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NSY PORTSMOUTH
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LETTER AND U S NAVY RESPONSE TO SEACOAST ANTI POLLUTION LEAGUE
COMMENTS REGARDING DRAFT GROUNDWATER SAMPLING FOR RADIONUCLIDES
NSY PORTSMOUTH ME
4/14/1999
PORTSMOUTH NAVAL SHIPYARD



NAVSUBPMSMH-5216/9 (REV 8-88) DEPARTMENT OF THE NAVY
 PORTSMOUTH NAVAL SHIPYARD
 PORTSMOUTH, NH 03804-5000

5090 IN REPLY REFER TO:
 Ser 105.5
 14 Apr 99

FILE

Checked by

Carolyn A. Lepage
 Lepage Environmental Services, Inc.
 P.O. Box 1195
 Auburn, Maine 04211-1195

JS 4/14/99
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JAB 4/14/99
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Dear Ms. Lepage,

In June 1998, Portsmouth Naval Shipyard (PNS) issued a draft one-time environmental sampling plan at EPA and Maine request, as a supplement to the shipyard's routine quarterly radiological environmental monitoring program. The draft plan, Groundwater Sampling for Radionuclides, addresses sampling of on-site pond water, sediment, and biota as well as groundwater. PNS responded to your comments on the draft plan in a letter dated November 13, 1998.

Your letter of December 12, 1998 forwarded several follow-up questions regarding our prior response. Enclosure (1) contains our answers to your specific comments. I hope this clarifies your remaining concerns on this matter. We expect to finalize the plan and implement it in the near future.

We appreciate your interest in this matter. Should you have any further questions, please feel free to contact me at (207) 438-1283.

Sincerely,

J. A. BRANN
 By direction

Enclosure: 1. Navy Responses to Comments/Questions from the Lepage Environmental Services, Inc. letter dated December 12, 1998

Copy to:
 NAVFACENGCOM (Code 1823/FE)
 Environmental Protection Agency, Region I (Cassidy)
 Maine Department of Environmental Protection (McLeod)
 SAPL (Vandermark)

Blind Copy to:
 COMNAVSEASYSOM (SEA 04N, 08R)
 NRRO PTSMH (Mr. Solich)
 105
 105.5
 105.6
 106.3 (Ms. Raymond)
 (w/o encl) 862

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Navy Responses to Comments/Questions from
Lepage Environmental Services, Inc.
letter dated December 12, 1998

Reference: (a) Historical Radiological Assessment (HRA),
Portsmouth Naval Shipyard, July 1998

Original Comment 2: Pages 1 & 2, Section 2: What is the Navy's experience with analyzing environmental samples with the equipment and methods described in Section 2? Why were cobalt-60 and radium-226 selected for analysis? Are there other radioactive isotopes or materials used or in use at the Shipyard? Are daughter products of concern?

Follow-up Comment: The Navy's response did not address the third and fourth questions in my original comment. Information concerning other radioactive isotopes or materials used or in use at the Shipyard, as well as daughter products, must be provided.

Response: Detailed information on other radioisotopes previously used or in use at the Shipyard is provided in Section 4.0 of Volumes I and II of reference (a). To summarize the material contained therein, radioactivity associated with maintenance and overhaul of nuclear submarines consists primarily of corrosion and wear products within the primary system that are activated during reactor operations. Of these, cobalt-60 is the predominant radionuclide and has the most restrictive concentration limits. Cobalt-60 is not naturally occurring, and serves as an excellent tracer to identify if there have been any releases as a result of Naval nuclear work.

Radium is the only G-RAM (reference (a), Volume II) radionuclide that might have been released to the environment.

Regardless of the above, all samples will be analyzed with a sophisticated commercial gamma spectroscopy system, as described in Section 2 of the sampling plan, that can detect a broad range of radionuclides including any gamma-emitting nuclides associated with Naval nuclear work and the progeny of radium-226.

Original Comment 4: Page 3, Section 3: Who certifies a contractor for low-flow sampling? It appears that the contractor would collect groundwater samples using low-flow

techniques. What sampling protocol or plan will be followed? Will both the EPA and the DEP be collecting split samples?

Follow-up Comment: The information included in the response and the revisions to the text provide sufficient information with one exception. Who will train the contractor in the low-flow sampling procedures that will be referenced in the revised plan?

Response: The contractor for groundwater sampling will be Tetra Tech NUS. This vendor has conducted previous rounds of low-flow groundwater sampling at the Shipyard for chemical purposes. The revised plan will include the contractor's name and note that they are experienced in low-flow groundwater sampling procedures. Tetra Tech NUS will be provided a copy of the plan so that the proper number/volume of samples are taken. Additionally, PNS environmental monitoring staff will be present at the start of sampling and periodically thereafter to ensure the plan is followed.

Original Comment 5: Page 3, Section 3: How will the surface water samples be collected? Is turbidity a potential problem? Why were the extreme east and west ends of the two ponds selected for sampling locations?

Follow-up Comment: The Navy will include additional details on the proposed surface water (and biota) sampling in the revised plan. However, it is not clear how the surface water samples will be filtered.

Response: If filtering surface water samples is necessary, a Millipore Filtering System will be used. (As already noted in the plan, the filtrate and filter will both be analyzed.) The plan will be revised to reflect this.

Original Comment 10: Page 7, Section 8: It is not clear how the results of the sampling will be communicated to the Restoration Advisory Board. Please clarify.

Follow-up Comment: The Navy's response should be incorporated in the revised text to clearly state how the Restoration Advisory Board will be provided with the results of the environmental sampling.

Response: A copy of the draft and final reports will be mailed to the Restoration Advisory Board members when forwarded to the regulators. The plan will be revised accordingly.

Additional Comment: The Navy's response to the Maine Department of Environmental Protection's fourth comment concerning background wells raises an additional question. The Navy appears to propose sampling only bedrock wells. While the Navy makes it clear that wells installed in fill material will not be sampled, it is not clear if wells completed in naturally-occurring overburden were considered as background sample locations. If overburden wells were not considered, the rationale should be provided.

Response: All wells sampled during the last four rounds of groundwater monitoring on the Shipyard were included in the draft sampling plan. This includes many wells in both bedrock and overburden (fill material). Of the overburden wells listed (i.e., wells in which water is sampled from the overburden) in the draft plan, none are located in naturally occurring overburden.

In general, identification of background wells was based on reviewing the results of several rounds of water monitoring for chemical contaminants to find wells that (1) do not contain contaminants from landfill areas, and (2) are not in landfill areas. Since the original islands upon which the Shipyard was built are basically rock formations with little topsoil, the wells meeting these background criteria happen to be drilled into bedrock. Note that the second selection criterion listed in the draft plan (paragraph 5.b(2)) is redundant with the first so will be eliminated.

Also, as noted in discussions with Maine, natural radiation levels may vary widely in wells drilled into different kinds of rock or fill material. Additional comparisons will likely be necessary to confirm that radium is naturally occurring, if elevated levels are observed in any wells.