rate (3%), the distribution of livestock vs. human loads is reasonable – even a small amount of fecal material directly deposited in the water represents millions of bacteria. To confirm the bacteria source allocations, MDE is conducting a one-year bacteria source tracking (BST) study for the restricted shellfish harvesting area identified in this report. Results will be available in 2007 and will be used to further confirm the source distribution.

2. The commentor states that it would be helpful to state how many animals (livestock, wildlife and pets) are considered in the narrative. The commentor accepts the livestock count (three beef, one horse) that was sent to MDA, but questions the determination that *livestock* supplies two-thirds of the fecal coliform to the watershed, given that *wildlife* is a greater contributor due to large numbers and direct access to surface water. The commentor also points out that, in addition to migratory waterfowl ("the largest category

of animals") with seasonal high concentrations during fall migration, there is a "huge population" of deer on the eastern shore that don't show seasonality but far outnumber livestock. Furthermore, the accuracy of the percentages of cropland (1.2%) and pasture (0.2%) is doubted, given that there are no CAFOs present.

Response: The estimated wild bird total in the watershed is approximately 268 per day. The estimated deer total is 92. The high contribution of fecal coliform from livestock is due to manure distribution, based on the method used for estimating the livestock contribution. The estimated fecal coliform produced by animals was divided into manure spreading and direct deposition, depending on the percent of time they were confined. For example, the total manure from birds is estimated based on total poultry in a county (or 8-digit watershed) and evenly distributed to all agricultural and pasture lands. For the Laws Thorofare and Upper Thorofare watershed, a large portion of the livestock contribution is due to manure spreading, mainly from poultry. The method's assumption of an even distribution of total manure entails a degree of uncertainty that may result in over-estimation of the livestock contribution. Information from local sources on both manure application and numbers of wildlife may improve the estimates. To confirm the bacteria source allocations, MDE is conducting a one-year bacteria source tracking (BST) study for the restricted shellfish harvesting area identified in this report. Results will be available in 2007 and will be used to further confirm the source distribution.

3. The commentor states that there are 352 septic tanks in the area which are all closer to the surface water than the pasture and crop land, noting that the Chesapeake Bay Foundation considers septic systems failing if they are within four feet of ground water, and that little of the eastern shore has such a deep water table.

   Response: We noted that different methods have been used for estimating the failing rate of septics. Based on the sanitary survey results in other Eastern Shore watersheds, we did not find high failing rates. For this TMDL, we have relied on the sanitary survey results required by NSSP for shellfish harvesting waters. Because there are no data showing the septic failure rate in this watershed, the average failure rate obtained from other Maryland watersheds was used to estimate the failing rate. We realize that different assumptions may result in different results. Any information from local sources can further improve the loading estimation.