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NSY PORTSMOUTH
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LETTER AND U S NAVY RESPONSE TO MAINE DEPARTMENT OF ENVIRONMENTAL
PROTECTION COMMENTS REGARDING DRAFT GROUNDWATER SAMPLING FOR
RADIONUCLIDES NSY PORTSMOUTH ME
11/13/1998
PORTSMOUTH NAVAL SHIPYARD



FILE

IN REPLY REFER TO

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DWJ 11/13/98
for 105.52

JM 11/12/98
(4) 105.5

Mr. Iver Mcleod
Maine DEP
State House Station #17
Augusta, ME 04333

Dear Mr. McLeod,

Your letter of July 24, 1998 forwarded comments on the June 1998 Draft Groundwater Sampling for Radionuclides plan for Portsmouth Naval Shipyard.

Enclosure (1) contains the specific responses to your comments. Please let us know within 30 days whether you have additional questions, or that the Groundwater Sampling Plan is acceptable as final.

Should you have any questions regarding this response, please feel free to contact me at (207) 438-1283.

D. A. SCHAUER
By direction

Enclosure: 1. Navy Responses to the State of Maine Department of Environmental Protection Comments/Questions on the June 1998 Draft Groundwater Sampling for Radionuclides Plan for Portsmouth Naval Shipyard

Copy to:
NAVFACENCOM (Code 1823/FE)
U.S. Environmental Protection Agency, Region I
TAG Advisor (Carolyn Lepage)
RAB Members

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

(w/o encl)
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Navy Responses to the State of Maine Department of
Environmental Protection Comments/Questions on the June 1998
Draft Groundwater Sampling for Radionuclides Plan for
Portsmouth Naval Shipyard

Comment 1: Page 2, Equipment and Procedures, 2.c(1):

"Volume reduction will be employed to achieve an MDC..."

a) Please discuss these techniques and their benefits and drawbacks.

b) Please define the acronym "MDC".

Response: The following new paragraph 2.c(3) will be added to discuss the benefits and drawbacks of volume reduction:

"2.c(3) To achieve the specified MDC, the volume of the sample will be reduced to 500 ml by evaporation. The sample will then be counted in a 500 ml Marinelli beaker (an efficient counting geometry), to achieve the MDC for cobalt-60 of <10 pCi/l. This process will be performed in a manner to ensure that the loss of particulate matter is minimized. Loss of gaseous radioactivity is not a concern since the process is designed to identify cobalt-60 and radium-226, both non-gaseous isotopes."

The acronym "MDC" stands for Minimum Detectable Concentration and is used as defined in ANSI Standard N42.23-1996. Paragraph 2.c will be revised to refer to this ANSI Standard, which also will be added as reference (b).

Comment 2: 3.b, Sample Collection, p. 3:

The term "well spout" is seldom used in environmental work, and may be ambiguous to many readers. Please replace throughout the document with an appropriate substitute.

Response: The term "well spout" will be replaced throughout the document with "monitoring well."

Comment 3: 4.e, Marking and handling of samples, p.4:

"If not done by the contractor, PNS will tape over the top of the sample containers immediately after sample collection..."

MEDEP believes that the sampling contractor should be required to "tape over the top of the sample containers immediately after sample collection"; not PNSY personnel. This procedure will best ensure against sample loss or alteration.

Response: Paragraph 4.e will be revised to require the contractor to tape over the top of the sample containers. This only applies to groundwater samples, since PNS will obtain all pond samples.

Comment 4: 5.b(2), Data Analysis and Comparison to Background Levels, p.4:

"[Background well selection criteria were:]

(2) The screened portion of the monitoring well is in bedrock.

(3) The water level in the well typically is not tidally influenced."

What is the rationale for including only bedrock wells and non-tidally influenced wells as background wells?

Response: Paragraphs 5.b(1), 5.b(2), and 5.b(3) will be revised to clearly state the rationale for background well selection criteria as follows:

"5.b(1) The well is located on an original island, not on fill areas. Fill areas contain materials which in some cases originate from past Shipyard industrial operations and, therefore, these are the major areas where sampling is desired to verify the absence of radioactivity associated with Shipyard operations.

"5.b(2) The screened portion of the monitoring well is in bedrock. Fill areas are undesirable locations as discussed above.

"5.b(3) The water level in the well typically is not tidally influenced. (There is the potential that a tidally influenced well contains seawater, not the desired fresh groundwater.)"

Comment 5: Data Analysis and Comparison to Background levels, p. 5:

The "b" subsection heading should be relabeled "c", and subsequent letters adjusted.

Response: Labeling in Section 5 will be corrected.

Comment 6: 5.d(2), Data Analysis and Comparison to Background Levels, p.5:

"...results will be compared to samples from well spouts drilled into similar rock formations..."

The State geologic map indicates one rock formation, the Kittery Fm, a calcareous feldspathic sandstone. Undoubtedly, igneous dikes cut through the Kittery Fm and the sandstone is not homogeneous in mineral composition. However, what specifically will the Navy use to determine rock similarity? Well drilling logs may be inadequate for this purpose.

Response: New paragraph 5.e(2) will be added as follows to more clearly state the similarities between wells that will be used for analysis purposes:

"5.e(2) If samples from a designated site have detectable levels of radioactivity, the results will also be compared to samples from monitoring wells drilled into rock formations which are generally similar to the suspect sample monitoring wells (i.e., bedrock compared with bedrock, fill compared with fill, etc.). This is necessary because background levels of naturally-occurring isotopes can vary significantly."

Comment 7: 7.a, Gamma-Analysis Quality Control Measures, p.6:

"The germanium detector is calibrated annually..."

At the time of scheduled sample analysis, if it has been over 6 months since the last detector calibration, perhaps the instrument should be re-calibrated to assure accurate values are obtained.

Response: Paragraphs 7.b and 7.c describe daily energy and efficiency checks performed on the instrument. These checks verify that the system calibration is still valid. If deficient conditions or trends are identified during these daily checks, the system would be recalibrated. Also, if the instrument were considered potentially inaccurate after 6 months, it would have a more frequent calibration cycle than annually. No change appears necessary.