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NAS SOUTH WEYMOUTH
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Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

January 30, 2001

Caretaker Site Office
NAS South Weymouth
PO Box 169
1134 Main Street
South Weymouth, Massachusetts 02190

Re: Data Gap Analyses
Draft Phase II Comprehensive Site Assessment Report
Nomans Land Island, Chilmark, Martha's Vineyard, Massachusetts

Dear Navy personnel and contractors,

This letter and attachment transmits our comments on the Draft Phase II Comprehensive Site Assessment Report for Nomans Land Island. Data gaps analyses on the Draft Phase II report were requested by Mr. Jeff Day on behalf of Wampanoag tribal members in mid-December 2000 during the Consultation Meeting between the US Navy and the Wampanoag Tribe and other meetings. Our data gaps table was discussed with Navy personnel and contractors in a phone conversation on January 23, 2001. Based on that discussion, we have revised the draft data gaps table that was previously submitted to the tribe and Navy. Because of the short time frame for submission of comments, a more complete discussion of these topics will be provided as a health consultation after January 31, 2001, the end of the public comment period for the Phase II report.

Based upon our review of the Phase I and II documents, further sampling and analyses are needed to address public health issues. Although the investigations have been conducted so that Nomans Land Island could be transferred to the US Fish and Wildlife Service for use as an unmanned wildlife refuge, protection of public health requires a broader scope than has been considered thus far. Specifically, off site receptors and associated pathways have not been evaluated and only current and future receptors are evaluated for human health risk characterization as noted in the Draft Phase II on page 6-2. Off-site receptors and the food chain pathway need further consideration. Specifically, consumers of seafood (resident fish species and shellfish) taken from the Nomans Land Island area and possibly consumers of birds from the island should be considered. Potential past exposures to contaminants in the air pathway have also not been considered for off-site receptors such as residents of Martha's Vineyard. It is our suggestion that the scope of work be broadened to include off-site receptors and associated pathways.

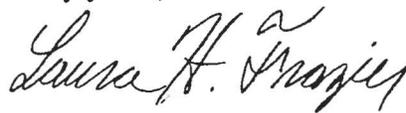
Please note that ATSDR's review of the current Navy documents is from a public health perspective. These comments are not a strict technical review of the documents and characterization that has been carried out. They are more generalized comments relating to information that may be needed to thoroughly evaluate potential environmental pathways

Page 2 - Navy personnel and contractors

of exposure and to address the tribe's concerns about potential health problems. Determination of a person's exposure to chemicals is the first step in determining any potential health threats. The presence of chemicals in the environment is not, in itself, a health threat unless the chemicals are present at sufficient concentrations and have a means of reaching a population. The necessary data must exist (or be obtained) for a particular pathway so that we can consider whether or not adverse health effects could occur.

We look forward to further discussions on these topics and further collaboration as we prepare a health consultation. The rapid provision of our data requests has been greatly appreciated.

Sincerely yours,

A handwritten signature in cursive script that reads "Laura H. Frazier".

Laura H. Frazier
Environmental Health Scientist

Attachment

cc: Kathleen Buchi, US Army Center for Health Promotion and Preventive Medicine
Rod Warner, Northern Division Naval Engineering Command
Jeff Day, Wampanoag Tribe of Gay Head (Aquinnah) Headquarters
Bob Campbell, MA Department of Environmental Protection
Tim Prior, US Fish and Wildlife Service
Stanley Chin, US Environmental Protection Agency
Mickey Rathsam, Indian Health Service
Suzanne Condon, MA Department of Public Health
Andrea Lunsford, Navy Environmental Health Center
Freddy Rundlet, Wampanoag Tribe of Gay Head

Note: These comments are provided from a review of the Phase I and II reports. They are from the perspective of analyses of pathways of exposure that need to be evaluated to answer specific public health questions. Although some data gaps do not have a possible follow up action, they are listed as an acknowledgment of data limitations.

Nomans Land Island, Chilmark, MA

January 2001

Table of Data Gaps Review of Phase I and II Reports, Dec 2000-Jan.2001		
Community Concern	Data Gap	Explanation and Notes
<p>Unexploded Ordnance (UXO)</p> <ul style="list-style-type: none"> - Safety of individuals who use Nomans Land Island (e.g., unauthorized current use or possible permitted future use). 	<p>Locations of Explosives and UXO</p> <ul style="list-style-type: none"> - Location and extent of subsurface and submerged UXO on the Island. - Maximum predicted depth of UXO (live and inert) based on munitions type, soil type, etc. - Location and extent of UXO offshore. 	<p>Surface UXO have been removed from on-shore and offshore (out to the mean low tide mark) locations.</p> <p>Shoreline removals of surface UXO near pond and wetland areas have occurred on the island. A thorough assessment of the best available technologies used to identify UXO in subsurface locations on the island or below the low tide mark offshore should be considered. Existing technologies for subsurface and submerged UXO locations should be explored in conjunction with any changes in future land use of the Island.</p>

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<p>Munitions See-Comments above under Unexploded Ordnance (UXO)</p>	<p>Munitions/Target Information</p> <ul style="list-style-type: none"> - Types of munitions used prior to 1955. - Locations of targets pre-1967 (no record of targets when live bombs were used prior to 1950s). - Available information documenting the specific types of explosives used. Is there any record of bulk explosives or submunitions (grenades, mines filled with explosives, etc.) ever being used or buried? 	<p>Although some of this information is known, no early data on the types of munitions used and locations of targets are documented.</p> <p>The Phase I report contains a Summary of Ordnance Debris (Table 3-1) and some record of authorized ordnance is given on p. 2-9 of the Phase II report.</p> <p>Navy representatives indicate that historical records and site information to date give no evidence of dumps or buried ordnance on the island.</p>

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<p>Foodchain Concerns regarding subsistence and commercial fishing activities as well as other food chain contamination.</p> <ul style="list-style-type: none"> - Contamination of marine fish and shellfish offshore. - The potential impact on newly developed fisheries for aquaculture near the Wampanoag reservation. - Contamination of vegetation that could potentially bio-accumulate up the food chain. - Contamination of wildlife that might migrate from Nomans and be consumed. 	<p>Foodchain Pathway: <i>Potential contamination in:</i></p> <ul style="list-style-type: none"> - Marine fish offshore (e.g., flounder, fluke) - Shellfish near the Island (e.g., quahogs, scallops, oysters, clams, lobster) - Upon initial reviews of data, there is no evidence to indicate that fisheries developed for aquaculture on Martha's Vineyard would be impacted by migrating contaminants from Nomans Island. - Vegetation including cranberry bogs - Wildlife (e.g., non-migratory birds and water fowl) 	<p>Fish/Shellfish: The Island is not fenced or guarded and, based on discussions with locals, trespassing onto the island or in restricted zones occurs on a routine basis. Locals are known to set lobster traps, fish, and harvest shellfish in the restricted areas close to the shoreline. Some contaminants (e.g. some metals or explosives) may bioaccumulate in fish and shellfish.</p> <p>According to Navy representatives, there are no edible fish in the freshwater ponds on the Island.</p> <p>Vegetation: Since uptake of contaminants is plant-specific, those plants most likely to be eaten by wildlife or humans should be considered for further evaluation. Some plants may uptake or absorb contaminants (e.g, some metals or explosives) particularly into root and leafy tissues.</p> <p>Wildlife: The Island supports a wide variety of wildlife, some of which is known to be consumed by locals on occasion. Contaminants can accumulate in the edible tissues of these animals.</p>

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Air Pollution/ Contamination Health effects from past bombing activities and burns, either prescribed or non-prescribed.	Air Pathway <ul style="list-style-type: none"> - Identification of vapors, smoke, gases, released from explosives. -The Phase II does not contain information on wind velocities and directions during prescribed burns. - The Phase II report does not contain data or information associated with the extent of bombing activities on Nomans Land Island (e.g., frequency of bombing activities, the number of bombs dropped during the time period of interest) or an inventory of the specific types of ordnance used. 	Air Monitoring Air monitoring was not conducted during bombing events or non-prescribed burns or prescribed burns. If any future prescribed burns are conducted, air monitoring of chemical data could be collected at stations on Nomans Land Island and on Martha's Vineyard. Meteorological data during past prescribed burns could be provided. Air Modeling Information pertaining to the extent of bombing activities is necessary in order to develop an air model to assess whether past exposure via the air pathway may have occurred at harmful levels to residents of Martha's Vineyard. The model could also assist with evaluating potential exposures from burn events.

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<p>Soil/Sediment Exposure</p> <p>Potential health effects from being exposed to soil/sediment contaminants during unauthorized or future permitted use of the Island.</p>	<p>Soil/Sediment Pathway</p> <p>Horizontal distributions of contaminants have not been determined in all parts of the island. Soil samples were taken primarily in known target areas (not all past target areas are known).</p> <p>The vertical depth of UXO and explosives contamination in soil has not been determined.</p> <p><i>Comprehensive analyses for explosives -</i></p> <p>Have all explosive contaminants that could be present been looked for? (Including white phosphorus, nitroguanidine, and nitrate esters).</p> <p>Were enough biotransformation products of explosives analyzed (such as MNX, DNX, TNX, hydrazine)?</p>	<p>Sampling Methodology</p> <p>Sampling of soil in target areas has detected elevated concentrations of lead and zinc. Some explosives (e.g., RDX, TNT, and HMX) were detected in a small number of the soil samples collected. Low levels of VOCs, pesticides, and extractable petroleum hydrocarbons have also been detected in some soil samples.</p> <p>The distribution of explosives in soil is extremely heterogeneous as the concentrations within a few meters may vary significantly. Explosives are usually concentrated in the upper 15 cm. Grab and composite soil samples of 0-6" were taken. The 1.5 foot interval was a discrete sampling horizon and was the only subsurface zone sampled.</p> <p>EPA method 8330 was used to analyze the concentrations of explosives. We do not know if there is any evidence that other explosives were used on the Island that may not be detected using this EPA method.</p>

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<p>Surface water and Groundwater Contamination Surface water runoff and groundwater infiltration into the marine ecosystem and Martha's Vineyard drinking water aquifer.</p>	<p><i>Surface water/groundwater Pathway</i> - Current data indicate that most of the contamination does not reside in these pathways. Past exposures are unlikely because neither surface water nor groundwater have been used as a drinking water source on the Island. Initial information suggests no connection between the drinking water aquifers on Martha's Vineyard and groundwater on Nomans Land Island.</p>	<p>There are currently no known human uses for groundwater or surface water on the island. Groundwater can discharge directly to surface water (including island ponds and into the ocean). Recent surface water and groundwater data (1998 to current) are in the Phase I and II reports.</p>
<p>Adequate background samples Adequate background samples may not exist on the island due to past land use as a bombing range.</p>	<p><i>Adequate background samples</i> - Consideration should be given to whether or not adequate background samples exist on or near the island. However, the health impact of contaminant levels (background or not) should be considered.</p>	<p>Nearby areas with similar geology and environmental characteristics (e.g., Elizabethan Islands) should be considered. These off-site background samples could be compared to background samples from Nomans Land Island. Navy representatives indicate that the health implications of contaminant levels were considered for all the data generated for the Phase II report.</p>

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Priority Concerns for Protection of Human Health for Nomans Land Island

-Future safety of any visitors, either authorized or unauthorized, to the Island. If authorized visitors are on the island, there should be clearly designated areas that are free from UXO.

- Human health risks from potential exposure via the foodchain and air pathway. The health of residents on Martha's Vineyard may have been or be impacted by contaminants coming from Nomans Land Island.

-Some foreseeable and reasonable future uses of Nomans Island may not have been considered in the Phase II.

The physical hazard posed by the UXO is a major concern for people traversing the island.

Since there are data gaps in the pathways leading to human exposure, only an incomplete picture of human exposure (and therefore potential health risk) currently exists. The Phase II report does not address all currently known exposure pathways. It also does not address more sensitive segments of the population such as children and the elderly.

The approved reuse of the land is an uninhabited wildlife refuge managed by USFWS. Past use was as a bombing and gunnery range. Future use of the island may include limited controlled access by authorized visitors (it may include cultural/religious ceremonies, etc.). Some possible future uses have not been considered (e.g., use of land as burial grounds).

UXO= unexploded ordnance

USFWS= U.S. Fish and Wildlife Service

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SOURCES OF INFORMATION:

Northern Division Naval Facilities Engineering Command 1998. Naval Air Station South Weymouth, Environmental Baseline Survey for Transfer (EBST) Nomans Land Island, March 12, 1998.

Foster Wheeler 1998. Survey Report for the Radiological Screening Survey on Nomans Land Island, September 2, 1998.

Foster Wheeler 1998. Release Abatement Measure 120-Day Status Report (Ordnance Debris Removal), Nomans Land Island, September 17, 1998.

Foster Wheeler 1998. Phase I - Limited Site Investigation Report, Nomans Land Island, October 1, 1998.

Foster Wheeler 2000. Draft Phase II - Comprehensive Site Assessment Report, Nomans Land Island, November 2000.