UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

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July 20, 1994

Mark Evans, RPM
U.S. Department of the Navy
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

RE: Letter dated July 7, 1994 from the Navy concerning Ecological Work at Area "A" Downstream Site at the Naval Submarine Base-New London, Groton, Connecticut

Dear Mr. Evans:

The purpose of this letter is to transmit comments on one of the two issues raised in the subject letter. One issue is ecological and the other is the change in the approach at the DRMO and Spent Acid Sites. We are still discussing the change in approach from interim remedial action to time critical removal action and will transmit comments on that change in a future letter. The attachment to this letter will deal only with the ecological issues that were raised in the subject letter.

If you have any questions regarding these comments, you should feel free to call me at (617) 573-5736.

Sincerely,

Christine Williams, RPM
Federal Facilities Superfund Section

Attachment

cc. Mark Leone, CT DEP
Andy Stockpole, NLNSB
Mary Sanderson, EPA
Patti Tyler, EPA
Rona Gregory, EPA
Dan Winograd, EPA

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Comments on the summary titled,"Considerations in assessing contamination in the downstream area, New London, Ct. Sub Base."

1. I understand the Navy will be developing a site-specific ecological risk assessment work plan for consideration in assessing contamination in the downstream area, New London Ct. Sub Base. We look forward to reviewing this work plan under the schedules in the FFA.

2. It is agreed that it is probable that the water discharging from the wetland area may be low in oxygen concentrations during this time of year but this may not be the case during the spring, when the sampling is to occur. The odor of hydrogen sulfide is indicative of anoxic conditions within the wetland sediments. Iron flocculent was not observed in the lower pond and this is noted on the ESAT letter concerning the site visit attached to these comments.

3. There may be parcels of land in which the area is dominated by oaks but the OBDA wetland is dominated by the invasive species Phragmites australis (Great Reed).

4. At other times during the year, the fauna inhabiting the streams may and very well could be more diverse and may not be dominated by detritivorous chironomids.

5. The last paragraph of this first page should specify what proposed reference ponds would support populations of submergent and emergent vegetation, (the arboretum ponds and the one off Gungywamp Road).

6. We do not agree with the statement that the observations indicate that the proposed reference ponds are inappropriate for comparison to the ponds in the downstream areas. This may not be the cause during the spring <u>and this is what we should be focusing on</u>. The Navy may want to contact someone from the CT. Audubon Society or another similar Natural Heritage Program to determine if these are true vernal pools and possibly they should be certified. Also, it would be a good idea to receive input from persons that may be more knowledgeable about the area as a whole in providing input with this matter.

7. When mentioning the frog population in the ponds and streams, it was stated that there appears to be adequate conditions for supporting a large population of amphibians. Please define large and what species of amphibians are being referred to.

8. Frogs should be censused at the beginning of May and it is true that not all frogs will return to the same pond. However, through conversations with Peter Myreck from the Massachusetts Division of Fisheries and Wildlife, wood frogs may imprint on

certain pools and return to the same pools.

9. The recommendation of alternate methods to assess site-specific impact to the amphibians with possible fetox tests is appropriate. We would like to see and review more details of this approach within the site-specific ecological risk assessment work plan.

10. It may be possible to employ RBP and compare to data from CT DEP. However, where does this data originate?? We need more information on this. CT DEP has personnel working with macroinvertebrates so again it would be a good idea for the Navy to speak with those folks and run this information past them also.

11. Aeration during the performance of the sediment toxicity tests would be acceptable.

12. We disagree with the recommendation to use the sediment dwelling midge larvae, Chironomus tentans for the sediment toxicity tests and would recommend the use of the amphipod Hyalella azteca since it would be the most sensitive species. However, if the Navy wanted to run a test and use both species that would be acceptable.

July 20, 1994
L-94-7-J-02

Environmental Services Division
US EPA Region I
60 Westview Street
Lexington, Massachusetts 02173

TO: Mr. Anthony Palermo, ESAT RPO

VIA: Jack Berges, ESAT Team Manager Region I

SUBJECT: TID No. 01-9406-54
SITE VISIT TO NLON SUBASE TO OBSERVE POTENTIAL REFERENCE STREAM LOCATIONS, GROTON, CT

Dear Mr. Palermo:

Environmental Services Assistance Team (ESAT) member David McDonald visited the USN New London Subase, Groton, CT to investigate potential reference locations for use in the ecological risk assessment. The task, requested by Patti Tyler, EPA Task Monitor, was authorized under Technical Instruction Document (TID) No. 01-9406-54. The requested start date was June 24, 1994. The requested completion date was July 7, 1994.

ESAT visited the NLON Subase site for the purpose of evaluating potential reference pond and stream locations that will be used in ecological risk assessment studies. Other participants during the visit were Mr. Dick Conant (NLON) and Scott Heim (TRC).

The first location visited was the Area "A" downstream wetlands to get an idea of the present conditions. The water level in the "Lower" Pond was fairly low. The stream exiting from the pond contained no standing water. The west end of the pond had almost no standing water. Water levels toward the east end increased but were still fairly shallow. A muddy brown surface layer was evident. Wildlife observed using this pond were 1 individual unidentified species of frog and a family of Canada Geese. The "Upper" Pond water level was low as well, as indicated by water line marks along shoreline structure. The substrate was characterized by a dull orange surface. The outlet stream had similar substrate and some flow with a shrub canopy in close proximity to the stream topped by a deciduous hardwood canopy. The riparian area of this stream close to the pond had the appearance of fill or dredged material highlighted by a stand of Phragmites. Several Whitetail Deer were flushed from a thick shrubby area along this stream.

The water level in the OBDA wetland area was low as well, with some water movement evident flowing in the direction of the outlet stream. The substrate in the wetland consisted of an organic/silty layer approximately 12 inches in depth. The surface of the bottom substrate is coated with what appears to be an iron floc. As one moves in the downgradient direction, the lack of degradation of leaves coating the bottom is also evident. This may be indicative of anoxic conditions and/or low pH. The dominant emergent vegetation was Phragmites interspersed with small hardwoods. What were identified as a green-backed heron (Butorides striatus) and a green frog (Rana clamitans melanota) were heard in this area as well.

The outlet stream from the OBDA wetland was perhaps 6 inches deep, good flow and a substrate of sand and small cobble and some silt with a coating of iron floc. The bottom again was noted to have a substantial amount of leaves that were not in a state of decomposition. Both the iron floc and the whole leaves reduced in quantity on the downside of an old sluice near the lower end of the stream.

The next spot visited was the easterly stream off Gungywamp Rd. We walked the stream up to the headwater pond. The stream had a hardwood shrub canopy of mountain laurel and a substrate of sand and small gravel with a small amount of silt similar to the inlet stream to "Upper" Pond and to some extent the outlet from OBDA wetland. The pond had very little canopy, emergent aquatic vegetation consisted primarily of Phragmites indicating the possibility of past alteration. The surface area of the pond was hard to determine but appeared to be several acres. The substrate appeared to be of detrital matter. An old sluiceway was evident at the outlet indicating historical activity associated with this pond. This could imply that information on past use of this pond may be available.

The next potential reference area visited was Pequot Woods, a conservation area in Groton, CT. The part of this system examined began with a pond approximately 2 acres in size. The pond was the typical "bull's eye" configuration, with an area of open water surrounded by rooted emergent aquatic vegetation giving way to a shrub zone surrounded by hardwood trees. Water flowed from this pond over a small dam to a stream. The stream was approximately 3 feet wide, 2- 6 inches deep with riffle, run and pool features. The stream flow was slow to moderate. The substrate consisted of sand, and cobble of various sizes with a layer of silt in low energy areas. The riparian area consisted of various shrubs with a canopy of mixed hardwoods. The stream resembles, in some ways the OBDA outlet stream in depth, substrate, flow and riparian area.

The last area visited was the proposed area in the Connecticut College Arboretum. This wetland system is located off of Gallows Rd. The system consists of two ephemeral ponds which are emptied by an intermittent stream flowing in a southerly direction. The stream at the time of the visit was quite low with depths of up to 6 inches. The substrate was a mixture of sand, gravel and cobble with layers of silty sediment in low energy areas. The flow was slow to moderate at the time but judging from the cut banks could be swift at time of heavy flow. The riparian zone around the stream varied from open understory with a canopy of hemlock to a more dense understory with an overhead canopy of mixed hardwoods. The ponds themselves being ephemeral were low at this time with the west end being the deepest. This area appears to be ideal vernal pool habitat with an ephemeral body of water, surface water present for several months in the spring and early summer surrounded by wooded wetland areas. The depth at the deepest end of the pond was estimated to be approximately a foot to a foot and a half. The substrate consisted of detrital matter. Numerous bullfrogs could be heard, a snapping turtle (Chelydra s. serpentina) was seen as well as a Gray Treefrog (Hyla versicolor).

This last pond system may be the best representation of the "Lower" Pond. This was based on substrate characteristics, ephemeral nature, surrounding terrain and minimal human impact. The stream portion of this system in some ways, primarily in the amount of silt/sediment and lack of human impact, may better represent the OBDA outlet stream. If this stream is chosen sampling should be performed in areas with canopy similar to the Area "A" Downstream.

From the visit it was clear that due to the lack of water and the lateness of the season that activities planned for this area should be postponed for this year and take place in the range of mid April to mid May of 1995. As for the selection of a reference stream and pond, the areas visited are likely to provide adequate locations for both.

If there are any further questions please feel free to contact David McDonald at EPA/ESD Lexington, 860-4609.

Sincerely,
LOCKHEED ENVIRONMENTAL
SYSTEMS AND TECHNOLOGY COMPANY

David F. McDonald
Sr. Environmental Scientist