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LETTER AND COMMENTS ON BEHALF OF SEACOAST ANTI POLLUTION LEAGUE REGARDING DRAFT SITE SCREENING REPORT SITES 30, 31 AND 32 NSY PORTSMOUTH ME

5/2/1999

LEPAGE ENVIRONMENTAL SERVICES

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May 2, 1999

Peter Vandermark
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P. O. Box 1136
Portsmouth, New Hampshire 03802

Subject: Review Comments, *Draft Site Screening Report, Building 184, (Site 30), West Timber Basin (Site 31), and Topeka Pier (Site 32)*

Dear Mr. Vandermark:

As you requested, we are transmitting comments to the Seacoast Anti-Pollution League (SAPL) concerning the February 1999 document, *Draft Site Screening Report, Building 184, (Site 30), West Timber Basin (Site 31), and Topeka Pier (Site 32)*. The report was prepared by TetraTech NUS to present the results of investigations tocharacterize the Building 184,(Site 30), West Timber Basin (Site 31), and Topeka Pier (Site 32) sites. The purpose of the investigations is to provide information concerning the potential for contamination at the sites in order to make decisions concerning possible future actions. Our comments and questions are as follows:

1. Page ES-1, Executive Summary, paragraph 1. The reference for the work plan should be cited and added to the Reference List.

2. Page ES-1, Executive Summary, paragraph 2. Media Protection Standards (MPSs) are mentioned here and throughout the report. However, according to pages 14-4 and 14-5 of the April 1998 *Site Screening Work Plan, Building 184, (Site 30), West Timber Basin (Site 31), and Topeka Pier (Site 32)*, the MPSs were replace with Preliminary Remediation Goals (PRGs) following the Shipyard's transition from the RCRA program to CERCLA. We also note that the *Draft Field Investigation Report, Site 10 (Building 238) and Site 29 (Teepee Incinerator)* which we recently reviewed refers to PRGs, not MPSs. For consistency's sake, PRG, not MPS, should be used throughout the report. If it is not appropriate to use PRGs in this report, an explanation should be provided.

3. Page ES-1, Executive Summary, paragraph 2. The PNS site-specific background is mentioned here and in numerous other places in the report. Background determination has not yet been finalized and there are issues that still must be resolved. For example, as we noted in our February 25, 1999, comments on the *Draft Facility Background Development*, we have concerns

regarding collecting background samples in an industrial area at a Superfund Site and using elevated "background" conditions as the basis for comparison or risk calculation that will have the effect of down-playing or minimizing risks at contaminated sites. Therefore, the text must be revised here and elsewhere to reflect that background levels are currently in draft form.

4. Page ES-1, Executive Summary, paragraph 3. *"Neither the MPSs or the Region III RBCs for soils considers the potential for contaminants leaching from soil to groundwater. Hence, contaminant concentrations in soil were also compared to the generic Federal Soil Screening Levels (SSLs)."*

Page 14-5 of the April 1998 Work Plan states the following: *"Note that the PRGs for soil do not take into consideration the leaching from soil to groundwater. However, the leaching of chemicals from soil to groundwater would be accounted for by evaluating the concentrations in groundwater and the modeling of contaminant migration from onshore to offshore environment (discussed in Section 14.3.3)."* Why did the Navy deviate from the method described in the Work Plan? Is the use of SSLs more conservative or more representative? Please provide the rationale for using SSLs in place of the approach described in the Work Plan and the effect on risk screening.

5. Page ES-1, Executive Summary, SITE 30 (BUILDING 184), <u>Background</u>. The text should also mention that Building 184 was used as a facility for cleaning metal parts in the mid-1950s.

6. Page ES-2, Executive Summary, SITE 30 (BUILDING 184), <u>Field Investigation Activities</u>, paragraph 2. "Material" and "till" should be separated by the word "and" in the first sentence. The use of the term "unit" in the second sentence is a bit confusing. Does it refer to the overburden as a whole or just the fill material? Please clarify.

7. Page ES-2, Executive Summary, SITE 30 (BUILDING 184), <u>Conclusions</u>, paragraph 2. *"The metals concentrations in soils also decreased with depth which might be expected."*

It is not at all clear to the reader why it is expected that concentrations of metals would be expected to decrease with depth. Please clarify.

8. Page ES-3, Executive Summary, SITE 30 (BUILDING 184), <u>Conclusions</u>, paragraph 2. *"Based on the findings of the site screening, the horizontal extent of contamination appears to be adequately defined."*

It is premature to state that the horizontal extent of contamination is defined, particularly when the Navy acknowledges in the subsequent section that the source of the contamination at Building 184 has not yet been identified, and that additional investigations will be required. Furthermore,

as the Maine Department of Environmental Protection (MEDEP) points out in General Comment 3 of their April 8, 1999, letter, the timing of water level measurements in tidally-influenced wells appears to introduce some uncertainty into interpretations of groundwater flow directions. Specifically, the peaks of tidal influence and the lag after high and low tide for individual wells must be determined before groundwater flow directions based on contouring water level measurements are interpreted. With regard to groundwater flow direction at Building 184, MEDEP calculations resulted in an interpretation that differs significantly from the flow direction presented in the report, and indicates that only one of the four monitoring wells appears to be downgradient of Building 184. We concur with the MEDEP's suggestion that automated or repeated water level measurements be employed at tidally-influenced wells to ensure that maximum and minimum water levels, as well as lag time, are determined prior to contouring water level data, and look forward to a reevaluation of groundwater flow directions for all three sites.

9. Pages ES-3 & ES-4, Executive Summary, SITE 31 (WEST TIMBER BASIN), <u>Background</u>. The dates presented in this section differ somewhat from the dates in Section 3.2.1 of the April 1998 Work Plan. For example, the Work Plan states that the timber basin originated in the early 1900s and was filled in completely by 1940. The report states that the West Timber Basin was used to store and season wood prior to 1900, and that by 1948, the fill extended west from the timber basin to the current shoreline. In addition, the Work Plan (page 3-7) mentions pigging and smelting by-products went into the West Timber Basin. Are these the by-products of the metal washing plant mentioned at the bottom of page ES-3? Are the inconsistencies the result of new information gathered since the April 1998 Work Plan was released?

10. Page ES-4, Executive Summary, SITE 31 (WEST TIMBER BASIN), <u>Field Investigation Activities</u>, paragraph 2. What is the source of the ash mentioned in the fourth line? What are the Navy's plans for dioxin testing at Site 31?

11. Page ES-5, Executive Summary, SITE 31 (WEST TIMBER BASIN), <u>Conclusions</u>, paragraph 2. *"There are currently no screening criteria with which to compare the TPH [Total Petroleum Hydrocarbon] soil data."*

As the MEDEP describes in Specific Comment 6 in their April 8, 1999, letter, the State of Maine has the "Procedural Guidelines for Establishing Standards for the Remediation of Oil Contaminated Soil and Ground Water in Maine". If public use of groundwater is considered (as it is in subsequent sections entitled Risk Assessment Screening), the cleanup standard for contaminated soil is 10 mg/kg total fuel oil or 5 mg/kg total gasoline as determined by MEDEP-approved laboratory methods. Therefore, the Maine Guidelines must be mentioned here and elsewhere in the report text, and results must be compared with the cleanup standard.

12. Page ES-6, Executive Summary, SITE 31 (WEST TIMBER BASIN), Recommendations. Is the Phase II Investigation actually a Remedial Investigation? Please clarify. Will the additional investigations also evaluate the potential impact of Site 31 on offshore receptors? The Navy proposes to conduct additional soil sampling at WTB-SB02, WTB-SB07, WTB-SB05, and WTB-SB06. Yet maximum concentrations for a number of inorganic compound exceedances were detected at WTB-SB03 and WTB-SB04. Therefore, these areas, as well as the potential for bedrock contamination, must also be investigated.

13. Page ES-7, Executive Summary, SITE 32 (TOPEKA PIER), Background. The information presented at the top of the page implies that filling at the Topeka Pier site was completed by 1910. However, the April 1998 Work Plan (Section 3.3.1) states that landfilling continued until around 1945. Information about landfilling after 1910 must be added to the text, and should include the source(s) of the fill material and what it (might have) contained. This section should also describe the sewer and drainage pipes that reportedly discharged solvents and antifreeze to the Back Channel until the 1960s.

14. Page ES-9, Executive Summary, SITE 32 (TOPEKA PIER), Recommendations. Is the Phase II Investigation actually a Remedial Investigation? Please clarify. We disagree that additional investigations are only needed in the vicinity of Buildings 158 and 154, and that the remaining areas of Site 32 do not require further work. The highest concentrations of mercury and lead, which also exceed screening criteria, occur at TP-SB09 and TP-SB10, respectively. Therefore, these areas must be evaluated as well. As we pointed out in comment 8, above, we have concerns regarding the interpretation of groundwater flow directions based on the water levels measured in tidally-influences wells. Uncertainties regarding groundwater flow directions must be addressed. Given the proximity of Site 32 to the shore, the additional investigations must also assess the potential impact on offshore receptors, including the effects of the sewer and drainage pipe discharges to Back Channel.

15. Page 1-2, Section 1.3.1 Facility Location and Mission. The second sentence is incomplete.

16. Page 1-2, Section 1.3.2, Physiography, paragraph 1. The complete title of the O'Toole and Clinch reference cited must be included in the reference list.

17. Pages 1-6 & 1-7, Section 1.4.1.2, Previous Investigations. The results of earlier testing of the crystalline substances found at Building 184 should be included in the report.

18. Page 1-7, Section 1.4.2.1, Site Description. Comment 9, above, also applies to this section.

19. Page 1-9, Section 1.4.3.1, Site Description. "Burnable material" is described as being dumped in the timber basin at Site 32. Was the material actually burned at the site? The April 1998 Work Plan also mentions disposal of "various cans and drums". This information should be added to the report. A number of buildings are listed as being constructed during 1941-1945. However, there is no information concerning the materials stored, used, or disposed, or the activities carried out at the individual buildings. This doesn't help in understanding potential historical sources of contamination at the Topeka Pier Site. For example, Buildings 177, 197, and 112 were used as storehouses. Did the materials stored have the potential to contaminate the site? Building 176 housed torpedo overhaul and storage. What materials were used in the overhaul process. What's involved in overhauling a torpedo? Additional background information is needed for historical perspective and to understand potential sources of contamination. Information concerning current drainage discharges to Back Channel should also be provided. For example, are there any floor drains currently in use in buildings at Site 32? If so, where and what do they discharge?

20. Page 2-1, Chapter 2.0, SITE INVESTIGATION ACTIVITIES. We have noted a number of deviations from activities and procedures described in the April 1998 Work Plan that are not documented in this report. These deviations should be identified in the report and the reason(s) for departing from the Work Plan should be described.

21. Page 2-1, Section 2.1.1, <u>Surface Soil Sampling</u>, paragraph 1. According to the April 1998 Work Plan, surface soil samples were to be collected at all soil boring/well locations and all soil borings. Why weren't surface soil samples collected at all boring locations?

22. Page 2-2, Section 2.1.2, <u>Soil Boring Drilling and Subsurface Soil Sampling</u>, paragraph 1. Page 4-1 of the April 1998 Work Plan states that split-spoon samples were to be collected continuously to the bottom of each boring. Why wasn't this done at Sites 31 and 32?

23. Page 2-3, Section 2.2.1, <u>Monitoring Well Installation and Development</u>, paragraph 4. According to the Work Plan (page 4-2), well development was not to occur until at least 14 days after well installation in order to allow the grout to cure. However, the Well Development Data Sheets included in Appendix B indicate development of nine out of sixteen wells occurred before the 14-day period had passed. Of particular concern are the development of wells TP-MW06 and TP-MW07 just 2 and 3 days after well installation was completed. Why did development occur in less than 14 days after well installation at over half the wells? How have well characteristics and sample quality been effected? In addition, wells were reportedly developed until turbidity in the well discharge was less than 10 Nephelometric Turbidity Units (NTUs). The Work Plan stated on page 4-4 that development would continue until turbidity was less than 5 NTUs. What is the technical basis for deviating from the Work Plan and what are the potential impacts of changing the development procedure?

24. Page 2-3, Section 2.2.2, Groundwater Purging and Sampling, paragraph 2. *"Water level and water quality parameters were measured in 5- to 10-minute intervals during purging."*

According to page 4-5 of the April 1998 Work Plan, water levels were to be measured in 3- to 5-minute intervals and water quality parameters in 5-minute intervals. The Navy should explain this deviation from the Work Plan and if it resulted in significant differences in data collected.

25. Pages 2-4 & 2-5, Section 2.2.3, Groundwater Level Measurements. Comment 8, above, applies to this section.

26. Page 2-5, Section 2.3, SURVEYING, paragraph 1. What does "with mathematical adjustment" mean? How will the vertical closure of 0.08 feet from PNS datum effect measurements such as water levels? What impact might this have on contouring water level data and the interpretation of groundwater flow directions (see comment 8, above)?

27. Pages 2-5 & 2-6, Sections 2.4 Decontamination and 2.5 Investigation-Derived Waste. The specific standard operating procedures (SOPs) followed should be referenced in these sections, and any deviations noted. The citation and reference for the Shipyard protocol for waste disposal should also be provided.

28. Pages 2-7 & 2-8, Section 2.6.2, Data Validation Qualifiers. A brief description of the data qualifiers listed in this section should be included as a footnote on all tables in the report where the qualifiers are applied to analytical results.

29. Page 2-8, Section 2.7 EVALUATION OF DATA AND PERFORMANCE OF RISK SCREENING. What is the "study of ecological receptors" mentioned in the second sentence? A citation and reference should be provided. What are the "other criteria" mentioned at the end of the paragraph as being used for data comparison? Comments 2 and 3, above, concerning MPSs and site background also apply to this section.

30. Page 2-8, Section 2.7.1, Comparison with Preliminary PRGs and Other Criteria, paragraph 1. Why was the average concentration of the field duplicate pair used? To be more conservative, the higher of the two concentrations should be used.

31. Page 2-9, Section 2.7.1, Comparison with Preliminary PRGs and Other Criteria, paragraph 2. Comment 4, above, concerning the use of SSLs applies to this section.

32. Page 2-10, Section 2.7.1, Comparison with Preliminary PRGs and Other Criteria, second bullet. Comparison with background levels for saline conditions should also be included.

33. Page 2-13, Table 2-3. An equipment error is noted for dissolved oxygen measurements at WTB-MW03, resulting in a negative measurement. Why wasn't the field crew able to correct the situation and collect a usable measurement? We also note the range of turbidity measured at the wells. Why are measurements significantly higher at several wells? Is it a function of well development a short time after well installation? Installation of a larger well-screen slot size than appropriate? What effect, if any, would these turbidity levels have on laboratory analysis?

34. Page 3-1, Section 3.1, SOIL INVESTIGATION, paragraph 2. *"Borings B184-SB03 and B184-SB04 were installed to evaluate the soils downgradient of the site."*

Based on the groundwater contours drawn on Figure 3-5, it appears that only B184-SB04 is actually downgradient of the acid pit in Building 184 (see comment 8, above, as well).

35. Page 3-1, Section 3.1.1, <u>Surface Soil Sampling and Analysis</u>, paragraph 2. *"The surface soil samples were collected from depths of less than 8 inches below the ground surface (bgs)."*

According to the April 1998 Work Plan (page 3-7), surface soil samples were to be collected from 0-1 foot bgs after removing the first several inches of soil. Why was the sample collection horizon altered from the Work Plan and what are the possible ramifications?

36. Page 3-1, Section 3.1.1, <u>Surface Soil Sampling and Analysis</u>, paragraph 2. *"The samples were collected by mixing the soil in a stainless steel bowl and then transferring it to the appropriate container."*

We are concerned that the act of mixing the soil in an open vessel has likely resulted in the loss of some volatile constituents prior to placing the soil sample in containers. Therefore, we believe that concentrations reported for volatile organic compounds (VOCs) are likely to be lower than actually occur at the site.

37. Page 3-2, Section 3.1.2, <u>Subsurface Soil Sampling and Analysis</u>. This paragraph should also state that split-spoon samples were collected continuously for lithologic descriptions, observation for signs of contamination, and screening with a photoionization detector (PID), and that this information was used in selecting subsurface soil samples for laboratory analysis.

38. Page 3-2, Section 3.2.1, <u>Monitoring Well Installation</u>, paragraphs 1 & 2. As noted in comment 34, above, only B184-MW04 appears to actually be downgradient of the site. Two of the four monitoring wells were installed in bedrock, whereas the Work Plan (page 3-4) specified the investigation would be limited to the overburden. The reason for installing the wells in bedrock, as well as the potential effect on groundwater flow and contaminant migration direction interpretation (using data from both overburden and bedrock wells) should be included in this section.

39. Page 3-3, Section 3.2.3, Water Level Measurements. See comment 8, above, regarding water level measurements and the resulting interpretation of groundwater flow direction.

40. Page 3-4, Section 3.3.2, Hydrogeology. We note that, of the four wells, two are screened in bedrock, one in overburden, and one in both overburden and bedrock, and that we do not have hydraulic conductivity information. The comments we have made above (8, 38) regarding water level measurements, well locations, and screen location apply to this section.

41. Page 3-5, Section 3.4.1 Surface Soil, paragraph 1, and subsequent sections. *"Acetone is considered a common laboratory contaminant and, therefore, may not be a site-related constituent."*

There are numerous locations in the report where similar language is used to describe the detection of certain compounds. Is the Navy saying the detection of these compounds resulted from laboratory contamination? What do the laboratory data and the quality control sample results show? It is not clear if the compounds detected should be dismissed as laboratory contaminants or retained as site-related constituents. The text should be clarified wherever this wording is used.

42. Page 3-6, Section 3.4.1 Surface Soil, paragraph 2. *"No PCBs were detected in the remaining sample."*

Were PCBs detected in the surface soil sample at B184-SB03? Please clarify.

43. Pages 3-9 - 3-14, Section 3.5, RISK ASSESSMENT SCREENING - COMPARISON WITH MPSs AND OTHER CRITERIA. A number of our previous comments (for example 2, 3, 4, 8, 11, 36, 38, 40, 41) apply to the validity and completeness of the interpretations in this section. We look forward to revisiting the risk assessment screening once further definition of the extent of contamination and delineation of groundwater flow and contaminant migration is completed.

44. Page 3-10, Section 3.5.1, Surface Soil, paragraph 2. *"If a quantitative risk assessment were to follow the screening process, chemicals that exceeded only site-specific background values would be eliminated from further evaluation. ... Additionally, any chemical concentrations in excess of the USEPA Region III residential RBCs but below background concentration would also be eliminated from further evaluation."*

This statement is at odds with the procedure presented in item 4 on page 14-6 of the April 1998 Work Plan. Exceedances of background or RBCs in soil were to be followed up with a risk assessment, not dropped entirely from consideration. Please clarify.

45. Page 3-10, Section 3.5.1, Surface Soil, paragraph 3, and subsequent sections. *"Because no SSLs exist for Freon-113,..., these compounds could not be further evaluated for migration potential."*

Similar passages occur elsewhere in the report, and this comment applies to all such wording. The April 1998 Work Plan identified a means of evaluating migration potential (see comment 4, above). Since application of SSLs is impossible, will the Navy now follow the method outlined in the Work Plan?

46. Page 3-33, Figure 3-3 and subsequent cross sections. The cross sections are very helpful for visualizing the stratigraphy of the sites. However, it is a bit confusing to relate the elevations shown at the ends of the cross sections, which can range from 45 to 140 feet above mean sea level (msl), to the location of the historic and present shore lines, which presumably are at 0 msl. Adding a second vertical scale, properly labeled, that would show the "true" elevation would clarify the relationship.

47. Page 4-2, Section 4.1.1 Surface Soil Sampling and Analysis, paragraph 1. Surface soil samples were not collected from borings WTB-SB03 and WTB-SB04 due to the presence of asphalt and gravel from 0 to 1 foot bgs. However, the April 1998 Work Plan stated that where asphalt paving was present, the pavement and impacted subbase would be removed and discarded prior to collecting the surface soil sample. Why the change from the Work Plan?

48. Page 4-2, Section 4.1.1 Surface Soil Sampling and Analysis, paragraph 2. Please refer to comment 36, above, concerning the loss of VOCs due to mixing the soil sample.

49. Page 4-2, Section 4.1.2, Subsurface Soil Sampling and Analysis. This paragraph should also state that split spoon samples were collected continuously for lithologic descriptions, observation for signs of contamination, and screening with a photoionization detector (PID), and that this information was used in selecting subsurface soil samples for laboratory analysis.

50. Page 4-3, Section 4.2.3, Water Level Measurements. See comment 8, above, regarding water level measurements and the resulting interpretation of groundwater flow direction.

51. Page 4-5, Section 4.3.2, Hydrogeology. Why is there almost a 1-foot difference in water levels measured at the two tidal gages, as reported in the second paragraph? Our concerns regarding water level measurements and the resulting interpretation of groundwater flow direction, as outlined in comment 8, above, also apply here.

52. Page 4-10, Section 4.4.3, Groundwater, paragraph 1. Why is the turbidity high at WTB-MW04? Is more well development needed? Was a properly sized well screen installed?

53. Pages 4-11 - 4-16, Section 4.5, RISK ASSESSMENT SCREENING - COMPARISON WITH MPSs AND OTHER CRITERIA. A number of our previous comments (for example 2, 3, 4, 8, 11, 36, 41) apply to the validity and completeness of the interpretations in this section. We look forward to revisiting the risk assessment screening once further definition of the extent of contamination and delineation of groundwater flow and contaminant migration is completed.

54. Pages 4-11 & 4-12, Section 4.5.1, Surface Soil. A third bullet should be added on page 4-11 to address DRO exceedances of State standards, since residential use of the site and groundwater is being considered. The last sentence in the first paragraph on page 4-12 must be revised to address the DRO exceedances.

55. Page 4-12, Section 4.5.1, Surface Soil, paragraph 2. *"If a quantitative risk assessment were to follow the screening process, chemicals that exceeded only site-specific background values would be eliminated from further evaluation. ... Additionally, any chemical concentrations in excess of the USEPA Region III residential RBCs but below background concentration would also be eliminated from further evaluation."*

This statement is at odds with the procedure presented in item 4 on page 14-6 of the April 1998 Work Plan. Exceedances of background or RBCs in soil were to be followed up with a risk assessment, not dropped entirely from consideration. Please clarify.

56. Page 4-12, Section 4.5.1, Surface Soil, paragraph 4. *"Because no SSLs for transfer from soil to air exist for any PAHs, 44'-DDD,..., these compounds could not be further evaluated for migration potential."*

How will the Navy address this migration potential, as well as the potential risks associated with air-born contaminants?

57. Page 4-13, Section 4.5.2, Subsurface Soil. A third bullet should be added to address DRO exceedances of State standards, since residential use of the site and groundwater is being considered. The last sentence in the paragraph following the bullets must be revised to address the DRO exceedances. Based on the information presented in Table 4-4, zinc not only exceeds background, but also exceeds the MPS.

58. Pages 4-13 & 4-14, Section 4.5.2, Subsurface Soil. Comment 55, above, applies to this section.

59. Page 4-14, Section 4.5.2, Subsurface Soil, paragraph 1. The list of parameters to be considered for quantitative risk assessment should also include iron, lead, and zinc.

60. Page 4-15, Section 4.5.3, Groundwater, last paragraph. Comment 55, above, applies to this section.

61. Page 4-16, Section 4.5.4, Risk Screening Summary, paragraph 1. Comments 53 through 60 apply to this section.

62. Pages 4-30 & 4-34, Tables 4-3 & 4-4. Because the residential use of the site and groundwater is being considered, the State of Maine standards for DRO and GRO should be added to the table, and applicable exceedances noted. Table 4-4 should also be amended to show that nickel and zinc exceeded the Region III RBC and MPS, respectively.

63. Pages 4-35 - 4-38, Tables 4-5 & 4-6. There are numerous instances tabulated in Table 4-5 where the numerical detection limit was significantly greater than the Minimum Detection Limit (MDL). This affects the frequency of detections listed in Table 4-6. The relatively high numerical detection limits also exceed screening criteria in several instances. Therefore, the actual number (and possibly magnitude) of exceedances may be greater than what's identified in Table 4-6 and elsewhere in the report. For example, the numerical detection limit for lead exceeded the MCL in two out of five samples. The MDL for thallium exceeds both the MCL and the Maine MEG by a factor of at least two, and the numerical detection limit was as much as 100 times the MEG. The Navy must explain why the MDLs were not attained and how the elevated numerical detection limits affect the results of and confidence in the risk screening process.

64. Page 5-1, Section 5.1.1 Surface Soil Sampling and Analysis, paragraph 1. Surface soil samples were not collected from borings TB-SB13, TP-SB14, and TP-SB16 due to the presence of a gravel road base from 0 to 1 foot bgs. The April 1998 Work Plan stated that where asphalt paving was present, the pavement and impacted subbase would be removed and discarded prior to collecting the surface soil sample. Why wasn't the gravel road base handled in a similar manner?

65. Page 5-2, Section 5.1.1 Surface Soil Sampling and Analysis, paragraph 1. Please refer to comment 36, above, concerning the loss of VOCs due to mixing the soil sample. Why weren't surface soil samples TP-SS11 and TP-SS12 analyzed for petroleum hydrocarbons?

66. Page 5-2, Section 5.1.2, Subsurface Soil Sampling and Analysis. This paragraph should also state that split-spoon samples were collected continuously for lithologic descriptions, observation for visible signs of contamination, and screening with a photoionization detector (PID), and that this information was used in selecting subsurface soil samples for laboratory analysis. Why weren't subsurface soil samples from TP-SB11 and TP-SB12 analyzed for petroleum hydrocarbons?

67. Page 5-4, Section 5.2.3, Water Level Measurements. See comment 8, above, regarding water level measurements and the resulting interpretation of groundwater flow direction.

68. Page 5-5, Section 5.3.1, Geology. Additional information concerning bedrock characteristics, such as the degree of fracturing, that would potentially affect groundwater flow and contaminant migration should be included here.

69. Page 5-5, Section 5.3.2, Hydrogeology. This section should include a discussion of the seeps along Back Channel - where they are located, how they relate to the current understanding of the stratigraphy and groundwater flow directions at the site, and how contaminant migration occurred and is likely to occur. We also note that "oily" or petroleum odors and elevated PID responses occur at or very near the contact between the fill material and the underlying Presumpscot Formation. This section should also consider the vertical distribution of contamination relative to groundwater flow direction. The discussion of water level changes in response to the tide on page 5-6 demonstrates the need to better define the relationship between groundwater and tide level measurements (see comment 8, above).

70. Pages 5-6 - 5-21, Section 5.4, NATURE AND EXTENT OF CONTAMINATION. This section presents the analytical detections of contamination in soils and groundwater at Site 32. The reader's understanding of the significance of the constituents detected (as well as those not detected) would be greatly enhanced if additional background information about the materials used, stored, and disposed at the various locations was provided (see comment 19, above).

71. Page 5-8, Section 5.4.1, Surface Soil, Building 306 - Transducer Shop, paragraph 1. Why wasn't surface soil sample TP-SS03 analyzed for GRO? This information should also be added to Section 5.1.1.

72. Page 5-9, Section 5.4.1, Surface Soil, Building 154 - Transportation and Equipment Storage Building, paragraph 2. It appears that the first sentence belongs in the "Downgradient Edge of Site" section. In addition, the maximum DRO detection at Site 32 was 6200 mg/kg in TP-SB02-1113. The text should be corrected.

73. Page 5-10, Section 5.4.1, Surface Soil, Old Building 98 - Combustibles Storage Area. Were both 4,4'-DDE and 4,4'-DDD detected at this location? Please clarify. It appears that the highest concentration of 4,4'-DDD detected at Site 32 occurred at this location.

74. Page 5-12, Section 5.4.2, Subsurface Soil, Upgradient. *"No PAHs, pesticides, or PCBs were detected in upgradient locations."*

This statement implies that samples were collected at upgradient locations in addition to TP-SB01. If that is the case, these locations must be clearly identified in the text and on the appropriate maps. Please clarify or correct. Given the extent of Site 32, it would be appropriate to have more than one upgradient location.

75. Page 5-13, Section 5.4.2, Subsurface Soil, Building 158 - Automotive Repair Shop, paragraph 1. In addition to describing DRO concentrations, this paragraph should include a reference to the sheen noted during sampling between 19 and 15 feet bgs at TP-SB02.

76. Page 5-15, Section 5.4.2, Subsurface Soil, Downgradient Edge of Site 32, paragraph 1. In addition to describing DRO concentrations, the petroleum odor at 14 feet bgs and PID responses at 14 and 19 feet bgs at TP-SB07 should also be noted.

77. Page 5-15, Section 5.4.2, Subsurface Soil, Downgradient Edge of Site 32, paragraph 2. There is an extra word (well or slightly) in the fourth line.

78. Page 5-15, Section 5.4.2, Subsurface Soil, Downgradient Edge of Site 32, paragraph 4. The number of site-wide maximum concentrations of contaminants at the downgradient edge of Site 32 highlights the importance of understanding how the site's hydrogeologic characteristics control contaminant migration that affects offshore areas (see comment 69, above).

79. Page 5-16, Section 5.4.2, Subsurface Soil, Building 154 - Transportation and Equipment Storage Building, paragraph 1. In addition to the discussion of petroleum hydrocarbon detections, the text should also mention the oily smell noted at 14 feet bgs at TP-SB06.

80. Page 5-18, Section 5.4.2, Subsurface Soil, Old Building 98 - Combustibles Storage Area, paragraph 3. The maximum concentrations for 4,4'-DDD and 4,4'-DDT occur in the surface soil sample at TP-SB15 and at TP-SB17, respectively. Please clarify or correct.

81. Page 5-19, Section 5.4.2, Subsurface Soil, Building 176 - Torpedo Overhaul Storage Area, paragraph 1. "*The inorganics detected at this site were ... in many cases less than site background concentrations.*"

This statement indicates there is a potential problem with the selection of background location. We look forward to the resolution of this and other issues relating to background locations (see comment 3, above). This comment also applies to the statement about inorganics detected at Building 162, the Electrical Substation.

82. Pages 5-19 - 5-21, Section 5.4.3, Groundwater. This section needs a more in-depth discussion of hydrogeologic controls on contaminant migration. This includes information about how seeps along Back Channel relate to the hydrogeology of Site 32 and how onshore contamination impacts offshore receptors, as well as a description of potential preferred contaminant migration pathways. (see comment 69, above).

83. Page 5-20, Section 5.4.3, Groundwater, paragraph 2. This paragraph focuses on the information presented in Tables 5-6 and 5-7. Virtually none of the MDLs listed in Table 5-6 were met, and, as we note in comment 63, above, the relatively high numerical detection limits also exceed screening criteria in several instances.. So enumerating positive detections in the text and in Table 5-7 is a bit misleading. The actual number (and possibly magnitude) of exceedances may be greater than what's identified Table 5-7 and elsewhere in the report. The Navy must explain why the MDLs were not attained and how the elevated numerical detection limits affect confidence in the risk screening process.

84. Pages 5-21 - 5-27, Section 5.5, RISK ASSESSMENT SCREENING - COMPARISON WITH MPSs AND OTHER CRITERIA. A number of our previous comments (for example 2, 3, 4, 8, 11, 36, 41, 83) apply to the validity and completeness of the interpretations in this section. We look forward to revisiting the risk assessment screening once further definition of the extent of contamination and delineation of groundwater flow and contaminant migration is completed.

85. Page 5-22, Section 5.5.1, Surface Soil. A third bullet should be added to address DRO and GRO exceedances of State standards, since residential use of the site and groundwater is being considered. The text in the following paragraph should also address the DRO and GRO exceedances.

86. Page 5-22, Section 5.5.1, Surface Soil, paragraph 3. *"If a quantitative risk assessment were to follow the screening process, chemicals that exceeded only site-specific background values would be eliminated from further evaluation. ... Additionally, any chemical concentrations in excess of the USEPA Region III residential RBCs but below background concentration would also be eliminated from further evaluation."*

This statement is at odds with the procedure presented in item 4 on page 14-6 of the April 1998 Work Plan. Exceedances of background or RBCs in soil were to be followed up with a risk assessment, not dropped entirely from consideration. Please clarify.

87. Page 5-23, Section 5.5.1, Surface Soil, paragraph 1. *"Because no SSLs for transfer from soil to groundwater exist for any 2-butanone,..., these compounds could not be further evaluated for migration potential."*

How will the Navy address the migration potential of these compounds?

88. Page 5-23, Section 5.5.1, Surface Soil, paragraph 2. *"Because no SSLs for transfer from soil to air exist for any 2-butanone,..., these compounds could not be further evaluated for migration potential."*

How will the Navy address the migration potential of these compounds, as well as the potential risks associated with air-born contaminants?

89. Page 5-23, Section 5.5.2, Subsurface Soil. A sixth bullet should be added to address DRO and GRO exceedances of State standards, since residential use of the site and groundwater is being considered. The text in the following paragraph should also address the DRO and GRO exceedances.

90. Page 5-24, Section 5.5.2, Subsurface Soil. Comment 86, above, applies to this section.

91. Page 5-25, Section 5.5.3, Groundwater. A fourth bullet should be added to address DRO exceedances of State standards, since residential use of the site and groundwater is being considered. The text in the following paragraph should also address the DRO exceedances.

92. Page 5-26, Section 5.5.3, Groundwater, paragraph 2. Comment 86, above, applies to this section.

93. Pages 5-26 - 5-27, Section 5.5.4, Risk Summary Screening. Comments 84 through 92 apply to this section.

94. Page 5-81, Figure 5-3. Is the mottled silt and clay at the southern end of the cross section the Presumpscot Formation? If so, it should be labeled as such and the contacts beneath the historical shoreline location adjusted. The northern end of the cross section should be extended to include the slope of the shoreline.

95. Page 5-83, Figure 5-4. Monitoring well FA-01DB should be added to the cross section.

96. Pages 5-85 & 5-87, Figures 5-5 & 5-6. Water level information for well FA-01 should be added to these figures.

97. Page 6-2, Section 6.1, SITE 30 (BUILDING 184). *"Based on the findings of the site screening, the horizontal extent of contamination appears to be adequately defined."*

As we noted in a previous comment, it is premature to state that the horizontal extent of contamination is defined, particularly when the Navy acknowledges that the source of the contamination at Building 184 has not yet been identified, and that additional investigations will be required. Additional concerns are also identified in comment 8, above.

98. Pages 6-3 & 6-4, Section 6.2, SITE 31 (WEST TIMBER BASIN), paragraphs 4 & 1. *"There are currently no screening criteria with which to compare the TPH soil data."*

Comment 11, above, applies to these statements.

99. Page 6-4, Section 6.2, SITE 31 (WEST TIMBER BASIN), paragraph 2. *"None of the detected concentrations are greater than one order of magnitude of any screening criteria."*

While this statement may be true, it also appears to be an attempt to downplay to risks posed by contaminants at the Site. We are not aware that the Navy has determined the total risk posed by all the contaminants. In addition, as we have pointed out in earlier comments, and as the Navy has stated elsewhere in the report, the extent of contamination at Site 31 has not yet been fully defined. This statement requires clarification.

100. Page 6-4, Section 6.2, SITE 31 (WEST TIMBER BASIN), paragraph 5. As we pointed out in comment 12, above, additional investigations at the site should not be limited to the pickling tanks, but should also include the WTB-SB03 and WTB-SB04 area, bedrock locations, and the potential impact of Site 31 on offshore receptors.

101. Page 6-5, Section 6.2, SITE 31 (WEST TIMBER BASIN), <u>Site 21</u>. The Navy is recommending no further action for groundwater at Site 21 as "... *no chemicals attributable to previous activities at Site 21 were detected..., other than metals which have been consistently detected in groundwater across the shipyard.*" This statement illustrates the difficulty in establishing appropriate background locations at the shipyard (see comment 3, above). Additional discussion is required before accepting the no further action alternative for Site 21. If metals are contaminants of concern for Site 21, and the metals were detected in the only well installed specifically to monitor potential migration downgradient of Site 21, then it seems appropriate for the Navy to demonstrate that the metals detected in groundwater are not attributable to Site 21 before accepting a no further action alternative.

102. Pages 6-5 - 6-7, Section 6.3, SITE 32 (TOPEKA PIER). The discussion on these pages must include detections and exceedences for GRO and DRO, and should also address the issues regarding MDLs/numerical detection limits/screening criteria exceedances discussed in comment 83, above. This section should also touch upon the relationship between groundwater contamination at Site 32 and contaminants detected in seeps and sediment along the shore of the Back Channel. Previously-collected data should be integrated with the results of the 1998 investigation.

103. Page 6-7, Section 6.3, SITE 32 (TOPEKA PIER). As we noted in comment 14, above, we disagree that additional investigations are only needed in the vicinity of Buildings 158 and 154, and that the remaining areas of Site 32 do not require further work. The highest concentrations of mercury and lead, which also exceed screening criteria, occur at TP-SB09 and TP-SB10, respectively. Therefore, these areas must be evaluated as well. As we pointed out in comment 8, above, we have concerns regarding the interpretation of groundwater flow directions based on the

water levels measured in tidally-influences wells. Uncertainties regarding groundwater flow directions must be addressed. Given the proximity of Site 32 to the shore, the additional investigations must also assess the potential impact on offshore receptors, particularly the effects of the sewer and drainage pipe discharges to Back Channel.

104. Pages 6-7 & 6-8, Section 6.3, SITE 32 (TOPEKA PIER). We are not sure what the Navy is trying to convey with the last paragraph is this section. Furthermore, we disagree with the statement that "*The only location which showed evidence of material (metal fragments, railroad tie) other than fill was boring TP-SB02, located in front of Building 158.*" A review of the boring logs in Appendix B reveals a variety of non-natural materials in at least 9 other boring locations scattered about Site 32. These materials include glass, porcelain, brick, copper pieces, a brass nugget, granular metallic material (grit?), metal, metal fragments, slag?, copper dust, cinders, coal fragments, and wire. Furthermore, the logs record sheens, and oily, creosote, and petroleum odors at various depths. This passage requires clarification.

If you have any questions regarding the comments above, please give me a call at 207-777-1049.

Sincerely,

Carolyn A. Lepage

Carolyn A. Lepage, C.G.
President

cc: Iver McLeod, DEP
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