WMA 12 Priority Stream Segment

WMA 12 Segment: Shark River Near Neptune City (Wall Township, Tinton Falls Borough, Neptune Township, Howell Township)

Plans for the Initial Work: Monitoring will be conducted to provide further evidence of fecal coliform and phosphorus contamination in this impaired segment and to determine the source(s) of the impairment.

The monitoring will be conducted in a sequence and not all at once. Depending on the results of the initial sampling, subsequent sampling should then be performed to more specifically determine the source(s) of impairment. This is discussed below.

The initial six (6) sampling points include sites specifically selected to determine the affects of runoff from the Garden State Parkway, a cemetery, a major tributary, and to follow-up on testing performed at the Existing Water Quality (EWQ) sampling site (Shark River at Remsen's Road) which did not test for fecal coliform. The numbers of samples to be obtained, the specific sampling points, and the range of parameters were discussed with the Bureau of Environmental Analysis and Restoration before finalization. There will be four (4) samples taken at each site – two (2) base flow and two (2) high flow, with the exception of site "A" which will be sampled five (5) times within a one-month period. The parameters to be sampled for include:

1- Total Phosphorus, TP
2- Ortho- phosphorus, Ortho-P, only dissolved fraction
3- NO2+ NO3-N
4- Dissolved NH3-N
5- Fecal coliform
6- Turbidity
7- Temperature
8 -Pressure
9- Specific Conductance
10- pH
11- Dissolved oxygen & percent dissolved oxygen saturation.

<u>Sampling Sites</u>

A. Shark River at Remsen's Mill Road
B. Shark River on the eastern (i.e., downstream) side of Schoolhouse Road
C. Reevy Branch just before it joins the Shark River
D. Tributary (just south of Route 33)
E. Tributary (just south of Route 33)
F. Shark River on the eastern (i.e., downstream) side of Wykoff Road

Manpower Analysis:

6 Stations – Base Flow – Two (2) samples at each station
High Flow – Two (2) samples at each station
Site "A" will be sampled a fifth time within the one-month period

Reconnaissance – 2 days (GPS, Site Sketch, and picture)
Sampling: 5 days with 2 samplers (3 stations per sampler)

A Quality Assurance Project Plan (QAPP) will be required.

Since Monmouth University has received a 319(h) grant for its project titled *Innovative Assessment of Sources of Fecal E. Coli in Pathogen Impaired Waterbodies of the Monmouth Coastal Watersheds Region (WMA 12)*, and that work involves source track down, we will coordinate our efforts with the University. To the extent that there is flexibility in Monmouth University's selection of sampling sites, we will seek to have them select sites that will help further the goals of our project as well as theirs.

The results of the above sampling will help determine which portion(s) of the Shark River Near Neptune City segment are impaired for phosphorus and fecal coliform. Those portions would then be targeted for more specific source tracking. As can be seen in the attached map, there are many stormwater outfalls that empty into this segment. Depending on the initial sampling results, some of those outfalls (or the Shark River just downstream of those outfalls) may be selected for follow-up sampling during storm conditions. Also, as noted by members of the WMA 12 Public Advisory Committee at a meeting held on November 6, 2002, there is a trunk sewer to the south of the impaired segment. Depending on the results of the sampling, that sewer line may be checked via dye testing to see if it is leaking and could be the source of the impairment. As with the first round of sampling, there will be discussion with the Bureau of Environmental Analysis and Restoration before that sampling plan is finalized.

Upon the conclusion of this sampling and source track down and consideration of the information obtained, we can focus our efforts on implementation activities that will result in lowered fecal coliform and phosphorus levels in this impaired segment.

Potential Partners: Bureau of Freshwater & Biological Monitoring, Monmouth County Planning Board, Monmouth County Health Department, Bureau of Environmental Analysis and Restoration, Shark River Cleanup Coalition, Monmouth University, Neptune Township, Wall Township, and Tinton Falls Borough.

Listed Impairments: phosphorus and fecal coliform (2002 and proposed 2004 Sublists 5); moderate invertebrate impairment (AMNET Year 2000)

Background: The Shark River drains an area of 23 square miles. The watershed is believed to be impacted by suburban pollution sources as well as agricultural activity. As is noted in the New Jersey 1996 State Water Quality Inventory Report (page 140):

Agricultural activity is suspected of contributing some runoff from pasturelands – resulting in nutrient and silt loads entering the waterway. In this watershed, road and housing construction, as well as urban runoff and landfills, predominate as the suspected principal nonpoint pollution sources. Local construction on roadways and housing are suspected of contributing to severe siltation and turbidity, especially in the headwaters.

The Shark River Near Neptune City us a drinking water pumping source for the Glendola Reservoir as well as providing a meaningful, while not over-reaching, water body to be addressed by this initial protective effort.

The Shark River Near Neptune City is currently included on Sublist 5 of the proposed 2004 Integrated Water Quality Monitoring and Assessment Report. It was also included on Sublist 5 of the 2002 report as well as in the 1998 Identification and Setting of Priorities for Section 303(d) Water Quality Limited Waters in New Jersey. Each time, the parameters of concern were fecal coliform and phosphorus. At the AMNET station, which is located at Remsen's Mill Road (Neptune Township) on the Shark River, moderate impairment was found based on testing conducted in 2000.

As is noted in the Initial Surface Water Quality Characterization and Assessment Report (Based on DEP Data) For Watershed Management Area 12 (NJDEP, October 21, 1999), monitoring at the Shark River Near Neptune monitoring station was discontinued as of 1991. However, more recent samples, collected as part of EWQ monitoring in 2001-2002, show that certain exceedances continue. Samples taken at Shark River at Remsens Mill (about 0.1 mile above the old Neptune City sampling site) had one exceedance of total phosphorus out of seven (7) samples. The data is insufficient to delist the site from the 303(d) list and, so, it remains. However, that finding plus another elevated phosphorus level (although below the 0.1 mg/l standard), indicate that further sampling would be advisable. Fecal coliform was not sampled at the site and the listing of that parameter is a carry-over from the 1998 303(d) list.

In addition to the above, monitoring was also conducted by the Monmouth County Health Department. That testing showed an elevated level (800 fecal coliform) at the Shark River at Gulley Road, Neptune Township sampling site. Also, several elevated levels of phosphorus occurred at the Shark River Station Road sampling site. That data can be seen at: http://www.visitmonmouth.com/health/environmental/water/ambients/index.asp .