Environmental Assessment for

Site Development for USCG Station Eastport Housing Project

Contract Number: 70Z05018DAMFWHD02

Task Order: 70Z04719FPEPTEV00

Prepared For:

United States Coast Guard
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JOINT VENTURE

August 4, 2020

UNITED STATES COAST GUARD (COAST GUARD) FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR USCG STATION EASTPORT HOUSING PROJECT IN PERRY, MAINE

The Coast Guard proposes to construct eight single-family housing units (Design Alternative 3) on a 75-acre site at 576 Shore Road, Perry, Maine 04667 (County of Washington) for the purpose of providing family housing for Coast Guard personnel assigned to Station Eastport. This Proposed Action also includes the construction of a 1,000 square foot maintenance building as well as all associated roads, sidewalks, stormwater controls, streetlights, utilities, and typical infrastructure to support this community.

Summary of the results of the environmental impact evaluation: The Environmental Assessment (EA) prepared for this proposal presents the purpose and need for the action, the Proposed Action and its alternatives, a description of the affected environment, and an analysis of direct, indirect, and cumulative environmental consequences. Based on the findings of the EA, the Coast Guard concluded that no significant impacts would occur from implementation of the Proposed Action.

Mitigation commitments (including monitoring), if any, that will be implemented to reduce otherwise significant impacts*:* No significant impacts have been identified; therefore, no mitigation commitments are required.

This FONSI is based on the attached contractor-prepared EA which has been independently evaluated by the Coast Guard and determined to adequately and accurately discuss the environmental issues and impacts of the Proposed Action and provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The Coast Guard takes full responsibility for the accuracy, scope, and content of the attached contractor-prepared EA.

I reviewed the EA, which is the basis for this FONSI, and submitted my written comments to the Proponent.

HYLTON.RICHARD.D.JR.1229466069 Digitally signed by HYLTON.RICHARD.D.JR.1229466069 Date: 2020.08.05 15:59:37 -04'00'

Richard D. Hylton, P.E. Environmental Reviewer	Environmental Engineer Title/Position	Level II NEPA Warrant Program

I reviewed the EA, which is the basis for this FONSI, and submitted my written comments to the Proponent.

Digitally signed by AMUNDSON.DEAN.JAY.1274011862 Date: 2020.08.04 10:24:41 -07'00'

Dean Amundson Senior Environmental Professional	Environmental Protection Specialist Title/Position	Level III NEPA Warrant Program

In reaching my decision/recommendation to implement the Coast Guard's Proposed Action, I considered the information contained in this EA/FONSI and considered and acknowledge the written comments submitted to me from the Environmental Reviewer(s). Based on the information in the EA and this FONSI document, I agree that the Proposed Action as described above, and in the EA, will have no significant impact on the environment.

Digitally signed by BARRESI.JOHN.F.JRII.1187016629 Date: 2020.08.13 16:16:08 -04'00'

Captain J. F. Barresi Proponent	Commanding Officer – Facilities Design & Construction Center Title/Position

UNITED STATES COAST GUARD (COAST GUARD) ENVIRONMENTAL ASSESSMENT FOR USCG STATION EASTPORT HOUSING PROJECT IN PERRY, MAINE

The Coast Guard Final Environmental Assessment (FEA) was prepared in accordance with Environmental Planning Policy, COMDTINST 5090.1 (series), and is in compliance with the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321 to 4370h) and the Council on Environmental Quality regulations dated 28 November 1978 (40 CFR §§ 1500-1508).

This FEA serves as a concise public document to briefly provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). This FEA concisely describes the Proposed Action, the need for the proposal, the alternatives, and the environmental impacts of the proposal and alternatives. This FEA also contains a comparative analysis of the action and alternatives, a statement of the environmental significance of the preferred alternative, and a list of the agencies and persons consulted during the FEA preparation.

DOBBINS-NOBLE.LESLEY.CAROLE.1047416848
Digitally signed by DOBBINS-NOBLE.LESLEY.CAROLE.1047416848
Date: 2020.08.04 12:35:18 -04'00'

Lesley Dobbins-Noble Document Preparer	Environmental Protection Specialist Title/Position	Level II NEPA Warrant Program

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I reviewed the EA and submitted my written comments to the Proponent.

HYLTON.RICHARD.D.JR.1229466069
Digitally signed by HYLTON.RICHARD.D.JR.1229466069
Date: 2020.08.05 15:58:09 -04'00'

Richard D. Hylton, P.E. Environmental Reviewer	Environmental Engineer Title/Position	Level II NEPA Warrant Program

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I reviewed the EA and submitted my written comments to the Proponent.

Digitally signed by AMUNDSON.DEAN.JAY.1274011862
Date: 2020.08.04 10:28:19 -07'00'

Dean Amundson Senior Environmental Professional	Environmental Protection Specialist Title/Position	Level III NEPA Warrant Program

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In reaching my decision/recommendation on the Coast Guard's Proposed Action, I considered the information contained in this FEA and considered and acknowledge the written comments submitted to me from the Environmental Reviewer(s).

Digitally signed by BARRESI.JOHN.F.JRII.1187016629
Date: 2020.08.13 16:17:16 -04'00'

Captain J. F. Barresi Proponent	Commanding Officer – Facilities Design & Construction Center Title/Position

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LIST OF ACRONYMS, SYMBOLS, AND ABBREVIATIONS

%	percent
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
AOR	area of responsibility
AOS	Alternative Organizational Structure
AST(s)	above-ground storage tank(s)
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CEU	Civil Engineering Unit
CFR	Code of Federal Regulations
CHA	Critical Housing Area
COMDTINST	Commandant Instruction Manual
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
dB	decibels
dB_A	A-weighted sound level measured in decibels
dB_C	C-weighted sound level measured in decibels
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
˚F	degrees Fahrenheit
FDCC	Facilities Design and Construction Center
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ft	foot (feet)
ft^2	square-foot (-feet)
GSS	groundwater supply study
HMA	Hazardous Materials Assessment
HMSA	Housing Market Survey and Analysis
in	inch(es)
IDA	International Dark-Sky Association
LBP	lead-based paint
MAAQS	Maine Ambient Air Quality Standards
MCP	Maine Coastal Program

MDIFW	Maine Department of Inland Fisheries & Wildlife
MEDEP	Maine Department of Environmental Protection
MEDOT	Maine Department of Transportation
MHPC	Maine Historic Preservation Commission
MUTS	Marion Users Transfer Station
NAAQS	National Ambient Air Quality Standards
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIA	nitrate impact assessment
NNE	Northern New England
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
PPTG	Pleasant Point Tribal Government
RCD	reasonable commuting distance
SHPO	State Historic Preservation Office
SILs	Significant Impact Levels
SIP	State Implementation Plan
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST(s)	underground storage tank(s)

FOREWORD

The draft Environmental Assessment (EA) for Site Development for USCG Station Eastport Housing Project was released for public review and comment first on 22 August 2019 through 23 September 2019 and then again on 13 November 2019 through 13 December 2019. Changes in this final EA reflect responses to all substantive comments made on the draft EA during the public comment periods as well as US Coast Guard (USCG) refinements to the Proposed Action and associated analyses. Public comments are summarized and the responses to them are included in **Appendix B**.

While most sections in the EA were changed in some manner between the draft and final versions, many of those changes entailed minor edits to improve clarity or edits to correct cross-references to sections and appendices. The key changes between the draft and final EAs follow.

- **Section 1.0** (*Purpose and Need for Action*):
  - **Figure 1-1** was modified to show the project site in relation to USCG Station Eastport.
  - **Figure 1-2** was modified to show the full extent of the project site.
  - Additional text was added to **Section 1.5** to further amplify the importance of ensuring affordable housing to the USCG as it relates to mission readiness.
  - **Section 1.6** was edited to include details of the public involvement process, to include two public review and comment periods for the draft EA along with a public meeting, and to include a list of agencies and Federally recognized tribes consulted.
- **Section 2.0** (*Proposed Action and Alternatives*):
  - As a result of public comments received regarding the appearance of the homes proposed to be constructed, a new alternative was added that entailed the construction of eight single family homes. Previously, the only eight-home alternative analyzed consisted of four duplex units. **Figure 2-3** was added to visually depict the conceptual layout for this new alternative.
  - Descriptions of the features entailed in Design Alternatives 1 and 2 were edited to correct incorrect information included in the draft EA. Most notably, the size of the maintenance building was reduced from 5,000 square feet to 1,000 square feet and the community center was removed altogether.
  - Many public comments were received regarding the criteria the USCG used to evaluate real estate parcels prior to the ultimate purchase of the property at 576 Shore Road, now known as the project site. While the purchase of the property occurred in 2018, prior to the development of this EA, text was added to **Section 2.5**, *Alternatives Identified but not Carried Forward for Detailed Analysis*, and to **Appendix C**, *USCG Station Eastport Housing Site Selection Background and Criteria*, to provide historic information on the site selection process utilized.

  - Conservation measures and best management practices were moved from the draft EA's **Section 7.0**, *Special Procedures*, to a new **Section 2.6**, *Conservation Measures and Best Management Practices*, to better emphasize their inclusion in the Proposed Action. As a result of public comment, a measure was added regarding the establishment of a real estate easement by the USCG to allow continued pedestrian access to the Rest Lawn Cemetery across the rear of the project site.
- **Section 3.0** (*Affected Environment*):
  - Reference to School Union 104 was incorrectly included in **Section 3.1.7**, *Schools*, of the draft EA. The new text indicates that at the secondary school level, Perry, Maine students attend Alternative Organizational Structure (AOS) #77 public school, Shead High School, of Eastport.
  - A supplemental groundwater evaluation was conducted in 2020 as a result of comments received from the public concerning the potential effects on levels of water in drinking water wells of abutting properties. Information regarding this study was added to **Section 3.1.8**, *Utilities*.
  - The scope of analysis of potential impacts on environmental justice in **Section 3.1.9**, *Environmental Justice*, was widened from a 1-mile radius of the project site to include all of Washington County. This change was made to ensure broadest consideration of low-income, minority, and/or tribal populations when analyzing potential effects of the Proposed Action.
  - A new resource area, *Aesthetics and Visual Resources*, was added to **Section 3.1.10**. This section describes the current visual and landscape features of the area on and surrounding the project site.
  - Details regarding the Proposed Action's regulatory compliance with the Farmland Protection Policy Act (FPPA) were added to **Section 3.2.2**, *Geology and Soils*. The USCG consulted with the Natural Resources Conservation Service and received confirmation that the Proposed Action at the project site was in full compliance with the FPPA.
  - **Section 3.5**, *Cultural Resources*, was modified to contain just two subsections, *Historic Resources* (**Section 3.5.1**) and *Native American/Tribal Resource*s (**Section 3.5.2**). This modification was made to align with terminology for applicable resource areas outlined in Federal regulations for the implementation of the National Historic Preservation Act at 36 Code of Federal Regulations (CFR) §§800 et seq.
- **Section 4.0** (*Environmental Consequences*):
  - Analysis throughout this section was broken down to more clearly demonstrate the differences between potential impacts of the different alternatives. In addition, analysis of the new design alternative, the construction of eight single family housing units, was analyzed for each resource area.

- Analysis of transportation in **Section 4.1.3**, *Transportation*, was revised based on statistics from the Federal Highway Administration. These statistics indicate that the average American household completes just under nine vehicular trips per day.
- Public comments were received regarding the lack of local property tax revenue from USCG residents of the proposed new housing. This lack of tax revenue will affect the amount of funding available to local public schools when children living in the new homes attend those schools. **Section 4.1.7**, *Schools*, was revised to add detail regarding potential student/teacher ratios and also to conclude that minor negative impacts to schools are expected from the lack of incoming tax revenues as a result of the Proposed Action.
- The USCG would not utilize municipal solid waste disposal. The text of **Section 4.1.8**, *Utilities*, was edited to reflect the fact that the USCG plans to use contracted waste disposal from the project site if the Proposed Action is implemented.
- A supplemental groundwater evaluation was conducted in 2020 as a result of comments received from the public concerning the potential effects on levels of water in drinking water wells of abutting properties. The results of this study were added to **Section 4.1.8**, *Utilities*.
- Figures to reflect poverty rates and minority population figures for Washington County as a whole replaced the figures for the Town of Perry that were included in the draft EA in **Section 4.1.9**, *Environmental Justice*. This change was made to ensure broadest consideration of low-income, minority, and/or tribal populations when analyzing potential effects of the Proposed Action.
- Analysis of *Aesthetics and Visual Resources* was added to a new section, **Section 4.1.10,** to ensure consideration of potential impacts to visual landscape features as a result of the Proposed Action.
- Text was added to **Section 4.2.4**, *Noise*, to support findings that noise created during construction at the project site would not jeopardize the health or welfare of the public near the project site.
- A list of the likely reasons that fecal coliform contamination was found in groundwater at the project site was added to **Section 4.2.5**, *Hazardous Materials/Hazardous Waste*.
- A description of the requirements of the Maine Coastal Program (MCP) were added to **Section 4.4**, *Land Use*. These project milestones must be met in order for MCP staff to evaluate a Federal consistency package pursuant to the enforceable policies of the MCP.
- **Section 4.5**, *Cultural Resources*, was modified to contain just two subsections, *Historic Resources* (**Section 4.5.1**) and *Native American/Tribal Resource*s (**Section 4.5.2**). This modification was made to align with terminology for applicable resource areas outlined in Federal regulations for the implementation of the National Historic Preservation Act at 36 CFR §§800 et seq. Furthermore, **Section**

4.5.2 was updated to detail communication with Federally recognized tribes that occurred since the release of the draft EA.

- **Section 6.0** (*Summary of Findings*):
    - Summaries of findings for all resource sections that changed between the draft EA and the final EA were revised.
- **Appendix A** (*Public Notice Documentation*):
    - Documentation of public notices provided since the release of the draft EA is included.
- **Appendix B** (*Public Comments and Responses to Comments*):
    - This appendix was added since the release of the draft EA and includes a table containing the comments received and the USCG's responses.
- **Appendix C** (*US Coast Guard Station Eastport Housing Site Selection Background and Criteria*):
    - This appendix was added since the release of the draft EA to provide readers with requested background information on the criteria used for the selection of the project site for purchase, prior to the development of this EA.
- **Appendix D** (*Site Evaluation Report*):
    - This appendix was added since the release of the draft EA to provide readers with additional technical information on the groundwater supply study, nitrate impact assessment, wetland delineation, and subsurface wastewater disposal evaluation performed at the project site.
- **Appendix E** (*Supplemental Groundwater Evaluation Report*):
    - This appendix was added since the release of the draft EA and presents a summary of the supplemental groundwater evaluation undertaken to assess the effects of the pumping of groundwater in the area of the proposed development and surrounding areas.
- **Appendix F** (*Farmland Protection Policy Act Concurrence Package*):
    - This appendix was added since the release of the draft EA and contains a Farmland Conversion Impact Rating and associated correspondence between the Natural Resources Conservation Service and the USCG.
- **Appendix G** (*Threatened, Endangered, and Sensitive Species Information and Correspondence*):
    - This appendix consolidates information contained in appendices A through D of the draft EA.
- **Appendix H** (Preliminary Cultural Resources Study and Tribal Consultation Letters/Responses):
    - This appendix contains comments received from the Passamaquoddy Tribe and Houlton Band of Maliseet Indians since the release of the draft EA and the USCG's responses.

1.0 PURPOSE AND NEED FOR ACTION

This Environmental Assessment (EA) has been prepared on behalf of the United States Coast Guard (USCG) as a means of evaluating the potential environmental effects associated with the development of the Eastport Housing Project in Perry, Maine.

1.1 INTRODUCTION

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] §4321 et seq.); Council on Environmental Quality (CEQ) Regulations for Implementing NEPA dated 28 November 1978 (40 CFR §§1500-1508) and associated CEQ guidelines; Department of Homeland Security Management Directive 023-01; and the USCG Commandant Instruction Manual (COMDTINST) *Environmental Planning Policy* (COMDTINST 5090.1) and the associated *U.S. Coast Guard Environmental Planning Implementing Procedures* document (USCG, 2019). This section specifies the purpose of, and need for, the proposed construction of duplex or individual housing units on a parcel of land owned by the USCG in Perry, Maine, for service members reporting to the USCG station located in Eastport, Maine (USCG Station Eastport).

1.2 BACKGROUND

The USCG has identified a need to provide family housing for service members reporting to USCG Station Eastport. As such, the USCG recently acquired a 75-acre site at 576 Shore Road in Perry, Maine (County of Washington) (see **Figure 1-1**) in which they are proposing the development of residential housing units for the service members assigned to the station.

Pursuant to NEPA, the USCG has prepared this EA to evaluate the potential effects on the environment from the implementation of the Eastport Housing Project. CEQ regulations and COMDTINST 5090.1 require that an EA identify and evaluate all reasonable alternatives, including a "No Action Alternative" in which the Proposed Action is not undertaken (see **Section 2.0**, *Proposed Action and Alternatives*). The information and analysis contained in this EA will serve as the basis for a USCG determination of whether the Proposed Action would result in a significant impact to the environment, which would require the preparation of an Environmental Impact Statement (EIS), or if no significant impacts would occur and therefore a Finding of No Significant Impact (FONSI) would be appropriate.


PROJECT SITE
Perry
Pleasant Point
Passamaquoddy Indian Reservation
Calders Head
Fairhaven
Cummings Cove
Atlantic Ocean
Quoddy
STATION EASTPORT
Eastport
SOURCE:
DELORME TOPO NORTH AMERICA 10.
0 1/2 1 2
SCALE IN MILES
Prepared/Date: WJW 7/01/20
Checked/Date: CRH 7/01/20
USCG
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
LOCATION MAP
Eastport Housing Site Development
Project 3350-00-007
Figure 1-1

1.3 OVERVIEW

The following sections provide a summary of the USCG's overall mission and the role that Sector Northern New England (NNE) and, more specifically, USCG Station Eastport play in that mission. A description of the property on which the Proposed Action would take place is also provided.

1.3.1 USCG Mission

The USCG is this nation's first and oldest maritime agency. The USCG area of responsibility (AOR) includes more than 95,000 miles of United States (US) coastlines, waterways, and harbors; more than 3.36 million square miles of Exclusive Economic Zone (EEZ) and US territorial seas; and international waters or other maritime regions of importance to the US. The USCG is a multi-missioned military and maritime service within the Department of Homeland Security.

The USCG's 11 fundamental missions are ports, waterways, and coastal security; illegal drug interdiction; aids to navigation; search and rescue; living marine resources; marine safety; defense readiness; migrant interdiction; marine environmental protection; ice operations; and other law enforcement. Examples of these fundamental missions are:

- Protect all US ports, inland waterways, harbors, navigable waters, the Great Lakes, territorial seas, contiguous waters, customs waters, coastal seas, littoral areas, the US EEZ, oceanic regions of US national interest, sea lanes to the US, US maritime approaches, and high seas surrounding the nation;
- Protect the US Marine Transportation System, which is comprised of the intermodal connections, vessels, vehicles, and system users, as well as all Federal maritime navigation systems;
- Maintain maritime border security against illegal drugs, illegal aliens, firearms, and weapons of mass destruction;
- Ensure that US military assets can be rapidly supplied and deployed by keeping USCG units at a high state of readiness, and by keeping marine transportation open for the transit of assets and personnel from other branches of the armed forces;
- Coordinate efforts and intelligence with Federal, State, and local agencies;
- Respond to calls of distress, whether from commercial or recreational boats or downed aircraft;
- Support programs to ensure that boats are safe for public use and that boats contain appropriate safety equipment;
- Protect against illegal fishing and indiscriminate destruction of living marine resources; and
- Prevent and respond to oil and hazardous material spills – both accidental and intentional.

1.3.2 Sector Northern New England

The City of Eastport and the Town of Perry, Maine, are located within the USCG's District 1, Sector NNE. Sector NNE includes 19 sub-units and over 1,100 active, civilian, reserve, and auxiliary personnel executing operational missions across Maine, New Hampshire, Vermont, and northeastern New York. Their AOR spans over 5,000 miles of coastline and 11,000 square nautical miles of water (USCG, 2019).

A number of coastal and river cargo ports, cruise ship destinations, and the waters of Lake Champlain lie within Sector NNE's AOR. These ports host over 1,000 deep draft vessels arriving annually and account for the movement of significant bulk and container freight. In addition, many ferries and tour boats operate within Sector NNE's AOR, transporting millions of passengers and serving as vital links to island communities and bordering states (USCG, 2019).

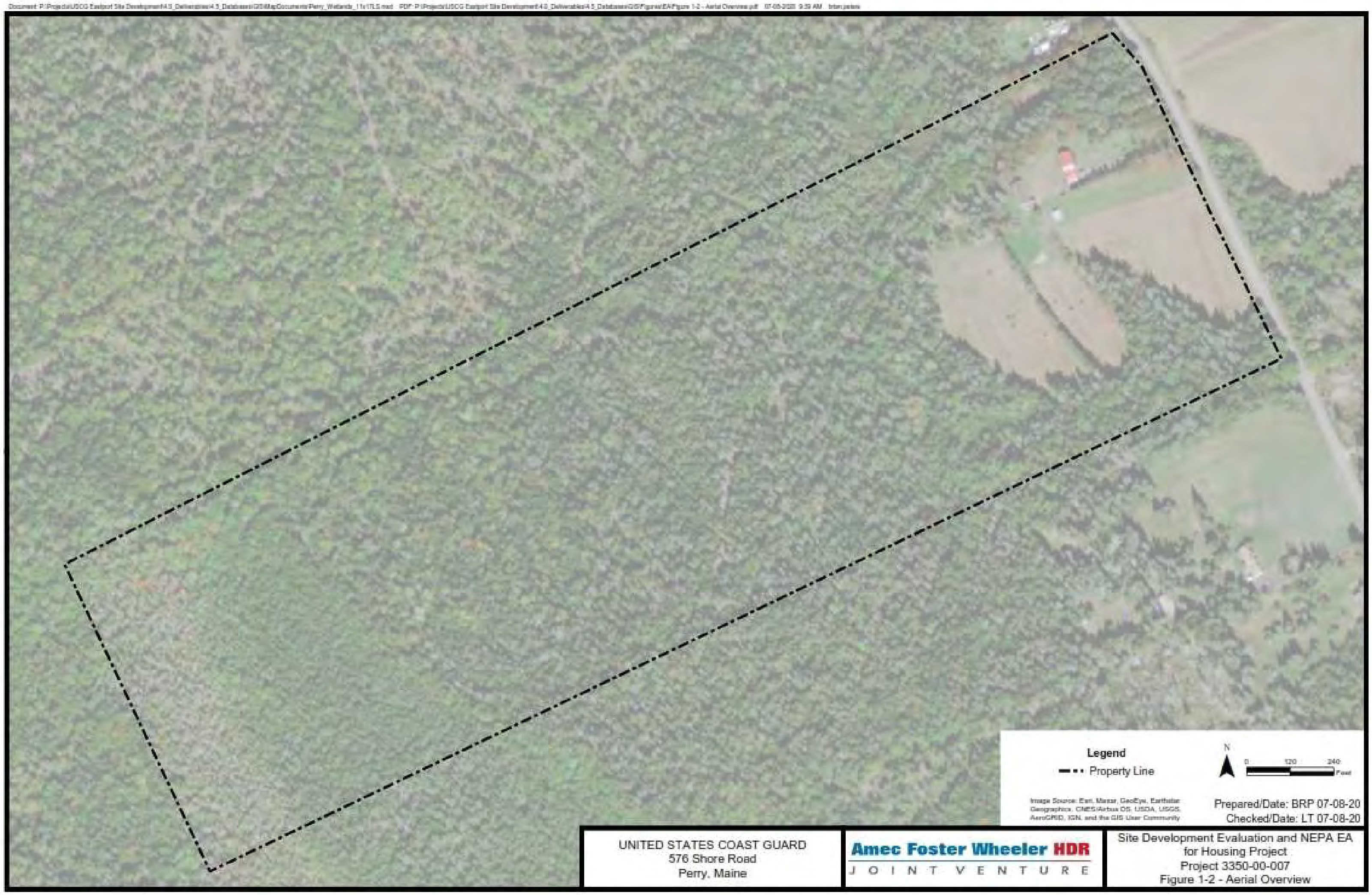
Other unique features of Sector NNE's AOR include joint protection and response missions along the Canadian border and the continued support and rapport shared with local Native American tribal communities (USCG, 2019).

1.3.3 USCG Station Eastport

USCG Station Eastport is one of two USCG stations within Washington County, Maine. It consists of a crew of 21 personnel and two boats that serve a 100-mile stretch of coastline. The USCG station building was constructed in 2004 and includes the local emergency response center. It is located adjacent to the repaired and expanded Eastport Breakwater on the downtown waterfront. The Eastport Breakwater re-opened in 2017, serving the commercial fishing fleet, the USCG, and visitors (City of Eastport, 2018).

1.3.4 Project Site

The property in which the proposed Eastport Housing Project is sited is a heavily wooded 75-acre site in the Town of Perry, Maine (see **Figure 1-2**). This property is listed as Lot 4 on the Town Planning Map 13 and contains a gravel driveway that leads from Shore Road to a 2,280 ft^2, two-story, colonial-style home built in 1968. A two-story barn (~1,800 ft^2), a workshop (~500 ft^2), a woodshed (~500 ft^2), a wood boiler unit (~200 ft^2), and a shed/lean-to (~500 ft^2) are also on the property. Three pastures are located south of the existing house. All of the structures and fields are located in the eastern third of the land parcel. The house and barn are supported by two private water supply wells. A 1,000-gallon concrete septic tank and associated leach field serve as the wastewater disposal system for the property (Mott, 2018).


Legend
Property Line
N
0
120
240
Feet
Image Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Prepared/Date: BRP 07-08-20
Checked/Date: LT 07-08-20
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 1-2 - Aerial Overview

1.4 Purpose of the Proposed Action

The purpose of the Proposed Action is to provide adequate housing that meets USCG standards for USCG Station Eastport personnel and their families by constructing four duplex units or up to eight single-family housing units, at 576 Shore Road in Perry, Maine (hereinafter referred to as the "project site").

1.5 Need for the Proposed Action

The Proposed Action is needed because the supply of vacant housing in the Eastport area that meets USCG housing standards is inadequate to support the personnel that report to USCG Station Eastport. Currently, personnel are provided a housing allowance and must find housing on their own in the vicinity of Eastport. However, the Eastport area was designated a Critical Housing Area (CHA) by the USCG in the early 2000s and has been classified as such since. CHA status is recognition that a geographic area has extremely limited community-based housing, generally defined as less than a 3 percent (%) vacancy rate. In addition, an August 2014 Housing Market Survey Analysis (HMSA) of the Eastport area concluded that private sector housing cannot fully accommodate the demand of USCG personnel. Therefore, personnel are forced to find housing in larger city centers such as Calais and East Machias, which are much farther away from Eastport than Perry.

Long commutes to and from Station Eastport have the potential to affect USCG mission readiness. The inability to find appropriately-sized housing that is affordable can affect the ability of service members to have their spouses and/or children live with them. Separation of families can lead to impacts to morale which negatively affect job performance and mission readiness. Dealing with unreasonably high housing expenses could also result in detrimental long-term personal financial impacts. Ultimately, USCG strives to ensure that steps are taken to minimize lifestyle impacts to service members in order to care for the military families and guarantee that important national missions are executed without interruption.

1.6 Agency and Public Involvement Process

This section describes the efforts undertaken by the USCG to involve the public and regulatory agencies in preparing this EA.

1.6.1 Scoping Period

In order to reach out to this small community and the surrounding area, a Notice of Scoping was initially published in the *Calais Advertiser* on 13 June 2019 (see **Appendix A**). This notice included a project description and instructions on how to provide comments. The scoping period lasted 10 days, concluding on 23 June 2019.

There were no public comments generated by the publication of the Notice of Scoping. The lack of response is likely due to the personal readership preferences of Perry and Eastport residents, who were found to favor the *Quoddy Tides*.

1.6.2 Draft Environmental Assessment Initial Public Comment Period

The public comment period on the draft EA began with the advertisement of a Public Notice in both the *Calais Advertiser* on 22 August 2019 and the *Quoddy Tides* on 23 August 2019 (see **Appendix A**). The notices included a project description and instructions on how to provide comments. The public comment period for the draft EA lasted 30 days, concluding on 23 September 2019.

At the time of publication, complete hard copy versions of the draft EA were also sent to the following repositories to ensure access to the local community during the public comment period:

1. Town of Perry – Municipal Clerk's office
2. Town of Pembroke – Pembroke Library Association
3. City of Eastport – Peavey Memorial Library

The draft EA was also made available on the Town of Perry's website after one citizen suggested it would be easier for people to access due to limited hours of operation for both the Municipal Clerk's office and the Pembroke Library Association.

1.6.3 Public Meeting and Public Comment Period Extension

During the initial public comment period, multiple commenters indicated that they still had unanswered questions about the Proposed Action after reading the draft EA and requested an opportunity to meet with the USCG to better understand the proposal. As a result of these requests and in an attempt to ensure that the public fully understood the Proposed Action and the issues related to the need for USCG housing in the Eastport area, a town hall style public meeting was held on 13 November 2019 at Perry Elementary School. Notices were placed in both the 25 October and the 8 November 2019 editions of the *Quoddy Tides* advertising the public meeting (see **Appendix A**). The public meeting began with a brief project history and introduction by the USCG followed by a question and answer session during which members of the public were able to receive clarification on issues of concern. Twenty-seven members of the public, including three congressional staff members, attended the meeting.

In response to concerns from the public that adequate time had not been given to provide meaningful comments on the USCG's proposal, the USCG announced during the meeting that the draft EA comment period would be reopened. As a result, a Public Notice was placed in the *Quoddy Tides* on 22 November 2019 (see **Appendix A**) announcing the reopening of the comment period. This notice included a project description and instructions on how to provide comments. The second comment period lasted an additional 30 days from the date of the public meeting, from 13 November 2019 through 13 December 2019.

Twenty-two comment letters were received in response to the first draft EA comment period and five were received in response to the second comment period, totaling 27 comments. A summary of the issues addressed in those comments is included in **Appendix B**, along with the USCG's responses to those comments.

1.6.4 Agencies and Tribes Consulted

In development of this EA, the USCG consulted with the following Federal, State, and local agencies and Federally recognized tribes:

- Aroostook Band of Micmac
- Houlton Band of Maliseet Indians
- Maine Coastal Program
- Maine Historic Preservation Commission
- Maine Natural Areas Program
- Natural Resources Conservation Service, Machias Field Office
- Passamaquoddy Tribe
- Penobscot Nation
- Town of Perry Planning Board
- Town of Perry Selectmen
- U.S. Fish and Wildlife Service, Maine Field Office

1.7 SUMMARY OF ENVIRONMENTAL STUDY REQUIREMENTS

This EA has been prepared in accordance with Department of Homeland Security Directive 023-01 and USCG COMDTINST 5090.1 and is in compliance with requirements of NEPA and CEQ regulations at 40 CFR §§1500-1508 (43 Federal Register 55978 dated 29 November 1978). All Federal laws, statutes, regulations, and policies that are pertinent to this EA are described below.

1.7.1 National Environmental Policy Act

NEPA requires that Federal agencies consider potential environmental consequences of their proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed Federal decisions. The CEQ was established under NEPA for the purpose of implementing and overseeing Federal policies as they relate to this process. In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR §§1500-1508). These regulations specify that an EA be prepared to:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an EIS or a FONSI;

- Aid in an agency's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS if one is necessary.

Further, to comply with other relevant environmental requirements (e.g., Endangered Species Act [ESA], National Historic Preservation Act [NHPA], Clean Water Act [CWA], etc.) in addition to NEPA and to assess potential environmental impacts, the decision-making process for the Proposed Action involves a thorough examination of all environmental issues pertinent to the Proposed Action.

1.7.2 Endangered Species Act

The ESA of 1973 (16 USC §§1531–1544, as amended) established measures for the protection of plant and animal species that are Federally listed as threatened or endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can require formal consultation with the United States Fish and Wildlife Service (USFWS) and/or with National Oceanic and Atmospheric Administration (NOAA) Fisheries under Section 7 of the ESA.

1.7.3 Clean Air Act and Conformity Requirements

The Clean Air Act (CAA) (42 USC §§7401–7671, as amended) provided the authority for the United States Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, particulate matter, and lead. The CAA also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS.

The USEPA and the Maine Department of Environmental Protection (MEDEP) regulations require proposed projects to demonstrate that predicted impacts would not cause, or significantly contribute to, a new violation of the NAAQS or the Maine Ambient Air Quality Standards (MAAQS); increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. Toward that end, the USEPA and MEDEP have established Significant Impact Levels (SILs), which are a small fraction of the NAAQS/MAAQS. Predicted impacts less than SILs are deemed insignificant, and therefore will not cause or contribute to an air quality standard violation.

1.7.4 Wetland and Water Resources Regulatory Requirements

The CWA of 1977 (33 USC §1251 et seq.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and Executive Order 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Section

404 also regulates development in streams and wetlands and requires a permit from the United States Army Corps of Engineers (USACE) for dredging and filling in wetlands. Executive Order 11988, *Floodplain Management*, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

1.7.5 Coastal Zone Management Act / Coastal Consistency Determination

The Coastal Zone Management Act of 1972 (CZMA) created a Federal partnership with states to ensure the protection, restoration, preservation, or enhancement of coastal resources. To this end, CZMA requires Federal agencies whose actions or activities have the potential to affect coastal zone resources to carry out those activities in a manner consistent, to the maximum extent practicable, with the enforceable policies of Federally approved state coastal management programs. Along with the state review of Federal proposals, the National Ocean Service (NOS) interprets the CZMA, oversees applications of Federal consistency, provides management and legal assistance to coastal states and Federal agencies, and mediates CZMA-related disputes (NOS, 2019). In compliance with this Federal law, and in order to address coastal problems and provide a means for resolving them, the Maine Coastal Program (MCP) was formally created in 1978. Maine's coastal zone includes 5,408 miles of coastline, all municipalities with tidal waters in their jurisdiction; and State-owned submerged lands and islands out to three nautical miles (MCP, 2015). Development within or potentially affecting Maine's coastal zone is subject to a coastal zone consistency determination.

1.7.6 Cultural Resources Regulatory Requirements

The NHPA of 1966 (16 USC §470) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation, which outlined procedures for the management of cultural resources by Federal agencies. Cultural resources include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The NHPA requires Federal agencies to consider potential impacts to cultural resources that are listed, nominated, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. Section 106 of the NHPA requires Federal agencies to consult with the appropriate State Historic Preservation Office (SHPO) if their undertaking might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR §800) provides an explicit set of procedures necessary for Federal agencies to meet their obligations under the NHPA, which include creating an inventory of resources and consultation with the appropriate SHPO.

Executive Order 13007, *Indian Sacred Sites*, directs agencies managing Federal land (any land or interests in land owned by the US, including leasehold interests held by the US, except Indian trust lands) to accommodate access to, and ceremonial use of, Indian sacred sites (any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe [an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Department of Interior acknowledges to exist as an Indian tribe pursuant to Public Law 103-454, 108 Statute 4791]). An "Indian" refers to a member of such an Indian tribe. A "sacred site" is defined as any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

The American Indian Religious Freedom Act (42 USC §1996) established Federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (25 USC §§3001–3013) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

1.8 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA considers the Proposed Action and evaluates potential environmental impacts to those resources that would likely be affected by implementation of the Proposed Action. In this case, this EA evaluates the following environmental resources:

- Socioeconomic Environment;
- Physical Environment;
- Biological Resources;
- Land Use; and
- Cultural Resources.

The Proposed Action evaluated in this EA is not anticipated to cause environmental impacts to the resources listed below. Per NEPA, environmental resource areas that are anticipated to experience either no or negligible environmental impact under implementation of the Proposed Action or its alternatives are not examined in detail. Environmental resources that are not expected to be impacted by the Proposed Action and will not be examined further in this EA include:

Invasive Species

The project site was not documented as containing invasive species or those plants targeted by such species (i.e., American chestnut [*Castanea dentata*] and American elm [*Ulmus americana*]). In addition, landscape plans would only include the planting of native, non-invasive species in the new development. Therefore, no impacts to the surrounding environment from the introduction of invasive species would result from implementation of the Proposed Action.

Essential Fish Habitat

Essential Fish Habitat (EFH) is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” When considering an action in EFH, Federal agencies are required to consult with NOAA Fisheries when their actions will adversely affect EFH. If a Proposed Action would not adversely affect EFH, then consultation with NOAA Fisheries is not required (NOAA Fisheries, 2019).

The Proposed Action would occur in an EFH-designated area for 15 species managed by the New England Fishery Management Council, each covered under one of the following documents: 1) Amendment 2 to the Northeast Skate Complex Fishery Management Plan (FMP), 2) Amendment 3 to the Atlantic Herring FMP, 3) Amendment 14 to the Atlantic Sea Scallop FMP, and 4) Amendment 14 to the Northeast Multispecies FMP. In addition, the area contains one species that is managed by the Mid-Atlantic Fishery Management Council and covered under Amendment 11 to the Atlantic Mackerel, Squid, and Butterfish FMP. However, these species all require intertidal and subtidal shallows of estuaries and embayments with salinities between 0.5% and 2.5%. Freshwater streams, such as those located on the project site, do not contain the required salinity to support these species. In addition, the project site is not designated as containing Habitat Areas of Particular Concern nor is it located in an EFH Area Protected from Fishing (NOAA Fisheries, 2017). Therefore, there would be no effect on EFH resources protected under the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 USC §1801 et seq.) from implementation of the Proposed Action.

Marine Mammals

The project site is not sited within, or adjacent to, marine resources containing species protected under the Marine Mammal Protection Act of 1972. Therefore, no impacts to marine mammals would result from implementation of the Proposed Action.

Floodplains

The project site is not located within a designated Federal Emergency Management Agency flood zone. Therefore, no impacts to floodplain resources would result from the implementation of the Proposed Action.

Critical Habitat

The project site is not within, or adjacent to, critical habitat designated for Federally listed threatened or endangered species protected under the ESA. Therefore, no impacts to critical habitat resources would result from the implementation of the Proposed Action.

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2.0 PROPOSED ACTION AND ALTERNATIVES

The USCG is proposing to build a family housing development on a single parcel in Perry, Maine (the "project site") for USCG service members reporting to USCG Station Eastport. As described in **Section 1.0**, *Purpose and Need*, the proposed construction of new housing in Perry would serve to ensure that USCG housing standards, as outlined in the Coast Guard Housing Manual (COMDTINST M11101.13G), can be met and that USCG personnel would experience a high quality of life, with easy access to community resources.

Four alternatives to house personnel reporting to USCG Station Eastport and their families are being evaluated in this EA:

- Design Alternative 1: Build four duplex housing units (eight units total);
- Design Alternative 2: Build seven single-family units;
- Design Alternative 3: Build eight single-family units; and
- No Action Alternative.

At this time, the USCG considers Design Alternative 3 to be the preferred alternative. Regardless of which design alternative is ultimately selected, all pertinent Federal and State regulatory requirements would be followed by the USCG. Any construction associated with this proposal would be implemented through the Federal design-build contract process, with final design proposed to take place in the fall of 2020. Construction would follow in the summer of 2021 with completion anticipated by summer of 2022.

2.1 DESIGN ALTERNATIVE 1: BUILD FOUR DUPLEX HOUSING UNITS (EIGHT UNITS TOTAL) AT 576 SHORE ROAD IN PERRY, MAINE

In this scenario, the existing house and all associated structures currently located on the project site would be razed. Four new duplex housing units would be built in the eastern third of the parcel for a total of eight combined family houses for use by personnel reporting to USCG Station Eastport and their families. The structures would consist of three duplexes, each containing two three-bedroom units (six units total), and one duplex containing two four-bedroom units (two units total) for a total development area of 15.3 acres (see **Figure 2-1**).

In addition, a 1,000 ft^2 maintenance building would be constructed. All associated roads, driveways (to support parking for an estimated three automobiles per household), sidewalks, stormwater controls, streetlights, utilities, and typical residential infrastructure to support this community would also be provided. This design calls for the drilling of five groundwater supply wells and the installation of five septic tanks with associated leach fields. The duplexes would require a 1,000-gallon septic tank for each unit in the duplex, followed by a single disposal field sized to accept wastewater from both units. A duplex with two three-bedroom units would require a 2,400 ft^2 stone and pipe disposal field, and a duplex with two four-bedroom units would require a 3,000 ft^2

disposal field. The proposed maintenance building would be serviced by a separate disposal field and would require a minimum 1,000-gallon septic tank. The maintenance building disposal field would be 700 ft^2. The size of the fields may be reduced by utilizing proprietary devices in constructing the disposal fields, as described in the Maine Subsurface Disposal Rules.

2.2 DESIGN ALTERNATIVE 2: BUILD SEVEN SINGLE-FAMILY UNITS AT 576 SHORE ROAD IN PERRY, MAINE

In this scenario, the existing house and all associated structures currently located on the project site would be razed. Seven new single-family housing units would be built in the eastern third of the parcel for use by personnel reporting to USCG Station Eastport, along with a 1,000 ft^2 maintenance building. These units would consist of six three-bedroom units and one four-bedroom unit for a total development area of 15.3 acres (see **Figure 2-2**).

In addition, all associated roads, driveways (to support parking for an estimated three automobiles per household), sidewalks, stormwater controls, streetlights, utilities, and typical residential infrastructure to support this community would be provided. This design calls for the drilling of eight groundwater supply wells and the installation of eight septic tanks with associated leach fields. Each system for the single-family residences would require a minimum 1,000-gallon septic tank and a 1,200 ft^2 or 1,500 ft^2 disposal field for three-bedroom and four-bedroom units, respectively. The proposed maintenance building would be serviced by a separate disposal field and would require a minimum 1,000-gallon septic tank. The maintenance building disposal field would be 700 ft^2. The size of the fields may be reduced by utilizing proprietary devices in constructing the disposal fields, as described in the Maine Subsurface Disposal Rules.

2.3 DESIGN ALTERNATIVE 3: BUILD EIGHT SINGLE-FAMILY UNITS AT 576 SHORE ROAD IN PERRY, MAINE

In this scenario, the existing house and all associated structures currently located on the project site would be razed. Eight new single-family housing units would be built in the eastern third of the parcel for use by personnel reporting to USCG Station Eastport, along with a 1,000 ft^2 maintenance building. These units would consist of six three-bedroom units and two four-bedroom units for a total development area of 15.3 acres (see **Figure 2-3**).

In addition, all associated roads, driveways (to support parking for an estimated three automobiles per household), sidewalks, stormwater controls, streetlights, utilities, and typical residential infrastructure to support this community would be provided. This design calls for the drilling of nine groundwater supply wells and the installation of nine septic tanks with associated leach fields. Each system for the single-family residences would require a minimum 1,000-gallon septic tank and a 1,200 ft^2 or 1,500 ft^2 disposal field for three-bedroom and four-bedroom units, respectively. The proposed maintenance building would be serviced by a separate disposal field and would require a minimum 1,000-gallon septic tank. The maintenance building disposal field would be

700 ft^2. The size of the fields may be reduced by using proprietary devices in constructing the disposal fields, as described in the Maine Subsurface Disposal Rules.

2.4 NO ACTION ALTERNATIVE

The CEQ regulations implementing NEPA require that a No Action Alternative be analyzed to provide a baseline for comparison with the Proposed Action. The No Action Alternative identifies and describes the potential environmental impacts of the status quo (i.e., if the Proposed Action were to not be implemented).

Under the No Action Alternative, the USCG would not raze the existing structures on the property or build new family housing units for the personnel assigned to USCG Station Eastport. However, due to the classification of the Eastport area as a CHA, USCG members would likely continue to experience extreme hardships in securing housing within a reasonable commuting distance from the station.

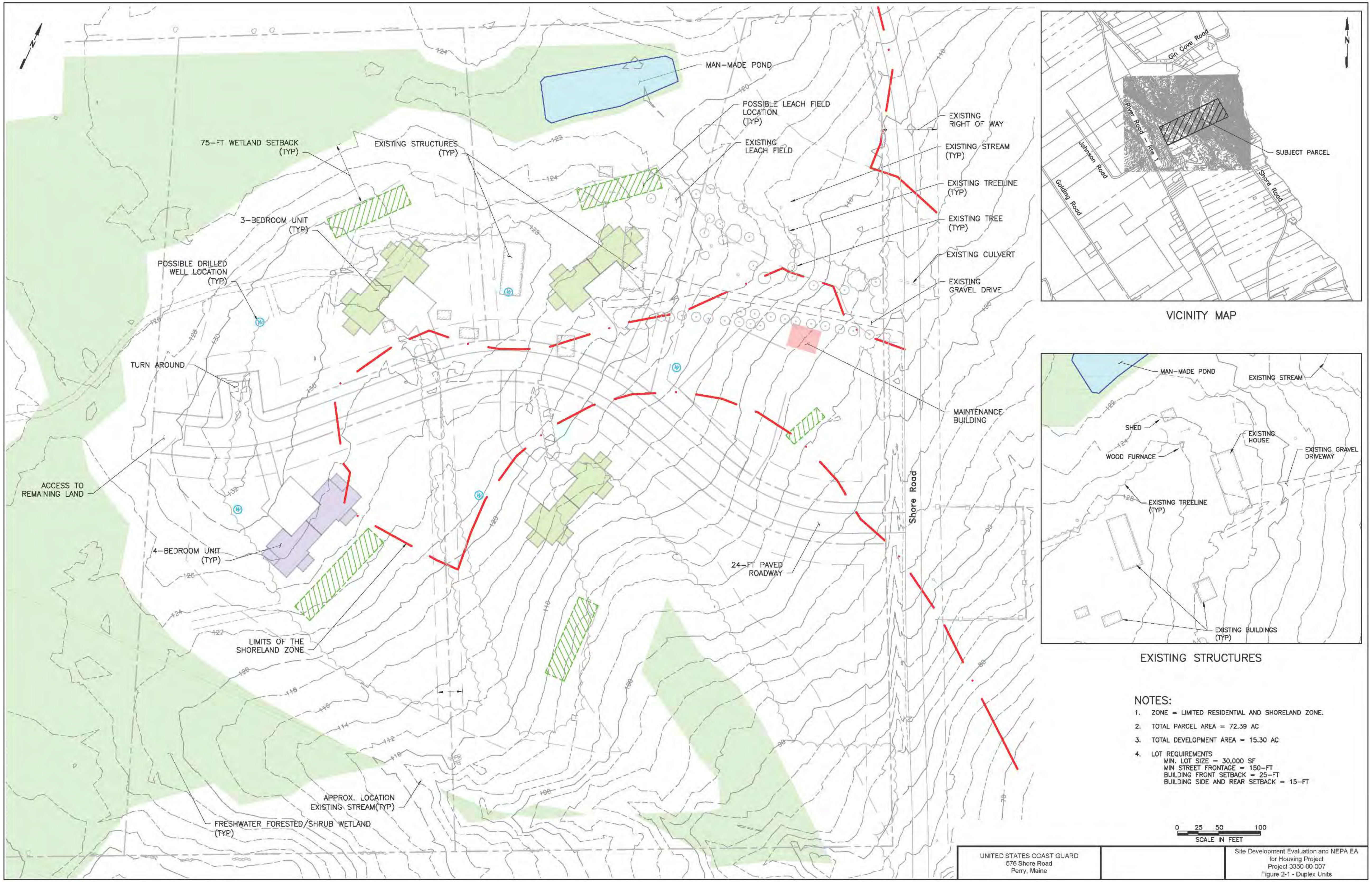
2.5 ALTERNATIVES IDENTIFIED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

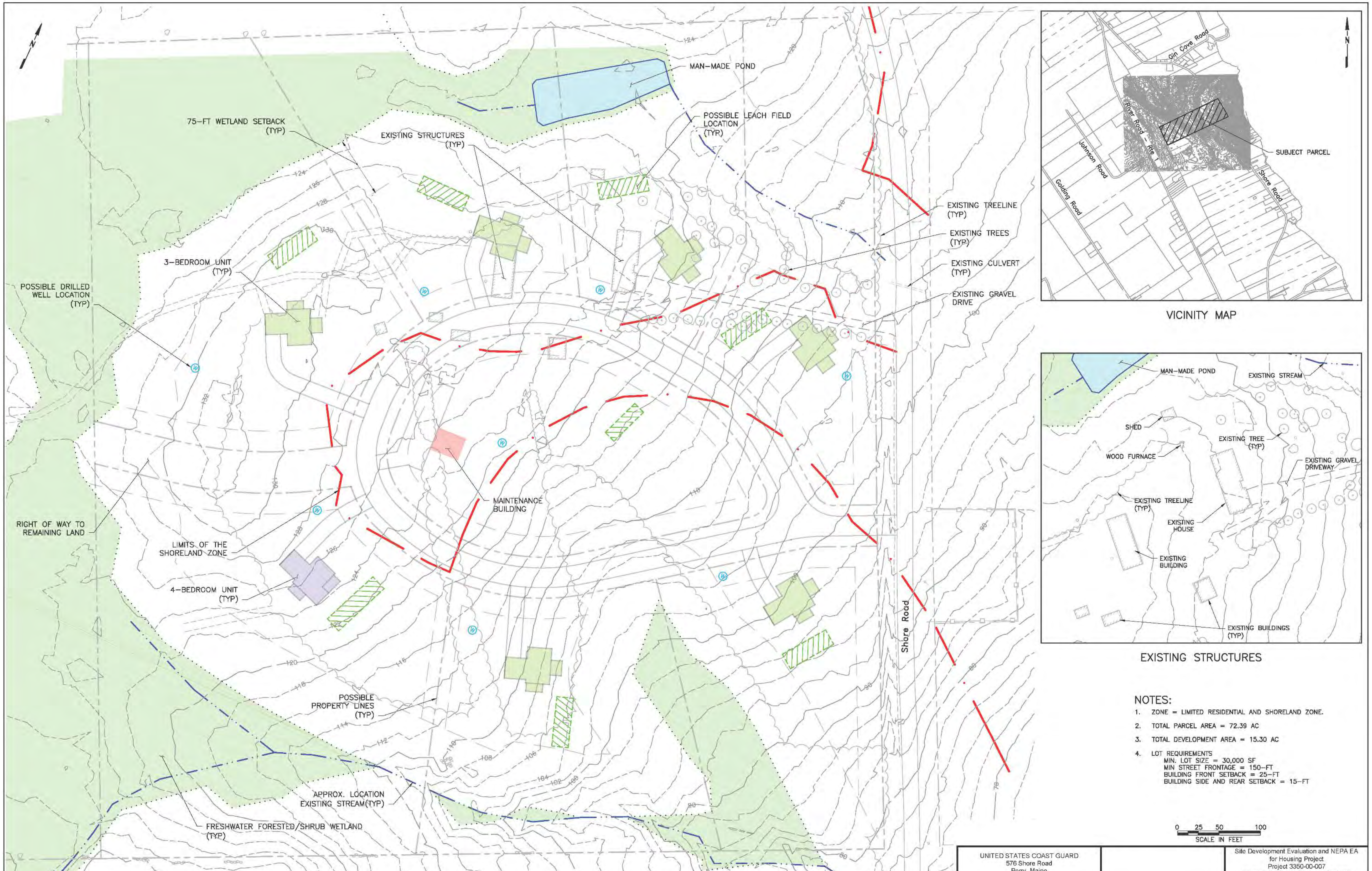
Three alternatives to the Proposed Action were identified and preliminarily evaluated. These alternatives were screened for the ability to fully satisfy the purpose and need of the Proposed Action, be viable and economically feasible, and not result in significant adverse impacts to the human or physical environment.

These alternatives and a succinct evaluation of their disposition with respect to implementation follows.

Building six new duplex housing units or 12 single-family homes at the 576 Shore Road site in Perry

The original design was for the building of either six duplex units or 12 single-family homes in the eastern portion of the lot to accommodate current USCG Station Eastport personnel and their families as well as any additional USCG personnel that may be assigned to USCG Station Eastport in the future. These design plans were discontinued, however, as the design would have entailed extensive impacts to wetlands delineated on the property.


MAN-MADE POND
POSSIBLE LEACH FIELD LOCATION (TYP)
EXISTING LEACH FIELD
75-FT WETLAND SETBACK (TYP)
EXISTING STRUCTURES (TYP)
3-BEDROOM UNIT (TYP)
POSSIBLE DRILLED WELL LOCATION (TYP)
TURN AROUND
ACCESS TO REMAINING LAND
4-BEDROOM UNIT (TYP)
LIMITS OF THE SHORELAND ZONE
APPROX. LOCATION EXISTING STREAM(TYP)
FRESHWATER FORESTED/SHRUB WETLAND (TYP)
24-FT PAVED ROADWAY
EXISTING RIGHT OF WAY
EXISTING STREAM (TYP)
EXISTING TREELINE (TYP)
EXISTING TREE (TYP)
EXISTING CULVERT
EXISTING GRAVEL DRIVE
MAINTENANCE BUILDING
Shore Road
Gin Cove Road
River Road – Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
VICINITY MAP
MAN-MADE POND
EXISTING STREAM
SHED
WOOD FURNACE
EXISTING HOUSE
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING BUILDINGS (TYP)
EXISTING STRUCTURES
NOTES:
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
MIN. LOT SIZE = 30,000 SF
MIN STREET FRONTAGE = 150-FT
BUILDING FRONT SETBACK = 25-FT
BUILDING SIDE AND REAR SETBACK = 15-FT
0 25 50 100
SCALE IN FEET
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 2-1 - Duplex Units


MAN-MADE POND
POSSIBLE LEACH FIELD LOCATION (TYP)
75-FT WETLAND SETBACK (TYP)
EXISTING STRUCTURES (TYP)
EXISTING TREELINE (TYP)
EXISTING TREES (TYP)
EXISTING CULVERT (TYP)
EXISTING GRAVEL DRIVE
3-BEDROOM UNIT (TYP)
POSSIBLE DRILLED WELL LOCATION (TYP)
MAINTENANCE BUILDING
RIGHT OF WAY TO REMAINING LAND
LIMITS OF THE SHORELAND ZONE
4-BEDROOM UNIT (TYP)
POSSIBLE PROPERTY LINES (TYP)
APPROX. LOCATION EXISTING STREAM(TYP)
FRESHWATER FORESTED/SHRUB WETLAND (TYP)
Shore Road
Gin Cove Road
River Road – Rte 1
Johnson Road
Golding Road
SUBJECT PARCEL
VICINITY MAP
MAN-MADE POND
EXISTING STREAM
SHED
WOOD FURNACE
EXISTING TREE (TYP)
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING HOUSE
EXISTING BUILDING
EXISTING BUILDINGS (TYP)
EXISTING STRUCTURES
NOTES:
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
MIN. LOT SIZE = 30,000 SF
MIN STREET FRONTAGE = 150-FT
BUILDING FRONT SETBACK = 25-FT
BUILDING SIDE AND REAR SETBACK = 15-FT
0 25 50 100
SCALE IN FEET
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Site Development Evaluation and NEPA EA for Housing Project
Project 3350-00-007
Figure 2-2 - Seven Single Family Units


MAN-MADE POND
75-FT WETLAND SETBACK (TYP)
EXISTING STRUCTURES (TYP)
POSSIBLE LEACH FIELD LOCATION (TYP)
EXISTING TREELINE (TYP)
EXISTING TREES (TYP)
EXISTING CULVERT (TYP)
EXISTING GRAVEL DRIVE
3-BEDROOM UNIT (TYP)
POSSIBLE DRILLED WELL LOCATION (TYP)
MAINTENANCE BUILDING
RIGHT OF WAY TO REMAINING LAND
LIMITS OF THE SHORELAND ZONE
4-BEDROOM UNIT (TYP)
POSSIBLE PROPERTY LINES (TYP)
APPROX. LOCATION EXISTING STREAM(TYP)
FRESHWATER FORESTED/SHRUB WETLAND (TYP)
Shore Road
Gin Cove Road
River Road – Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
VICINITY MAP
MAN-MADE POND
EXISTING STREAM
SHED
WOOD FURNACE
EXISTING TREE (TYP)
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING HOUSE
EXISTING BUILDING
EXISTING BUILDINGS (TYP)
EXISTING STRUCTURES
NOTES:
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
MIN. LOT SIZE = 40,000 SF
MIN STREET FRONTAGE = 150-FT
BUILDING FRONT SETBACK = 25-FT
BUILDING SIDE AND REAR SETBACK = 15-FT
0 25 50 100
SCALE IN FEET
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 2-3 - Eight Single Family Units

Lease or Purchase Existing Housing in the Eastport Area

Based on the 2017 CHA revalidation and 2014 HMSA, it was determined that a very limited number of three- or four-bedroom homes/apartments were available to rent or purchase within a reasonable distance of USCG Station Eastport. Furthermore, the limited rentals in the area were found not to meet USCG adequacy standards outlined in the Coast Guard Housing Manual (COMDTINST M11101.13G). The houses for sale consisted of either large summer vacation homes or small dwellings, many of which also did not meet the standards outlined in the Coast Guard Housing Manual.

Building housing units on sites other than 576 Shore Road in Perry

Properties in addition to the 576 Shore Road site in Perry were considered for purchase and construction of new housing units. All of these sites exhibited more site restrictions/building limitations than the 576 Shore Road site that was ultimately purchased by the USCG. Details regarding the sites considered can be found in **Appendix C**.

2.6 CONSERVATION MEASURES AND BEST MANAGEMENT PRACTICES

The Proposed Action would be designed to minimize potential environmental impacts by incorporating, at a minimum, the following conservation measures and best management practices regardless of which design alternative is ultimately implemented:

- Any equipment proposed for use would be kept in good repair without leaks of fluids. If such leaks or drips occur, they would be cleaned up immediately. Equipment maintenance and/or repair would be confined to one location at the project site. Runoff from this area would be controlled to help prevent contamination of freshwater wetlands or streams. Fueling of land-based vehicles and equipment would take place at least 50 ft away from the water (and away from drains), preferably over an impervious surface;
- To the maximum extent possible, project-related debris would not be allowed to enter the freshwater wetlands or streams. Any project-related debris that inadvertently enters these resources would be removed;
- A stormwater management plan would be developed and followed to prevent disturbed soil from entering the freshwater wetlands and streams during construction;
- All construction contractors would be required to comply with Occupational Health and Safety Administration (OSHA) regulations regarding safety measures and precautions as they relate to construction activities (29 CFR §1926);
- Contractors would be required to comply with policies and procedures addressing management of hazardous materials and hazardous wastes, including accidental spills and training requirements for worker safety;
- A Safety and Health Management System would be in place and would consist of a technical plan, a safety and health plan, and an environmental technical plan;

- All landscape plantings would consist of native, non-invasive species;
- Any solid waste generated, including construction, demolition, and land clearing debris, would be properly disposed of at a permitted solid waste acceptance facility or recycled, if possible, in accordance with Title 38, Chapter 13 (*Waste Management*) of the Maine Revised Statutes;
- An advisory review by the Town of Perry Planning Board would occur prior to commencement of work in an effort to incorporate as many local development ordinances as practicable to the USCG;
- A real estate easement would be established by USCG Civil Engineering Unit Providence so that pedestrian access to the Rest Lawn Cemetery, located on the adjacent parcel to the west, could continue across the project site as it has occurred in the past; and
- In the event that a previously unidentified historic property or Native American/tribal resource is discovered during the course of construction, work would be halted immediately until further consultation with the Maine Historic Preservation Commission (MHPC) and/or the appropriate tribal council could occur. The USCG would work collaboratively with the MHPC and/or the appropriate tribal council to determine management actions to be completed before construction could resume.

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3.0 AFFECTED ENVIRONMENT

This section describes pertinent existing environmental conditions for resources potentially affected by the Proposed Action and its alternatives. In compliance with CEQ regulations implementing NEPA, and USCG COMDTINST 5090.1, the description of the affected environment focuses on only those aspects of the Proposed Action potentially subject to impacts.

In the case of the Proposed Action, the description of the affected environment is limited to the USCG property at 576 Shore Road in Perry, Maine (the "project site") and adjacent surroundings. Resource descriptions focus on the resources present at the site that would have the potential to be affected by implementation of the Proposed Action or identified alternatives, listed under the following categories:

- Socioeconomic Environment;
- Physical Environment;
- Biological Resources;
- Land Use; and
- Cultural Resources.

Implementation of the Proposed Action evaluated in this EA is not anticipated to result in environmental impacts to the resources listed below (refer to **Section 1.8**, *Scope of the Environmental Assessment*). Per NEPA, environmental resource areas that are anticipated to experience either no or negligible impacts under implementation of the Proposed Action or its alternatives are not examined in detail. The environmental resources not examined further in this EA include:

- Invasive Species;
- EFH;
- Marine Mammals;
- Floodplains; and
- Critical Habitat.

3.1 SOCIOECONOMIC ENVIRONMENT

This section describes the existing socioeconomic and environmental justice conditions in the project area.

3.1.1 Local Economy

The Town of Perry is a small community with a population of 655 people that are primarily dependent on regional sources of employment (Washington County Council of Governments [WCCOG], 2009; United States Census Bureau [USCB], 2019a). Historically, the Town relied on fishing and forestry for its livelihood. Throughout the 1800s, lumber exports and ship building were major sources of income and wealth while fishing and related businesses, especially sardine packing, became major industries by the late 1800s (WCCOG, 2009).

Throughout the years, residents have primarily depended upon jobs with local employers within the Town of Perry, or in the nearby service center of Eastport (WCCOG, 2009). Currently, the largest employer in the Town is the elementary school with 22 listed employees (WCCOG, 2009; Perry Elementary School, 2019); therefore, the top employment sector for residents is listed as 'education services, health care and social assistance' (28.9%). Other significant sectors include 'retail trade' (12.9%), 'manufacturing' (10.8%), and 'public administration' (10.4%) (USCB, 2019a). There are also many self-employed and home-based businesses, particularly in the farming, fishing, construction, and forestry industries (WCCOG, 2009).

Tourists and seasonal residents are staying in the area longer than they have in the past. For much of the economic base, seasonal fluctuations in employment are significant for the commercial fishing, blueberry harvesting, and wreath brush production businesses. Recreational resources also have an impact on the local and regional economy. Tourist-related businesses that rely on recreational opportunities are significant sources of income to many towns in the region. In the Town of Perry, some retail businesses benefit from an influx of tourists to the region, particularly during the summer (WCCOG, 2009).

Within the last 20 years, the Town of Perry population has drastically decreased while the average age of the residential population has increased. The total population in 2000 was 847 residents with a median age of 37. Over 11% of the residents at that time were age 65 and over. In 2017, the population decreased 23% to a total of 655 residents. The median age increased to 48.3 with 23% at or above the age of 65 (USCB, 2019a). Therefore, the size of the workforce has significantly decreased since 2000. Despite the number of permanent and seasonal jobs, the unemployment rate in Perry has increased after the 2000 census and was reported as being higher than in Washington County, the Calais Labor Market Area, and the State of Maine. This is likely due to Town's location in a rural area, which limits employment opportunities and forces residents to commute to service centers where many of the newly created jobs are located (WCCOG, 2009).

The median household income for the Town of Perry of $44,417 per year is higher than that for Washington County as a whole ($40,328) but is not as high as that listed for the State of Maine ($53,024). The per capita income in Perry of $26,754 per year is also higher than in Washington County ($24,311), however, only slightly, indicating the presence of a high number of dependents per household (USCB, 2019a; WCCOG, 2009).

Economic activity in the Town of Perry is closely affiliated with the regional economy of Washington County, relying on service center communities like Eastport, Calais, Machias, and, to some extent, Bangor for the majority of goods and services used by residents. As a result, fluctuations in the region's economy have direct effects on the economy of Perry. Washington County has been, and continues to be, defined as an economically depressed area because of its distance from other sections of the State and its reliance on a seasonal economy (e.g., blueberries, wreaths and Christmas trees, fishing and clamming, wood harvesting). Top employment sectors for the County are comparable to those for the Town of Perry. Although manufacturing jobs have historically provided a base for Washington County residents, the entire manufacturing sector has declined steadily over the past three decades throughout the nation, the region, and the Town (WCCOG, 2009).

3.1.2 Housing

In 2017, the Town of Perry recorded a total of 550 housing units for an estimated population of 655 residents. Based on census data, one-unit detached structures accounted for approximately 87% of the total housing units, with mobile homes making up the remaining nearly 13% (USCB, 2019a). Between 1990 and 2000, the housing stock in Perry increased by nearly 26%, compared to an approximate 15% increase for Washington County and an 11% increase for the State. Over the same timeframe, the population in Perry increased by about 11.74% (WCCOG, 2009). Between 2000 and 2010, the housing stock in Perry increased approximately 4% and has remained stagnant ever since (USCB, 2019a).

Seasonal residences are an important segment of the housing stock in Perry. However, only 127 seasonally occupied homes were recorded in 2010. This represented approximately 23% of the total housing units available at that time and an overall decrease of 1.9% in this type of housing from the 2000 census data (USCB, 2019a).

A policy required by the Maine Growth Management Act is for every municipality "…to seek to achieve at least 10% of all housing built or placed during the next decade be affordable." Affordable housing is often defined as housing with costs not surpassing more than 30% of household income (WCCOG, 2009). In 2017, it was estimated that 35% of families making less than $20,000 were spending less than 30% of their income on housing costs, suggesting that housing is affordable for some low-income Perry households, as approximately 60% of the households in Perry have historically been categorized (USCB, 2019a; WCCOG, 2009). In Perry, 121 permits were issued for residential housing construction between 2000 and 2005, of which 29% (35 units) qualified as affordable housing and were built in the form of mobile/modular homes (WCCOG, 2009).

The majority of households (84.7%) in the Eastport market area are occupied or are for seasonal use. The housing stock includes a large portion of older homes, with almost 59.7% of the stock built on or before 1939. In general, the owner-occupied housing stock is older than the renter-occupied housing stock (USCB, 2019a). The Eastport area is a CHA and the 2014 HMSA (USCG, 2014) concluded that private sector housing in Perry cannot fully accommodate the demand of personnel assigned to USCG Station Eastport.

3.1.3 Transportation

Because Perry is a community with limited employment and services, residents often travel to other communities for shopping and work and are dependent on well-maintained transportation systems. Residents of Perry, as well as the surrounding region, are reliant on US Route 1 as their primary means of travel by automobile. US Route 1 is an arterial road that traverses Perry primarily in a north-south travel corridor, connecting it to the larger service center communities of Calais and Machias. Route 190 connects US Route 1 from the center of Perry to the port and City of Eastport (WCCOG, 2009). According to the 2017 census data, the workforce in Perry overwhelmingly chooses to commute alone via private vehicle (85.9%). The second-largest segment of the workforce commutes by carpool (10.4%) while some walk to work (0.8%) or work from home (2.9%) (USCB, 2019a).

Roads in Perry can be divided into two classifications by function: arterial and local. Arterial roads (e.g., State highways) serve long distance, high speed, through-traffic between communities. Local roads are all roads not in the arterial classification that provide access to adjacent land areas and usually carry low volumes of traffic. There are 11.43 miles of arterial and 32.4 miles of local roads within Perry. Shore Road is classified as a local road that is 4.21 miles in length within the municipal boundary and, as of 2009, was considered to be in fair condition. In 2004, sections of US Route 1 reportedly carried on average of 2,210 to 2,710 vehicles per day, while Shore Road was reported to support an average of 500 vehicles per day (WCCOG, 2009).

Public transportation options in Perry are currently limited. West's Transportation provides the only public transportation option for residents. Their Coastal Connection bus service offers daily service from Calais along US Route 1 through Pembroke and Perry, and Machias to Bangor, round trip (WCCOG, 2009; Maine Department of Transportation [MEDOT], 2019; West's Transportation, 2019). There are no commuter rail services currently available in Washington County, as passenger service stopped over 60 years ago, and freight service stopped in the mid-1980s. There is one private airstrip in Perry (i.e., Morrison's Airport), located 0.6 mile south of the project site along Shore Road, that is open for public use. Primary regional airports include: Machias Municipal Airport, Deblois Flight Strip, Eastport Municipal Airport, Princeton Regional Airport, Lubec Municipal Airport, Bar Harbor Airport, and Bangor International Airport, located 114 miles west of the project site. Finally, there are no public or private ferry services in Perry and none are planned (WCCOG, 2009).

3.1.4 Community Service and Medical Facilities

Perry Elementary School serves as the social center for the community, hosting many events throughout the year. Events include craft fairs, holiday concerts, and fundraising dinners. On Saturdays during the summer, there is a Craft and Farmers Market at the municipal building, and a large Harvest Fair is held every year on the first Saturday of October (WCCOG, 2009).

Several service organizations operate in the Town of Perry including (WCCOG, 2009):

- Boy Scouts;
- Cal Ripken League (Perry Cubs);
- Youth Sports offered through the school (basketball, track);
- After school programs two days/week;
- Perry Grange Hall; and
- Churches

The most convenient medical facilities available for residents of Perry are in Calais and Eastport. These facilities serve a wide range of medical needs.

Calais Regional Hospital serves a population of approximately 14,000. This facility employs close to 250 people and is licensed as a Critical Access Hospital. As such, the hospital has a 24-hour physician-staffed emergency department. A multi-specialty courtesy staff of 30 physicians, who see a limited number of patients, and a variety of medical specialists complement the 15 members of the hospital’s active medical staff (WCCOG, 2009).

Eastport Healthcare, Inc. provides an extensive range of health care services to residents of Eastport and the surrounding communities. These services include primary medical and dental care, psychiatric care, mental health counseling, substance abuse counseling, podiatry, physical therapy, nephrology and infectious disease care. This facility is as vital to the city’s economic and social health as it is to the physical health of its citizens. Without it, some residents would have to move away in order to receive the care they need (WCCOG, 2009).

3.1.5 Fire, Rescue, and Police Services

The fire house in Perry is located on US Route 1 within the Perry Municipal Building, which houses other municipal public works and offices such as the highway department, the Selectmen, and the school bus garage. The Perry Fire Department consists of 28 part-time volunteers. With the overall decreasing population in the region, particularly of young working families, it is increasingly difficult to attract public safety volunteers (WCCOG, 2009). The Perry Municipal Building is located 3.6 miles from the project site.

Perry public safety services are provided by the Washington County Sheriff’s Office and the Maine State Police. The Washington County Sheriff’s Office provides emergency dispatching services via the Washington County Dispatch, with non-emergency services routed through Orono, Maine. Emergency ambulance service is provided 24 hours per day by the Eastport Division of Downeast Emergency Medical Services, the regional ambulance service provided by Washington County Emergency Medical Service Authority (WCEMSA) (WCCOG, 2009).

WCEMSA is a regional emergency ambulance service covering 18 communities in three counties, running between 1,750 and 2,000 calls per year. The service provides emergency and transfer services from three full-time stations. In addition, they team up with two volunteer operations and first response units based in Alexander and Charlotte (WCCOG, 2009).

USCG Station Eastport operates as a marine search and rescue station. The station was rebuilt in 2004 and now houses the local emergency response center. The USCG Auxiliary Flotilla operates from the Eastport station, promoting safe boating through classes on boat handling and navigation. They also conduct search and rescue missions, provide manpower to support the USCG, and are part of the local response team (WCCOG, 2009).

3.1.6 Recreational Facilities

Perry offers many recreational opportunities. Open spaces include athletic fields, farms, forestlands, wetlands, bayshores, and river corridors. Although not all of the open space is accessible to the public, some of the Town's most important recreational resources rely on waterfront access, such as lake- and bay-front lands. As such, Perry is a haven for resident and visiting outdoor enthusiasts and will likely remain as such into the future (WCCOG, 2009).

Of the recreational opportunities in Perry, several are municipal in nature. Most of these municipal recreational opportunities are located at Perry Elementary School, including basketball courts, softball fields, playgrounds, and multi-purpose gymnasium and auditorium facilities. The community uses the school building for a variety of functions, including public hearings and meetings, private parties and receptions, coffee houses, and musical performances. The school charges private users a nominal fee to offset utility costs. The Town of Perry has a Recreation Committee of volunteers who organize various celebrations, including the Harvest Fair and parades, and help promote recreational activities. The Perry Grange Hall also organizes various public dinners and parties for residents and visitors alike (WCCOG, 2009).

3.1.7 Schools

Perry operates their own school department at the elementary level. Perry Elementary School, located on US Route 1, was built in 1988 and features classrooms for grades K-4 (kindergarten for four-year-old children) through eight. The facility includes a gym/cafeteria with a stage for auditorium use, a library/classroom, two to three computers (laptops for grades seven and eight) in all classrooms, and offices (WCCOG, 2009). This school is located 1.9 miles from the project site.

At the secondary level, Perry is part of the Alternative Organizational Structure (AOS). As such, students attend the AOS #77 public Shead High School in Eastport. Shead High School was built in 1981. It has a complete range of classrooms, gymnasium, computer lab, cable television broadcasting facilities, and a licensed radio station. Parents also have the choice of sending their children to Calais High School or the Washington Academy, but must make tuition payments for these schools that are outside of their jurisdiction (WCCOG, 2009).

Calais High School in Calais, Maine, was remodeled in 2004 and includes the Calais Regional Vocational Center. It is a public school with a complete range of classrooms, gymnasium, computer lab, home economics room, and cable television broadcasting facilities. The Washington Academy in East Machias, Maine, is a private school that hosts regional and international students who attend daily or as boarders living on campus. It includes many classrooms, computer labs, a performing arts stage, cafeteria, library, gymnasium complex, music classrooms, and an Industrial Technology Building that hosts the Marine Trades Program, Industrial Arts, and Computer Networking and Repair classes (WCCOG, 2009).

Enrollment in regional high schools has shifted in the past eight years with Calais High School falling slightly, Shead High School declining, and Washington Academy steadily growing. Declines in overall school enrollment in eastern Washington County are reflective of the declines in the number of younger residents in the region (WCCOG, 2009). The Town of Perry experienced nearly a 55% decrease in children ages five to 19 and a 59% decrease in children under the age of five between 2000 and 2017 (USCB, 2019a).

The percentage of Perry residents with a bachelor's degree or higher level of attainment is greater than the surrounding communities and lies between the County and State averages. However, Perry's high school graduate or higher level of attainment is comparable to nearby communities and lower than that of the County and the State (WCCOG, 2009).

Regional vocational, technical and higher educational facilities include (WCCOG, 2009):

- The Washington County Community College in Calais;
- University of Maine at Machias; and
- Husson University (operating the following):
    - The Boat School-Husson in Eastport; and
    - Unobskey College in Calais.

3.1.8 Utilities

Perry has a Public Works Department and manages their roads through an elected Road Commissioner (also the Selectmen) and hired employees. However, winter plowing and salt maintenance is contracted from the neighboring Town of Pembroke (WCCOG, 2009).

Perry's solid waste is collected at the Marion Users Transfer Station (MUTS) and then transported to New Brunswick, Canada for disposal. The State maintains an objective for each municipality to recycle at least 50% of its household waste. According to the State Planning Office, MUTS users only achieved a 12.09% recycling rate in 2008 (WCCOG, 2009).

Perry has no public water services. Residents obtain their water from either natural springs or groundwater supply wells (WCCOG, 2009). The principal sources of groundwater in Maine are glacial-outwash deposits and bedrock formations. Groundwater is typically collected for public supply purposes through wells placed in rock, sand, or gravel deposits, or directly from natural springs (Prescott, 1963). The project site contains two existing private groundwater supply wells, one supplies the single-family home and the other supplies the barn (Mott, 2018). These two wells, along with three newly drilled wells, were the subjects of a groundwater supply study (GSS) and a nitrate impact assessment (NIA) in 2019 (see **Appendix D**). Groundwater collected from each of these wells was also tested for contaminants. The five wells range in depth from 75 feet (ft) to 420 ft below ground. A supplemental groundwater evaluation was conducted in 2020 to assess the effects of the pumping of groundwater on arsenic levels and groundwater supply at the proposed development and surrounding areas (see **Appendix E**).

Based on observed soil conditions and groundwater elevation measurements at the two existing wells and three newly drilled wells, groundwater flow beneath the site is expected to occur largely through the fractures in the bedrock. The soil evaluation and geotechnical borings at the site indicated that groundwater is present only seasonally in the thin soils above the bedrock surface. The water table was encountered at approximately 16 inches (in) below ground level during the recent wetland delineation event at the site (see **Appendix D**).

Groundwater flow beneath the central and eastern portions of the site is to the east. However, in the northwestern portion of the site, groundwater is interpreted to flow northerly to the adjacent wetlands near the northern boundary of the site. Based on soil types and slopes, it is estimated that approximately 12 in of precipitation per year is required to recharge the groundwater system.

The Town also has no public sewer services. Therefore, septic systems are used to dispose of sanitary waste (WCCOG, 2009). Currently, the site contains a 1,000-gallon concrete septic tank and associated leach field that services the property (Mott, 2018). A subsurface wastewater disposal evaluation (see **Appendix D**) was conducted in 2019 to evaluate the presence of limiting geologic features, such as a seasonally-high water table, restrictive layers, and/or bedrock that may impose limits on the construction design.

The stormwater system in Perry consists primarily of roadside ditches and catch basins (WCCOG, 2009).

Public utilities for the Town are provided by the following companies (WCCOG, 2009):

- Electrical Service – Emera Maine or Eastern Maine Electric Cooperative;
- Telephone Service – Verizon, US Cellular, or AT&T; and
- Internet – Various providers.

3.1.9 Environmental Justice

An environmental justice analysis must be conducted when environmental impacts may occur as a result of a Federal agency action to determine whether any disproportionately high and adverse human health or environmental effects occur within low-income populations, minority populations, and/or tribal populations (EJIWG, 2019).

Based on information gathered through the USEPA Environmental Justice Screening and Mapping Tool, minorities within Washington County, where the project site is located, accounted for 10% of the population between 2013 and 2017. This ranked greater than the State average of 6% but much less than the national average of 39%. Of the 10% minority population, 5% identified as Native American, 2% identified as Hispanic, and 2% identified as a mix of two or more races. The remaining 1% was not classified into a specific category (USEPA, 2020).

Low-income families within Washington County accounted for 44% of the population between 2013 and 2017. This ranked greater than the State average of 31% and the national average of 33% (USEPA, 2020).

The Passamaquoddy Pleasant Point Reservation is one of two reservations of the Federally recognized Passamaquoddy Tribe in Washington County. The reservation is located on a peninsula between the shores of Passamaquoddy Bay and Cobscook Bay, along Route 190, approximately 3 miles southeast of the project site, between Eastport and Perry. Because of its location, the peninsula has served as a traditional seasonal fishing (shellfish and other fish) village to the Passamaquoddy (Pleasant Point Tribal Government [PPTG], 2019). According to the USCB, an estimated 40.1% of the families on the reservation were recently (2017) living at or below the poverty level. That is nearly double the amount of the surrounding Washington County (25.3%), more than double the amount of the US (17.3%), and more than three times the rate of the State of Maine (13.1%) for that same year. Poverty in the Passamaquoddy community at Pleasant Point reached a nearly 20-year high in 2016 when it climbed to 41.6% (USCB, 2019b).

3.1.10 Aesthetics and Visual Resources

Visual resources are the visible physical features present on a landscape, such as land, water, vegetation, animals, structures, and the skyline. The visual landscape of the project site and the surrounding area is characterized by rural features atop gently rolling topography (see **Section 3.2.1**). Single-family homes on Shore Road are sparsely scattered over large residential lots. While some land in the surrounding area and on the project site has been cleared for home sites, for use as pastureland for horses and other livestock, and for agricultural production, a large portion of the surrounding area is heavily wooded in nature. The project site, 75 acres in size, currently contains a single home, a barn, and several small outbuildings (see **Section 1.3.4**) at the front near Shore Road. The rear portion of the parcel, approximately two thirds of its total acreage, is heavily wooded. Views of the project site from Shore Road are unobstructed. Views from abutting properties to the north and south are obstructed by relatively narrow forested buffers. No State-recognized scenic byways or vistas are located within the viewshed of the project site. Sources of nighttime light near the project site consist of minimal exterior lighting fixtures on existing homes. Streetlights are not present.

3.2 PHYSICAL ENVIRONMENT

This section describes the existing physical features in the project area.

3.2.1 Topography

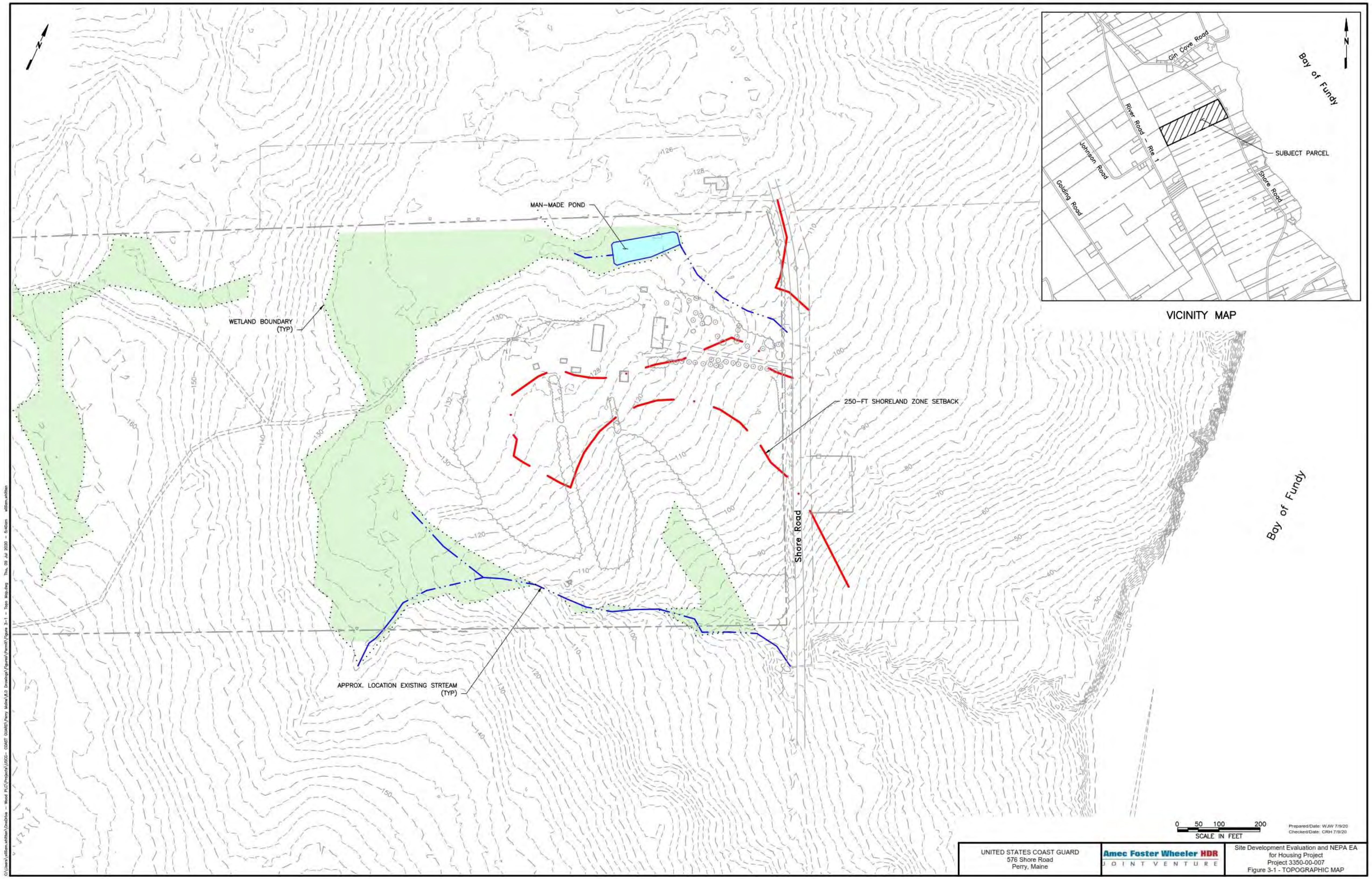
Site topography is gently sloping from an elevation of approximately 130 ft (North American Vertical Datum of 1988 [NAVD 88]) at the west end of the proposed development area to an elevation of 90 ft or less along Shore Road (see **Figure 3-1**). Stormwater drainage in the developed area of the site flows to the west, north, and southeast into the forested wetlands and two streams on the property that discharge through two culverts beneath Shore Road. These streams ultimately drain into Passamaquoddy Bay.

3.2.2 Geology and Soils

The site is located in the Seaboard Lowland section of the New England Physiographic Province. The Seaboard Lowland section is defined by the sloping margin of uplands, including areas that were inundated by the ocean or large proglacial lakes during the last glacial retreat. The project area is also located within the East Coast biophysical region, which is characterized by low ridges surrounded by poorly drained, relatively flat terrain with elevations between approximately 98 ft and 1,000 ft (Gray & Pape, 2019).

While glaciers are responsible for much of the modern physiography in the area, the underlying bedrock geology also plays a significant role (Gray & Pape, 2019). The project site is underlain by the basalt bedrock member of the Upper Devonian-age Perry Formation. This bedrock is defined as igneous, unmetamorphosed, basaltic volcanic rock. It is surrounded, except to the east, by the sandstone member of the Devonian-aged Perry Formation (United States Geological Survey [USGS], 2019).

The recent wetlands delineation conducted described the upland soils as being composed of predominantly brown sandy loam or gravelly sandy loam (see **Appendix D**). The site includes three soil types: Creasey gravelly silt loam soils with 3 to 8% slopes (CtB) in the eastern third of the property, very stony Lamoine-Rawsonville-Scantic complex soils with 0 to 8% slopes (LKB) over the majority of the central and western portion of the site, and very stony Naskeag-Rawsonville-Hogback complex soils with 0 to 8% slopes (NBB) lining the far western boundary (see **Figure 3-2**). The soils that underlie the project footprint are the Creasey gravelly silt loam soils (CtB), which are described as shallow, somewhat excessively drained, loamy, supraglacial meltout till soils derived from sandstone and formed on the footslopes of hills and ridges. They are not classified as hydric but meet the definition of "farmland of statewide importance" under the Farmland Protection Policy Act (FPPA) (United States Department of Agriculture [USDA], 2019) by virtue of their classification on the Natural Resources Conservation Service (NRCS) soil survey.


MAN-MADE POND
WETLAND BOUNDARY (TYP)
250-FT SHORELAND ZONE SETBACK
APPROX. LOCATION EXISTING STRTEAM (TYP)
Shore Road
Bay of Fundy
VICINITY MAP
Gin Cove Road
River Road
Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
Bay of Fundy
SCALE IN FEET
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA for Housing Project
Project 3350-00-007
Figure 3-1 - TOPOGRAPHIC MAP

This classification overrides the fact that the land on the project site is not currently being farmed and there are no historical records of it being farmed for agricultural purposes since the late 1800s (Gray & Pape, 2019), while it has been used in recent years for pastureland for horses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to non-agricultural use and they are undertaken by a Federal agency. The USCG performed a Farmland Conversion Impact Rating assessment of the project site and had this assessment reviewed by the local NRCS office. The NRCS determined that the Proposed Action at the project site was in full compliance with the FPPA (see **Appendix F**).

A geotechnical evaluation was conducted at the project site. Overburden soils included approximately 0.3 to 1.0 ft of topsoil overlying 1.7 ft to 2.6 ft of glacial till. That investigation recorded the following subsurface conditions and engineering characteristics of the soils.

Topsoil

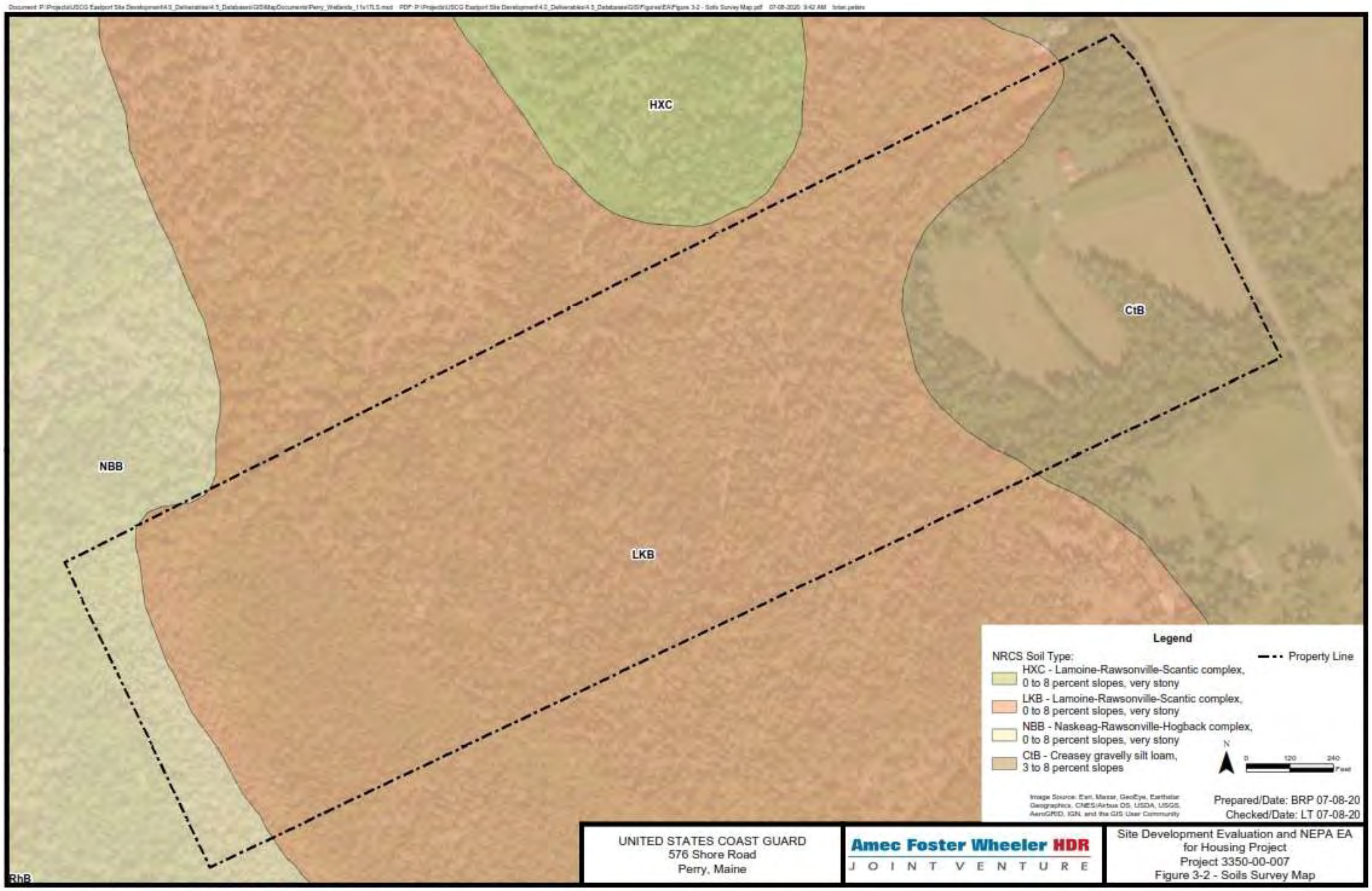
The topsoil encountered within the project footprint generally ranges from brown fine to coarse sand with little to some silt, trace to some gravel, and trace clay, to brown silt with little to some sand, little clay, and trace to few gravel, based on visual descriptions. The topsoil also contains occasional organics and frequent rootlets. Laboratory testing results confirmed the topsoil consists of brown fine to coarse sand with some gravel and little silt and the relative density was described as loose to medium dense. The field moisture condition of the soil was rated as moist.

Glacial Till

Glacial till was encountered at each boring location beneath the topsoil. The glacial till was reported to generally consist of the following, based on visual descriptions and laboratory testing results:

- brown non-plastic silt with trace to some sand and gravel;
- reddish-brown fine to coarse sand with little to some gravel, and few to some silt; and/or
- reddish-brown gravel with some sand, and few silt.

The glacial till encountered is generally consistent with published mapping by the Maine Geological Survey (i.e., heterogeneous mixture of sand, silt, clay, and stones). The relative density of the glacial till was classified as medium dense to very dense and its moisture was described as moist.


HXC
NBB
LKB
CtB
RhB
Legend
NRCS Soil Type:
HXC - Lamoine-Rawsonville-Scantic complex, 0 to 8 percent slopes, very stony
LKB - Lamoine-Rawsonville-Scantic complex, 0 to 8 percent slopes, very stony
NBB - Naskeag-Rawsonville-Hogback complex, 0 to 8 percent slopes, very stony
CtB - Creasey gravelly silt loam, 3 to 8 percent slopes
Property Line
N
0 120 240 Feet
Prepared/Date: BRP 07-08-20
Checked/Date: LT 07-08-20
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 3-2 - Soils Survey Map

Bedrock

The top of weathered bedrock was interpreted at depths ranging from approximately 3 to 4 ft below ground surface (2.0 to 3.3 ft below the glacial till). The weathered bedrock was found to vary in thickness from approximately 0.4 to 1.5 ft and was generally consistent with published mapping by the Maine Geological Survey as the Perry Formation, consisting of a cobble and pebble conglomerate with sandstone and siltstone. Sand and silt were typically encountered within the bedrock fractures. The bedrock was generally fine to coarse grained and moderately weathered.

3.2.3 Climate Change and Air Quality

The regional climate is classified as temperate-continental, with a significant temperature range among the seasons and moderate annual rainfall measured around 42.9 in. The average summer temperature is recorded as 68 degrees Fahrenheit (°F), and the average winter temperature is -19.4°F (NOAA, 2000a - referenced in Gray & Pape, 2019). Terrain and plant cover affect local climatic conditions creating microclimates, particularly in areas of considerable topographic variation. Winds prevail from the south and west. However, in the winter the winds frequently blow from the north (NOAA, 2000a and NOAA, 2000b - referenced in Gray & Pape, 2019).

Maine’s climate has warmed about 3°F since 1900. As such, spring is arriving earlier, bringing with it more frequent heavy rainstorms and more precipitation. The average annual precipitation in the Northeast increased 10% from 1895 to 2011, and precipitation from extremely heavy storms has increased 70% since 1958. Alternatively, summers are hotter and drier leading to an increased risk of drought during summer and fall (USEPA, 2016).

As a result of climate changes, the sea level is rising. A rising sea level erodes wetlands and beaches and increases damage from coastal storms. Coastal cities and towns, such as Perry, are becoming more vulnerable to storms as sea levels rise, shorelines erode, and storm surges become higher. In the coming decades, the changing climate is likely to further increase the chances of flooding that damages property and infrastructure; harms ecosystems; and disrupts fishing, agriculture, and winter recreation in Maine. It may also lead to some increased risks to human health through the increase of some insect-borne diseases and environmental factors related to respiratory conditions, such as smog and pollen (USEPA, 2016).

The USEPA has set NAAQS for six commonly found air pollutants as part of the Federal CAA requirements (see **Section 1.7.3,** *Clean Air Act and Conformity Requirements*). These pollutants (also known as criteria pollutants) are known to harm human health and the environment and cause property damage. The USEPA regulates pollutants by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels (SILs). Maine is in the Northeast Ozone Transport Region, an area that covers the 11 northeastern states from Maryland to Maine, as well as Washington, DC, and portions of Northern Virginia. Washington County, along with the rest of Maine, is in attainment of all air quality standards.

3.2.4 Noise

Noise can be characterized by the following four factors: frequency, intensity, duration, and distance. Each of these factors is described below:

- Frequency – Sound travels in waves, and the frequency of a sound is the number of wave cycles per second, measured in hertz. High frequency sounds have many cycles per second; low frequency sounds have fewer;
- Intensity – Noise intensity is the power (average energy per unit time) transmitted through a unit area in a specific direction. Sound intensity (i.e., loudness) is measured in decibels (dB). The dB is a relative unit of measure describing the logarithm of the ratio of a sound's intensity to a reference intensity. Because of the logarithmic scale, dB are not directly additive (e.g., two 70 dB sounds results in 73 dB cumulative sound, but not a doubling, or 140 dB sound). For broadband sounds, a change of 3 dB is the minimum change perceptible to the human ear;
- Duration – The duration of a sound affects its potential impact. Generally, long-term sounds are considered more harmful than short bursts of sound. "Masking" occurs when the pressure of a sound masks a sound of interest by being equal to or greater in sound; and
- Distance – Sound radiates in all directions from the source, in a spherical pattern. As the sound radiates, the pressure wave increases in size and the power of the wave dissipates.

Occupational Safety and Health Administration (OSHA) regulations state that workers must not be exposed to noise levels above 85 dB_A as a 8-hour noise exposure level (A-weighted sound levels (dB_A) are dB scale readings adjusted for the varying sensitivity of the human ear to different frequencies of sound) or to 140 dB_C as a peak sound level (C-weighted sound levels (dB_C) are dB scale readings used for specifying peak or impact noise levels).

The two most common types of noise are point source and line source. Construction generates point source noise, that is, noise associated with a source that remains in one place for extended periods of time. Typical construction equipment and associated point source noise include the following:

- Backhoe (80 dB_A);
- Concrete mixer (85 dB_A);
- Material handling trucks (88 dB_A); and
- Bulldozer (85 dB_A).

Noise associated with the construction equipment listed above is based on the typical noise level at a distance of 50 ft from the source (United States Department of Transportation [USDOT], 2019).

However, hand held construction equipment, such as hammer drills, can be even more dangerous to a person's hearing, reaching peak noise levels up to 120 dB_A (American National Standards Institute [ANSI], 2019).

The project site includes typical ambient noise present on a residential property located on a rural county road (i.e., vehicular traffic). The nearest noise receptor is a private residence located over 200 ft to the northwest of the proposed project footprint.

3.2.5 Hazardous Materials/Hazardous Wastes

A hazardous material is defined as any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. These items are regulated in the US primarily by laws and regulations administered by the USEPA, OSHA, USDOT, and the US Nuclear Regulatory Commission (Institute of Hazardous Materials Management [IHMM], 2019). Hazardous waste includes waste generated from many sources, ranging from industrial manufacturing process wastes to batteries, with properties that make it dangerous or capable of having a harmful effect on human health or the environment and require its disposal at approved hazardous waste treatment and disposal facilities (USEPA, 2019a).

Issues associated with hazardous materials and wastes typically center around underground storage tanks (USTs); above-ground storage tanks (ASTs); and the storage, transport, and use of pesticides, bulk fuel, petroleum, oil, and lubricants. When such resources are improperly used, they can threaten the health and well-being of wildlife species, botanical habitats, soil systems, water resources, and people.

The project site currently contains one oil AST used for heating the existing home but no known USTs (Mott, 2018). A radon elimination system has been installed on the home (Mott, 2018). However, Washington County is classified as having a predicted average indoor radon screening level between 2 and 4 picocuries per liter (City-Data.com, 2019). These average levels are below the USEPA recommended action level of 4 picocuries per liter.

A Hazardous Materials Assessment (HMA) was conducted to identify the presence of hazardous materials on or within each of the existing structures associated with the residence, as well as eight identified debris piles on the project site. The HMA was completed to identify asbestos-containing material (ACM), lead-based paint (LBP), and other potential hazardous materials/wastes and universal wastes that would require special handling and disposal or would be regulated prior to/during renovations or demolition of the structures and associated site development activities.

ACM was detected in the first and second floor bathroom sheet flooring in the existing house. Hazardous materials/wastes and universal wastes were identified at the project site, including fluorescent light bulbs and associated light ballasts, mercury-containing thermostats, an emergency light battery, motor oil, propane tanks, and the above-mentioned AST. LBP was identified on the double wood doors and the frame of the workshop, on the ground adjacent to this door system, and on miscellaneous pieces of wood chips in one of the debris piles (unknown origin).

Groundwater samples were collected from within the five deep groundwater wells at the project site and analyzed for the presence of hazardous waste. Arsenic, iron, manganese, and fecal coliform were the only parameters that were elevated above applicable drinking water standards or guidelines for groundwater. However, the concentrations were within the typical ranges for the three metals, as they are naturally occurring and common within Maine bedrock groundwater. The high fecal coliform result was from one of the existing groundwater supply wells and was likely associated with the high turbidity related to its inactivity, shallow well depth, and/or potential compromise of the well's casing seal.

Soil was also collected within the construction footprint and analyzed for hazardous waste compounds. Arsenic was detected in the soil in concentrations that exceeded Maine standards for residential sites. These concentrations were consistent and most likely attributable to naturally occurring arsenic. However, benzo(a)pyrene, a probable human carcinogen, was detected at four and half times the residential standards in one of the debris piles.

3.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources in the project area. Biological resources include native or naturalized plants and wildlife and the habitats in which they occur.

3.3.1 Terrestrial Environment

The property currently contains a residential home and associated structures (e.g., barn, shed, etc.) in the eastern third of the parcel. The eastern section is also characterized by three pastures that lie south of the house. The parcel is bounded to the west, north, and south by a mixture of forested upland and wetland areas that also occupy the western two thirds of the property (see **Figure 1-2**).

3.3.1.1 Flora

The upland community covering the majority of the project site is characterized as a mixed coniferous forest. Based on the wetland delineation performed on 15 May 2019, the upland forested areas at the site contained canopy layers that included balsam fir (*Abies balsamea*), paper birch (*Betula papyrifera*), red spruce (*Picea rubens*), and northern white cedar (*Thuja occidentalis*). The sapling undergrowth included balsam fir and red spruce. The herb stratum included unidentified Sphagnum moss (*Sphagnum* sp.), grass (Poaceae family), sedge (*Carex* sp.), and bracken fern (*Pteridium* sp.) species. Flowers were also present in the herb undergrowth, including bunchberry (*Cornus canadensis*), starflower (*Trientalis borealis*), and lily-of-the-valley (*Convallaria* *majalis*) (see **Appendix D**). However, the portion of the property that is proposed to be developed has historically been cleared and currently contains various building structures and three pasture fields divided by tree lines.

3.3.1.2 Fauna

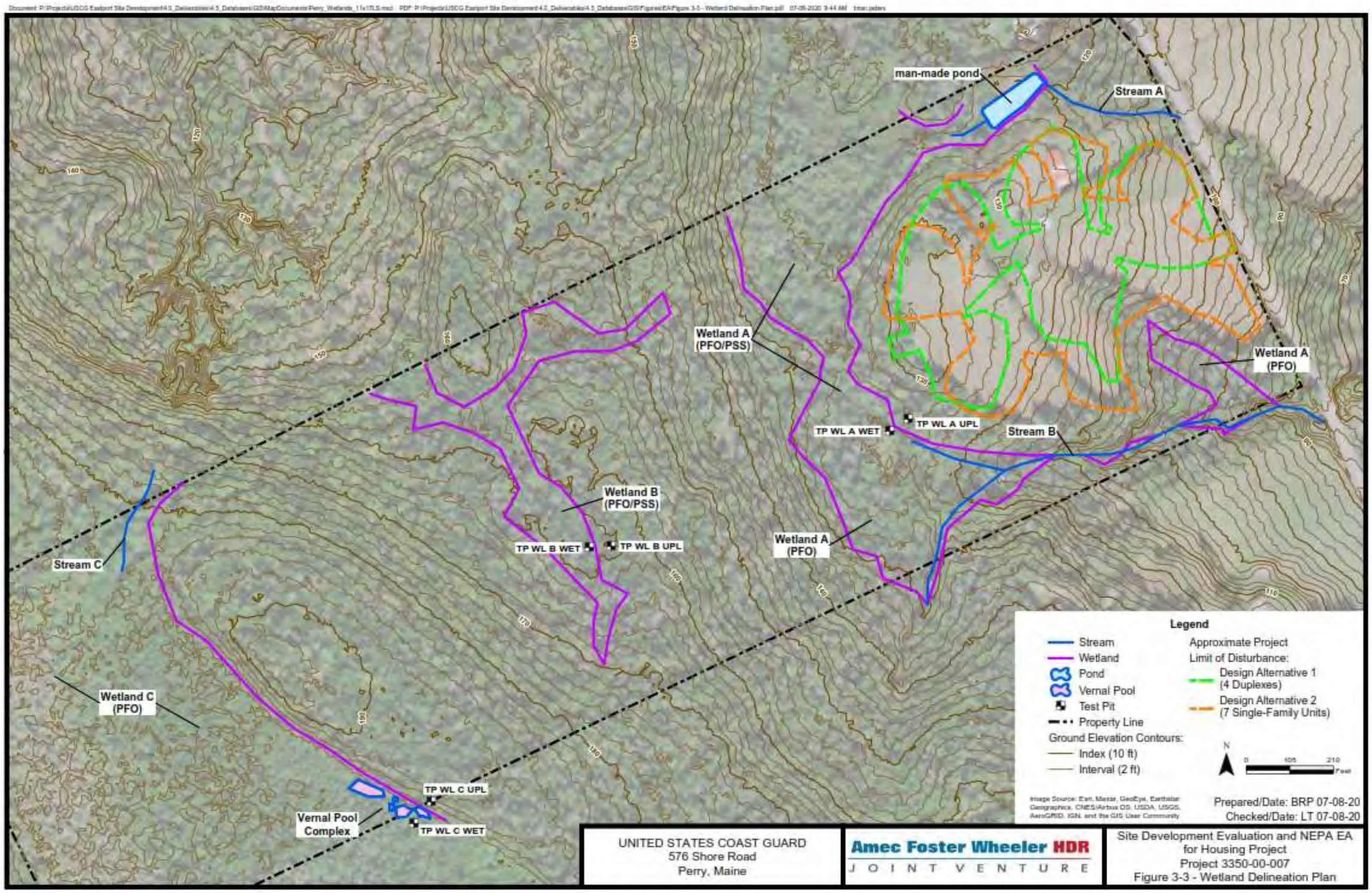
Animals encountered at the site during the various field surveys were not recorded. However, wildlife such as moose (*Alces alces*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), turkey (*Meleagris gallopavo*), opossum (*Didelphis virginianus*), various herpetofauna, and songbirds are likely to inhabit the woodlands and fields throughout Washington County. Nearby lakes and streams may be occupied by beavers (*Castor canadensis*), river otters (*Lontra canadensis*), mink (*Neovison vison*), muskrat (*Ondatra zibethicus*) and various waterfowl and fish, among many others. Overall, inland Maine is home to 292 species of birds, 58 species of wild mammals, 39 species and subspecies of reptiles and amphibians, and over 16,000 species of terrestrial and freshwater invertebrates (Maine Department of Inland Fisheries & Wildlife [MDIFW], 2019).

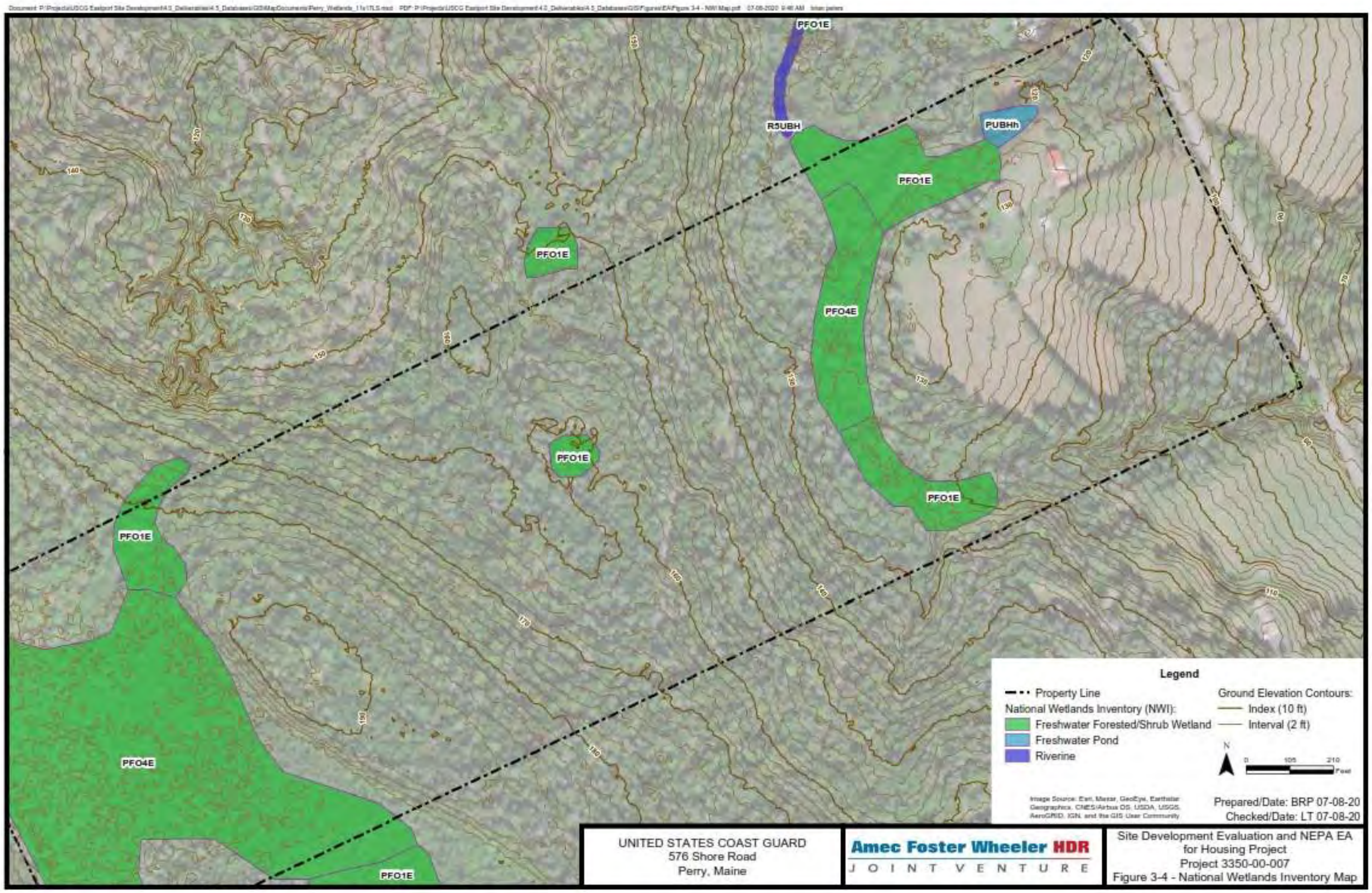
3.3.2 Water Resources and Aquatic Environment

The project site was evaluated on 15 May 2019, for the presence of freshwater features (see **Appendix D**). The results confirmed the presence of three large forested wetlands, a man-made pond, a vernal pool complex, and three perennial streams (see **Figure 3-3**).

3.3.2.1 Surface Water

The site falls within the confines of the Maine Coastal watershed boundary. Within the project site, recent wetlands mapping indicates the presence of three streams (Stream A, Stream B, and Stream C), one man-made pond, and one vernal pool complex (see **Figure 3-3**). The three streams are all first or second order in size and all drain to the east into Passamaquoddy Bay. Passamaquoddy Bay ultimately drains into the Bay of Fundy (Gray & Pape, 2019).


man-made pond
Stream A
Wetland A (PFO/PSS)
Wetland A (PFO)
Wetland A (PFO)
TP WL A WET
TP WL A UPL
Stream B
Wetland B (PFO/PSS)
TP WL B WET
TP WL B UPL
Stream C
Wetland C (PFO)
Vernal Pool Complex
TP WL C UPL
TP WL C WET
Legend
Stream
Wetland
Pond
Vernal Pool
Test Pit
Property Line
Ground Elevation Contours:
Index (10 ft)
Interval (2 ft)
Approximate Project Limit of Disturbance:
Design Alternative 1 (4 Duplexes)
Design Alternative 2 (7 Single-Family Units)
Prepared/Date: BRP 07-08-20
Checked/Date: LT 07-08-20
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA for Housing Project
Project 3350-00-007
Figure 3-3 - Wetland Delineation Plan


PFO1E
R5UBH
PUBHh
PFO1E
PFO1E
PFO4E
PFO1E
PFO1E
PFO1E
PFO4E
PFO1E
Legend
Property Line
National Wetlands Inventory (NWI):
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine
Ground Elevation Contours:
Index (10 ft)
Interval (2 ft)
N
0 105 210
Feet
Image Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Prepared/Date: BRP 07-08-20
Checked/Date: LT 07-08-20
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
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JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 3-4 - National Wetlands Inventory Map

Stream A spans both sides of an old man-made pond located in the northeast corner of the property within Wetland A (see **Figure 3-3**). The USFWS National Wetlands Inventory (NWI) mapper does not classify Stream A but it does recognize the pond as a palustrine, unconsolidated bottom, permanently flooded, diked/impounded body of water (PUBHh) (see **Figure 3-4**).

Stream B was delineated in the southeastern portion of the property within Wetland A and Stream C was delineated as bisecting the northern property boundary within Wetland C near the western border. The NWI mapper also does not recognize Stream B or Stream C. Therefore, there are no official classification designations for the three streams located onsite. However, a stream segment leading from Wetland A north of the property boundary is classified as a riverine, unknown perennial, unconsolidated bottom, permanently flooded water feature (R5UBH) and is likely similar to those found onsite.

The vernal pool complex was identified within the western portion of the property, within Wetland C, near the southern border. The pools are not believed to be natural features but created by man for either historic peat harvesting or as dug wells for water/ice supply. They were recorded as having maximum depths of 12 to 36 in (1 to 3 ft) and containing spotted salamander (*Ambystoma maculatum*) egg masses. These pools are also not recognized by the NWI and therefore do not have official classification designations.

Appendix D presents photos of the surface water features described above.

3.3.2.2 Wetlands

The recent wetlands delineation conducted indicated the presence of three freshwater wetlands at the site (Wetland A, Wetland B, and Wetland C). Wetland A bisects the property just west of where the housing units are proposed. It also extends along the northern and southern boundaries to the east in association with Streams A and B. Wetland B bisects the property at the approximate center of the property, extending slightly east along the northern boundary, and Wetland C covers the western third of the 75-acre parcel (see **Figure 3-3**).

The NWI recognizes portions of Wetland A and classifies it as a mixture of palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated wetlands (PFO1E) and palustrine, forested, needle-leaved evergreen, seasonally flooded/saturated wetlands (PFO4E) (see **Figure 3-4**). This wetland community was dominated by red maple (*Acer rubrum*) in the canopy layer, but also contained balsam fir and paper birch. The sapling undergrowth was dominated by speckled alder (*Alnus incana*). Two species of ferns, cinnamon fern (*Osmundastrum cinnamomeum*) and sensitive fern (*Onoclea sensibilis*), dominated the herb stratum, which also included an unidentified grass and sedge species as well as raspberry (*Rubus occidentalis*) and gooseberry (*Ribes uva-crispa*). Soils were described as having a thick layer of muck (19 in) atop thin layers of dark brown silt loam (2 in) and olive/gleyed gravelly silt loam with reddish brown redox features (4 in) (see **Appendix D**).

The NWI recognizes a small pocket of Wetland B and classifies it as a palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated wetland (PFO1E) (see **Figure 3-4**). This wetland community was dominated by black spruce in the canopy layer, but also contained balsam fir and red maple. The sapling undergrowth was dominated by speckled alder but included winterberry (*Ilex verticillata*) as well. Sphagnum moss dominated the herb stratum, which also included an unidentified grass and sedge species as well as sensitive fern. Soils were described as having a thick layer of muck (12 in) atop thin layers of brown gravelly loam mixed with coarse sand (4 in) and olive brown gravelly sand (2 in) (see **Appendix D**).

The NWI classifies Wetland C as primarily a palustrine, forested, needle-leaved evergreen, seasonally flooded/saturated wetland (PFO4E) with small pockets of palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated wetlands (PFO1E) (see **Figure 3-4**). This wetland community was dominated by northern white cedar in the canopy layer. To a lesser degree, the canopy also contained balsam fir, black spruce, red maple, and yellow birch (*Betula alleghaniensis*). The undergrowth was dominated by balsam fir and northern white cedar saplings as well as winterberry shrubs. Sensitive fern dominated the herb stratum, which also included an unidentified sedge species, cinnamon fern, starflower, and Sphagnum moss. The wetland was described as a bog with black/brown muck soil that extended the entire 48-in limit of observation (see **Appendix D**).

Appendix D presents photographs of the wetland features observed at the site.

3.3.3 Threatened and Endangered Species

The Federal ESA, as amended, protects species that are endangered, threatened, or proposed for listing. The USFWS Information Planning and Conservation System indicated the possible presence of only one species, the Federally threatened northern long-eared bat (*Myotis septentrionalis*), at the project site (see **Appendix G**).

The northern long-eared bat is medium-sized with a body length of 3 to 3.7 in and a wingspan of 9 to 10 in. As its name suggests, this bat is distinguished by its long ears, particularly compared to other *Myotis* species. They spend winter hibernating in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, they roost singly or in colonies underneath bark, in cavities, or in crevices of live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, such as caves and mines. They may also be found roosting in structures, such as barns and sheds, on rare occasion. No previously documented hibernation sites or roosting trees are located in close vicinity to the project site.

Northern long-eared bats emerge at dusk to feed, primarily by flying through the understory of forested areas and catching moths, flies, leafhoppers, caddisflies, and beetles while in flight or by gleaning insects from vegetation. This species has been particularly affected by a disease called white-nose syndrome, which is caused by a fungus. As a result, the bats have exhibited a dramatic population decline. White-nose syndrome is the primary reason for the Federal listing of this species (USFWS, 2015).

The Maine Natural Areas Program responded to a request for an Environmental Site Review of the subject project on 6 June 2019 for the presence of rare or unique botanical features documented in the vicinity of the project site. Based on their current records, there are no rare botanical features documented specifically within the footprint of the Proposed Action. However, they did provide supplemental information regarding the dawn-land sedge (*Carex waponahkikensis*), a rare and exemplary botanical feature documented to occur within four miles of the project site. It was suggested that a field survey be conducted to confirm this plant is not located within the construction area of disturbance as the project site contains field/roadside (non-forested, wetland or upland) habitat that this species prefers (see **Appendix G**).

3.4 LAND USE

The project site is within the Town of Perry's Limited Residential District, which is currently zoned for low-density residential development. Washington County is included in the Maine Coastal Zone. As such, the USCG will submit a Coastal Zone consistency determination to the MCP, within the Maine Department of Marine Resources, as required, after project design is complete and prior to the construction associated with the Proposed Action. This review process will be coordinated with other required Federal and State permitting processes.

As part of this compliance, the Coastal Zone consistency rules require local governments to develop and administer the following restrictions in shoreland areas:

- Resource protection zones—development strictly limited within 250 ft of the shoreline or the upland edge of a wetland;
- Limited residential, limited commercial, and stream protection zones—no building allowed within 75 ft of the shoreline except adjacent to a "great pond" where the setback for development is a minimum of 100 ft;
- General development zones—no building allowed within 25 ft of the shoreline, except for water-dependent uses; and
- Maritime use zones—only water-dependent use allowed; no minimum setback.

3.5 CULTURAL RESOURCES

Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. Depending on their conditions and historic use, these resources may provide insight to living conditions in previous civilizations and may retain cultural and religious significance to modern groups.

Archaeological resources comprise areas where prehistoric (Pre-Contact) or historic (Post-Contact) activity measurably altered the environment or deposits of physical remains (e.g., arrowheads, bottles) discovered therein. Architectural resources include standing buildings, districts, bridges, dams, and other structures of historic or aesthetic significance. Traditional cultural resources can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the persistence of traditional culture.

The principal Federal law addressing cultural resources is the NHPA of 1966, as amended (16 USC §470), and its implementing regulations (36 CFR §800). The regulations detail the procedures for identifying and evaluating historic properties; assessing the effects of Federal actions on historic properties; and consulting to avoid, reduce, or minimize adverse effects (corporately referred to as the Section 106 process). As part of the Section 106 process, a heritage management firm conducted a Preliminary Cultural Resources Study for the project site (see **Appendix H**). A reconnaissance survey was conducted by the firm in June 2019. The project site was observed and photographed to provide an initial characterization of the landscape and potential cultural resource sensitivity, as well as the architectural characterization of the extant structures on the property. Results and findings of the study are provided below.

3.5.1 Historic Resources

Previous archaeological investigations in the region and in the State of Maine indicate that Pre-Contact Native American occupation sites are predominately sited proximal to water resources, such as seacoasts, streams, lakes, and wetlands. As such, Pre-Contact Native American presence around Perry was strong leading up to the Contact period, especially near Passamaquoddy Bay (Gray & Pape, 2019).

Although no background evidence was found to indicate a known Native American presence at the project site, the presence of freshwater wetlands and streams on the property could have attracted native peoples to the area to extract the resources they may have possessed. As such, both high and low Pre-Contact sensitivity areas were designated throughout the project site (Gray & Pape, 2019).

High Pre-Contact sensitivity areas were designated as areas:

- within 50 m (164 ft) of potential water sources, including active and seasonal streams and wetlands;
- with well-drained soils;
- with slopes of less than 8%; or
- within 50 m (164 ft) of a previously identified Pre-Contact archaeological resource, if applicable.

Low Pre-Contact sensitivity areas were designated as areas:

- greater than 50 m (164 ft) from a water source;

- with poorly drained soils;
- with slopes of greater than 8%; and
- with evidence of significant historical or modern disturbance areas.

Despite the surface water features at the project site, it is predominantly characterized by an upland landscape. Typically, local uplands along permanent water sources only yield evidence of short-term occupation by Pre-Contact period indigenous peoples. Therefore, the project site is unlikely to contain the larger Pre-Contact occupation sites as can be found closer to the shoreline of Passamaquoddy Bay (Gray & Pape, 2019).

Based on the combined environmental data (i.e., soil data) and background literature review, the project site was considered moderately- to well-suited for the identification or preservation of archaeological resources. However, no previously recorded archaeological or cultural resources were identified within the project site and no evidence of such was identified during the survey (Gray & Pape, 2019).

Documentary evidence shows at least two separate Post-Contact historical building occupations within the project site by at least the mid-nineteenth century. These two buildings were separately owned, suggesting the current property was likely combined from two separate parcels at some point. These occupations were likely related to small family agricultural lifeways and occurred after overland transportation and local road networks to the project site were established. The current structures located at the project site do not appear to relate directly to either of the historical occupations but may occupy the general location of at least one. One of the occupations at the project site was noted to be a Town Farm. Town farms, or poor houses, were institutions typically run by the town in which people of the community, who were either too poor to care for themselves or had a disability that made it hard for them to provide care for themselves, could be housed (Gray & Pape, 2019).

A historical trash dump containing early to mid-twentieth century artifacts was found inside the tree line that separates two of the pastures. Items found included domestic wares (i.e., bottles, ceramic and metallic vessels, shoe leather) and artifacts of specialized activity (i.e., oil and gas cans). Although the location of the dump indicates the artifacts are associated with occupation taking place in the same general location as the current house, the age of the items indicates that they are associated with an occupation that occurred at that location which pre-dates the construction of the current house structure (circa 1968) but post-dates any occupation that may have been associated with the Town Farm (circa 1881) (Gray & Pape, 2019).

Because the extant buildings located on the project site are not associated with any significant events or persons and have no historic integrity, the current structures are not eligible for inclusion in the NRHP. Consequently, no further work associated with these structures is recommended (Gray & Pape, 2019).

Post-Contact occupation of the region mainly follows major waterways. Therefore, the fact that the project site is approximately 1,000 ft west of Passamaquoddy Bay could have possibly made it a more attractive location for historical period occupation. As such, high Post-Contact sensitivity areas were designated as areas:

- within 200 m (656 ft) of a road or railroad or navigable stream;
- with slopes of less than 8%; or
- within 50 m (164 ft) of a previously identified Post-Contact archaeological resource, structure, or historical scatter, if applicable.

Low Post-Contact sensitivity areas were designated as areas:

- greater than 200 m (656 ft) from a water source or transportation route;
- with poorly drained soils;
- with slopes of greater than 8%; and
- evidence of significant modern disturbance.

3.5.2 Native American/Tribal Resources

The Preliminary Cultural Resources Study identified four Federally recognized Native American tribal entities that may have potential cultural interest in the project site proposed for development by the USCG. They include the following:

- Aroostook Band of Micmac;
- Houlton Band of Maliseet Indians;
- Passamaquoddy Tribe; and
- Penobscot Nation

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4.0 Environmental Consequences

Environmental impacts that would result from implementation of the Proposed Action and its alternatives are evaluated in this section. Analyses are presented by resource area, as presented in **Section 3.0**, *Affected Environment*. Analysis of potential impacts to resources typically includes:

1) identification and description of resources that could potentially be affected;
2) examination of the Proposed Action and alternatives and the potential effects the actions may have on the resource;
3) assessment of the significance of potential impacts; and
4) development of mitigation measures, special procedures, or adaptive management measures in the event that potentially significant impacts are identified.

For this analysis, potential impacts are defined as:

- Negligible – if the action would result in no noticeable impacts, beneficial or adverse, relative to existing conditions and
- Minor – if the action would result in a limited adverse impact relative to existing conditions.

Impacts were evaluated in terms of context (local or regional), type (adverse or beneficial), duration (short- or long-term), and intensity. A "significant" impact as characterized by NEPA requires consideration of both context and intensity, with both short- and long-term impacts being relevant to determining significance (40 CFR §1508.27). Through the course of analysis of the Proposed Action, none of the potential impacts are expected to be more than minimal in nature. As a result, all expected impacts were found to be non-significant. Presentation of the potential impacts of each Proposed Action design alternative (i.e., Design Alternative 1, Design Alternative 2, and Design Alternative 3) on a separate basis was not required for all resource areas due to the fact that all of these alternatives share the same geographic limits of overall construction. In instances when analyzed potential environmental impacts of multiple design alternatives are expected to be substantially similar, section headers will clearly indicate such.

4.1 Socioeconomic Environment

This section describes the potential environmental consequences to existing socioeconomic and environmental justice conditions in the project area from the Proposed Action or its alternatives.

4.1.1 Local Economy

Environmental consequences to the existing local economy resulting from the Proposed Action and its alternatives are discussed below.

4.1.1.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be minor adverse impacts on the local economy with the removal of the property from the property tax base without bringing in new residents to help offset those losses with increases in sales for local Perry merchants and the accompanying tax revenues generated from those sales. Furthermore, the lack of site development at the project site would mean that there would be no opportunities for local contractors and businesses to benefit financially during the construction period.

4.1.1.2 Design Alternatives 1, 2, and 3

The local economy currently is driven by jobs related to education, health care, social services, manufacturing, forestry, fisheries, public administration, and retail (USCB 2019a; WCCOG, 2009). Although the implementation of Design Alternative 1, 2, or 3 would have no effect on employment in these sectors, these alternatives could yield temporary beneficial effects on local businesses centered around the construction trade if local service contractors are utilized during construction and site development.

The addition of residential homes could create an increase in the local Perry population. Although the Federally owned property has been taken off the property tax base for the Town, short- and long-term economic benefits to Perry from an influx of residents may occur through spending at nearby restaurants, grocery stores, etc., by onsite construction personnel and USCG residents living in the new development. These increases in patronage to Perry businesses would thereby be expected to contribute long-term, beneficial impacts on sales tax revenue and profit margins for Perry businesses. Since Station Eastport residents are already living in the broader local area, their expenditures are already factored into the local Washington County economy. Overall, Design Alternative 1, 2, or 3 would result in negligible impacts on the local economy, with Perry-based business likely seeing the greatest benefit.

4.1.2 Housing

Environmental consequences to the existing housing market resulting from the Proposed Action and its alternatives are discussed below.

4.1.2.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would not be any impacts, beneficial or adverse, on the current regional housing market as USCG personnel would remain in their current residences in the local area.

4.1.2.2 Design Alternatives 1 and 3

Based on the 2017 housing stock data, the construction of four duplex units (Design Alternative 1) or the construction of eight single-family units (Design Alternative 3) would result in an increase of approximately 1.5% in the housing inventory for Perry. However, these houses would be designated as Federal housing units and would not contribute to the overall public housing inventory.

If Design Alternative 1 or 3 is implemented, USCG service personnel would move out of the homes they currently occupy, effectively opening up rental properties to the general public that are not currently available in the Eastport area. As such, Design Alternatives 1 and 3 would have short-term, negligible impacts on the regional housing inventory.

4.1.2.3 Design Alternative 2

Based on the 2017 housing stock data, the construction of seven single-family units (Design Alternative 2) would result in an increase of approximately 1.3% in the housing inventory for Perry. However, these houses would be designated as Federal housing units and would not contribute to the overall public housing inventory.

If Design Alternative 2 is implemented, USCG service personnel would move out of the homes they currently occupy, effectively opening up rental properties to the general public that are not currently available in the Eastport area. As such, Design Alternative 2 would have a short-term, negligible impact on the regional housing inventory.

4.1.3 Transportation

Environmental consequences to existing transportation resources resulting from the Proposed Action and its alternatives are discussed below.

4.1.3.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts on transportation as no workforce would be required to travel to and from the project area and no USCG personnel and their families would relocate to the project site.

4.1.3.2 Design Alternatives 1 and 3

Design Alternatives 1 and 3 do not involve the building, removal, or repair of any major public transportation infrastructure. In addition, the scale of either construction project is moderately small, with minimal personnel required to complete the tasks. Construction personnel and vehicles would be required to travel along arterial and local roads leading to the project site, such as US

Route 1 and Shore Road, respectively. The use of these roads by construction personnel would only be temporary (maximum of 18 months).

Long-term use of these and other local roads by USCG personnel that would be living on the property also would be minimal as a maximum of eight families would reside there for either Design Alternative 1 or 3. Based on 2017 statistics (Federal Highway Administration, 2017), the average American household completes just under nine vehicular trips per day. The resulting increase in traffic (72 trips per day, on average) on local roads capable of handling an average of 500 cars per day at a minimum (WCCOG, 2009) would constitute a negligible impact.

4.1.3.3 Design Alternative 2

Design Alternative 2 does not involve the building, removal, or repair of any major public transportation infrastructure. In addition, the construction project's scale is moderately small, with minimal personnel required to complete the tasks. Construction personnel and vehicles would be required to travel along arterial and local roads leading to the project site, such as US Route 1 and Shore Road, respectively. The use of these roads by construction personnel would only be temporary (maximum of 18 months).

Long-term use of these and other local roads by USCG personnel that would be living on the property also would be minimal as a maximum of seven families would reside there. Similar to the anticipated long-term traffic increases for Design Alternatives 1 and 3, the resulting increase in traffic on local roads (63 trips per day, on average), would constitute a negligible impact.

4.1.4 Community Service and Medical Facilities

Environmental consequences to existing community service and medical facilities resulting from the Proposed Action and its alternatives are discussed below.

4.1.4.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to community service and medical facilities as USCG personnel and their families would not relocate to the project site.

4.1.4.2 Design Alternatives 1, 2, and 3

Design Alternative 1, 2, or 3 would have no impact on the number or location of community service centers located in Perry. However, the influx of USCG personnel and their family members into the Town of Perry may increase future attendance at Perry community functions or increase membership within local and service organizations. Because the regional medical facilities available for residents in Perry are predominantly located in the cities of Calais and Eastport, the transplanting of USCG personnel to the project site from nearby areas in association with Design

Alternative 1, 2, or 3 would likely have a negligible impact on the ability of these medical facilities to attend to them or their families.

4.1.5 Fire, Rescue, and Police Services

Environmental consequences to fire, rescue, and police services resulting from the Proposed Action and its alternatives are discussed below.

4.1.5.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to fire, rescue, and police services as USCG personnel and their families would not relocate to the project site.

4.1.5.2 Design Alternatives 1 and 3

Design Alternatives 1 and 3 entail the construction of four duplex units or eight single-family units, which could result in long-term adverse impacts on the local Perry Fire Department with the addition of new structures to be covered under their jurisdiction. However, any impacts realized would be minor as the number of houses in Perry under these alternatives would only increase by 1.5%. Furthermore, the new homes would be constructed with fire suppression systems that would be expected to greatly control the intensity of any potential fires in the units, thus reducing the burden on the Perry Fire Department.

Because the Washington County Sheriff's Office and the Maine State Police provide public safety services, and the WCEMSA provides the emergency ambulance services (WCCOG, 2009) for the Town of Perry, it is unlikely that Design Alternative 1 or 3 would have any impact on these County-wide resources, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

4.1.5.3 Design Alternative 2

Design Alternative 2 entails the construction of seven single-family units, which could result in long-term adverse impacts on the local Perry Fire Department with the addition of new structures to be covered under their jurisdiction. However, any impacts realized would be minor as the number of houses in Perry under this alternative would only increase by 1.3%. The inclusion of fire suppression systems will serve to greatly control the intensity of any potential fires in the units, thus reducing the burden on the Perry Fire Department.

As is the case with Design Alternatives 1 and 3, it is unlikely that Design Alternative 2 would have any impact on the services provided by the Washington County Sherriff's Office, the Maine State Police, or the WCEMSA.

4.1.6 Recreation

Environmental consequences to existing recreational facilities or recreational lands resulting from the Proposed Action and its alternatives are discussed below.

4.1.6.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to local or regional recreational facilities as USCG personnel and their families would not relocate to the project site.

4.1.6.2 Design Alternatives 1, 2, and 3

The implementation of Design Alternative 1, 2, or 3 would have no impact on the number or location of recreational facilities or lands set aside for recreational purposes in the Town of Perry. However, the influx of USCG personnel and their family members may negligibly increase the use of such local lands and facilities in the future. Design Alternatives 1, 2, and 3 would likely have negligible impacts to County-wide resources, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

4.1.7 Schools

Environmental consequences to schools resulting from the Proposed Action and its alternatives are discussed below.

4.1.7.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts on local or regional educational facilities as USCG personnel and their families would not relocate to the project site.

4.1.7.2 Design Alternatives 1, 2, and 3

The Town of Perry has only one school, Perry Elementary School, located on US Route 1, approximately 1.9 miles from the project site (WCCOG, 2009). Although the Proposed Action would have no direct physical impact to the school, the relocation of USCG personnel and their family members to the project site in association with implementation of Design Alternative 1, 2, or 3 could cause a long-term increase in the school-age population of children in Perry, which would then result in increased attendance at the elementary school.

Perry Elementary School enrollment has reportedly fluctuated between few as 93 students in 2014 to as many as 129 students in 2006, a difference of 36 students. The most recent data (2017) shows the school as having a total of 119 students with a student/teacher ratio of 11:1. In 2016, the student/teacher ratio, however, was as high as 12.6:1 (SchoolDigger, 2019). There are currently 21 Station Eastport personnel who have a total of nine children in kindergarten through eighth grade (two currently attend Perry Elementary). Under Design Alternative 1, 2, or 3 and based on these current personnel statistics, up to eight of these families would relocate to the project site in Perry and the remaining families would continue to find their housing based on the current housing allowance system in the broader local area. Therefore, the children of Station Eastport personnel are likely to be spread out amongst multiple communities. Given the representative scenario stated, it is probable that an increase in USCG dependents would not exceed five additional students at Perry Elementary. This modest increase in the number of students would represent growth of less than 5% over the 2017 attendance numbers and not exceed the reported high of 129 students in 2006.

At the secondary level, students attend schools in Eastport or East Machias. Higher education facilities are also located in larger towns outside of Perry. Therefore, it is unlikely that Design Alternative 1, 2, or 3 would have any discernible logistical impact on institutional capacities and student/teacher ratios of county-wide educational resources, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

Although it seems likely that local public schools would be able to logistically handle the modest number of additional students that Design Alternative 1, 2, or 3 could potentially bring to the area, the educational costs associated with those students would not be supported by local tax revenues since residents of Federal property are exempt from payment of local taxes. Since there are inherent costs to supplying students with classroom materials, technological services, transportation, etc., the school systems would bear the burden of those costs for USCG students living at the project site. Design Alternative 1, 2, or 3 would have a minor negative impact on the public educational systems in the local area due to the lack of incoming tax revenue to offset the educational costs of the small number of additional students.

4.1.8 Utilities

Environmental consequences to existing utilities resulting from the Proposed Action and its alternatives are discussed below.

4.1.8.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to local or regional utility services.

4.1.8.2 Design Alternative 1

Residents of Perry obtain their water solely from natural springs or private groundwater wells. For Design Alternative 1, the project site's existing single home would be razed and four duplex units (eight units total) would be constructed along with a maintenance building. With this change, the two existing private groundwater wells would be replaced with five wells. This increase would place a greater demand on the local groundwater supply. In order to determine if the site contained a groundwater supply sufficient to accommodate the anticipated project loads, a GSS was conducted (see **Appendix D**) on three newly-drilled wells and the two existing wells. The results indicated that it is likely that individual bedrock wells, drilled to an appropriate depth, would yield an adequate water supply for either duplex or single-family homes built on the site. To eliminate high concentrations of metals typically found in Maine bedrock groundwater, these groundwater supply wells would be outfitted with treatment systems (see **Section 4.2.5**).

The supplemental groundwater evaluation conducted in 2020 confirmed that the project would have no effects on arsenic levels or groundwater supply beyond the proposed development (see **Appendix E**).

Septic systems are the only means of disposing of sanitary waste in the Town of Perry. Because Design Alternative 1 would entail converting the project site from having a single home to having four duplex units (eight units total) and a maintenance building, the existing septic system and associated leach field would be replaced with nine new septic tanks and five new leach fields. This increase in subsurface wastewater disposal at the property would elevate the amount of nitrate nitrogen in the soils over current levels. As such, a NIA was performed (see **Appendix D**) to determine if project nitrate nitrogen loads would be expected to exceed the drinking water standard of 10 milligrams per liter in groundwater at the water supply wells. Results concluded that Design Alternative 1 is expected to be feasible without causing exceedances of nitrate regulatory levels at drilled bedrock wells or on abutting properties.

If Design Alternative 1 is implemented, the amount of impervious surface at the site would increase over current levels due to the construction of four duplex units and a maintenance building, leading to increased stormwater drainage. Stormwater designs for the project would comply with applicable State and Federal laws and would likely tie into existing roadside ditches and catch basins along Shore Road. All applicable approvals would be obtained prior to construction.

An increase in the number of people living at the project site in association with Design Alternative 1 would result in an increase in the solid waste generated at the project site yet no net change in county-wide solid waste production. Solid waste would be collected at the project site and removed by USCG contractors. Since USCG personnel would be relocating from areas within Washington County where MUTS is used for solid waste collection (WCCOG, 2009), Alternative 1 would provide some fiscal relief to local municipalities through slightly decreased handling costs at the local transfer station.

Electric, telephone, and internet service providers are also regional in scope. As such, Design Alternative 1 would likely have negligible impacts on residential utility services because USCG personnel would not be moving in from another county.

Design Alternative 1 would likely have minor, long-term, adverse impacts on groundwater supplies, septic system loads, and existing local stormwater infrastructure. Design Alternative 1 is expected to have negligible impacts on electric, telephone, internet services, or solid waste, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

4.1.8.3 Design Alternative 2

For Design Alternative 2, the project site's existing single home would be razed and seven single-family units would be constructed along with a maintenance building. With this change, the two existing private groundwater wells would be replaced with eight wells. This increase would place a greater demand on the local groundwater supply. The results of the GSS (see **Appendix D**) indicated that it is likely that individual bedrock wells, drilled to an appropriate depth, would yield an adequate water supply for either duplex or single-family homes built on the site. To eliminate high concentrations of metals typically found in Maine bedrock groundwater, these groundwater supply wells would be outfitted with treatment systems (see **Section 4.2.5**).

Because Design Alternative 2 would entail converting the project site from having a single home to having seven single-family units and a maintenance building, the existing septic system and associated leach field would be replaced with eight new septic tanks and leach fields. This increase in subsurface wastewater disposal at the property would elevate the amount of nitrate nitrogen in the soils over current levels, yet slightly less than Design Alternative 1. Results of the NIA (see **Appendix D**) concluded that Design Alternative 2 is expected to be feasible without causing exceedances of nitrate regulatory levels at drilled bedrock wells or on abutting properties.

If Design Alternative 2 is implemented, the amount of impervious surface at the site would increase over current levels due to the construction of seven single-family units and a maintenance building. While this increase in impervious surface would lead to increased stormwater drainage, the increased drainage for Design Alternative 2 would be slightly less than that associated with Design Alternative 1. Stormwater designs for the project would comply with applicable State and Federal laws and would likely tie into existing roadside ditches and catch basins along Shore Road. All applicable approvals would be obtained prior to construction.

An increase in the number of people living at the project site in association with Design Alternative 2 would result in an increase in the solid waste generated at the project site yet no net change in county-wide solid waste production. Solid waste would be collected at the project site and removed by USCG contractors. Since USCG personnel would be relocating from areas within Washington County where MUTS is used for solid waste collection (WCCOG, 2009), Alternative 2 would provide some fiscal relief to local municipalities through slightly decreased handling costs at the local transfer station.

Electric, telephone, and internet service providers are also regional in scope. As such, Design Alternative 2 would likely have negligible impacts on residential utility services because the USCG personnel would not be moving in from another county.

Design Alternative 2 would likely have minor, long-term, adverse impacts on groundwater supplies, septic system loads, and existing local stormwater infrastructure. Design Alternative 2 is expected to have negligible impacts on electric, telephone, internet services, and solid waste, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

4.1.8.4 Design Alternative 3

For Design Alternative 3, the project site's existing single home would be razed and eight single-family units would be constructed along with a maintenance building. With this change, the two existing private groundwater wells would be replaced with nine wells. This increase would place a greater demand on the local groundwater supply. The results of the GSS (see **Appendix D**) indicated that it is likely that individual bedrock wells, drilled to an appropriate depth, would yield an adequate water supply for either duplex or single-family homes built on the site. To eliminate high concentrations of metals typically found in Maine bedrock groundwater, these groundwater supply wells would be outfitted with treatment systems (see **Section 4.2.5**).

Because Design Alternative 3 would entail converting the project site from having a single home to having eight single-family units and a maintenance building, the existing septic system and associated leach field would be replaced with nine new septic tanks and leach fields. This increase in subsurface wastewater disposal at the property would elevate the amount of nitrate nitrogen in the soils over current levels, at an amount similar to what would be expected with Design Alternative 1. Results of the NIA concluded (see **Appendix D**) that Design Alternative 3 is expected to be feasible without causing exceedances of nitrate regulatory levels at drilled bedrock wells or on abutting properties.

If Design Alternative 3 is implemented, the amount of impervious surface at the site would increase over current levels due to the construction of eight single-family units and a maintenance building. The increased drainage for Design Alternative 3 would be similar to that expected in association with Design Alternative 1. Stormwater designs for the project would be in compliance with applicable State and Federal laws and would likely tie into existing roadside ditches and catch basins along Shore Road. All applicable approvals would be obtained prior to construction.

An increase in the number of people living at the project site in association with Design Alternative 3 would result in an increase in the solid waste generated at the project site yet no net change in county-wide solid waste production. Solid waste would be collected at the project site and removed by USCG contractors. Since USCG personnel would be relocating from areas within Washington County where MUTS is used for solid waste collection (WCCOG, 2009), Alternative 3 would actually provide some fiscal relief to local municipalities through slightly decreased handling costs at the local transfer station.

Electric, telephone, and internet service providers are also regional in scope. As such, Design Alternative 3 would likely have negligible impacts on residential utility services because the USCG personnel would not be moving in from another county.

Design Alternative 3 would likely have minor, long-term, adverse impacts on groundwater supplies, septic system loads, and existing local stormwater infrastructure. Design Alternative 3 is expected to have negligible impacts on electric, telephone, internet services, and solid waste, as USCG Station Eastport personnel would typically be living within Washington County prior to relocation to the project site.

4.1.9 Environmental Justice

Environmental consequences to low-income, minority, and/or tribal populations resulting from the Proposed Action and its alternatives are discussed below.

4.1.9.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts on low-income, minority, and/or tribal populations.

4.1.9.2 Design Alternatives 1, 2, and 3

The poverty rate in Washington County was 25.3% in 2017, nearly double the rate for the State of Maine (13.1%) (USCB, 2019b). Minorities within Washington County, in which the project site is located, accounted for 10% of the total population between 2013 and 2017 (EPA, 2019b, 2020). This ranked higher than the State average of 6% (USEPA, 2019b), yet lower than the threshold for its characterization as a “minority population” under CEQ guidance (CEQ, 1997b).

The Passamaquoddy Pleasant Point Reservation lies between the project site and USCG Station Eastport along Route 190. Although this tribal area is even more economically depressed than Perry, recording a recent poverty rate of 40.1%, the implementation of Design Alternative 1, 2, or 3 would result in no adverse impacts on seasonal fishing and way of life for members of the Passamaquoddy tribe.

As this EA has demonstrated, the adverse human health and environmental impacts from implementation of Design Alternative 1, 2, or 3 would be negligible to minor and the addition of residential homes would create negligible impacts on local sales tax revenues. Design Alternatives 1, 2, and 3 are not expected to have high adverse human health or environmental impacts and, therefore, will not impart disproportionately high adverse human health or environmental impacts on low-income, minority, and/or tribal populations.

4.1.10 Aesthetics and Visual Resources

Environmental consequences to aesthetics and visual resources resulting from the Proposed Action and its alternatives are discussed below.

4.1.10.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impact on the aesthetics and visual resources of the project site as it is viewed from Shore Road or neighboring properties.

4.1.10.2 Design Alternative 1

Design Alternative 1 entails the demolition of the current house, barn, and outbuildings at the project site and minor excavation and grading to prepare the site for construction (see **Section 4.2.1.2**). Negligible impacts to topography at the project site are not expected to yield discernible impacts to the overall landscape of the area.

Horticultural landscaping around the new Design Alternative 1 housing would be minimal, low maintenance, and utilize native plants typically found in the surrounding community. Large portions of the parcel would be left in the current natural/undeveloped condition. As a result of the minimal removal of onsite vegetation and the limited number of plantings in disturbed areas, horticultural landscaping is anticipated to yield only minor impacts to the overall visual appearance of the area's vegetation.

The construction of eight duplex housing units associated with Design Alternative 1 would impart minor aesthetic impacts to the rural nature of the surrounding area as these homes would be on much smaller lots than homes sited on nearby properties. As a result of public comments received on the draft EA, it was determined that the duplex housing units of Design Alternative 1 would not integrate well into the rural landscape where single family homes are prevalent.

Design Alternative 1 would bring an increase in nighttime light that may interfere with the relatively dark night sky conditions currently present at and around the project site. The introduction of additional light to the nighttime environment has the potential to affect the ability for nearby residents to enjoy ongoing recreational astronomy practices. To minimize the long-term minor adverse impacts from nighttime light pollution, the USCG would ensure that outdoor lighting fixtures minimize glare and reduce sky glow. In addition, the fewest number of outdoor fixtures would be used that ensured the safety of USCG residents.

With the implementation of Design Alternative 1, overall changes to the aesthetics and visual resources of the project site as it is viewed from Shore Road or neighboring properties are expected to yield only minor impacts.

4.1.10.3 Design Alternatives 2 and 3

Design Alternatives 2 and 3 also entail the demolition of the current house, barn, and outbuildings at the project site and minor excavation and grading to prepare the site for construction of up to eight single-family homes (see **Section 4.2.1.2**). As expected with Design Alternative 1, negligible impacts are expected to topography at the project site and to overall landscape of the area.

Horticultural landscaping around the new housing associated with Design Alternatives 2 and 3 would be minimal and large portions of the parcel would be left in the current natural/undeveloped condition. As a result of the minimal removal of onsite vegetation and the limited number of plantings in disturbed areas, horticultural landscaping is anticipated to yield only minor impacts to the overall visual appearance of the area's vegetation.

The construction of up to eight single-family housing units associated with Design Alternatives 2 and 3 would impart minor aesthetic impacts to the rural nature of the surrounding area as these homes would be on much smaller lots than homes sited on nearby properties.

Design Alternatives 2 and 3 would bring an increase in nighttime light in the area at and around the project site, similar to the amount expected from Design Alternative 1. The introduction of additional light to the nighttime environment has the potential to affect the ability for nearby residents to enjoy ongoing recreational astronomy practices. To minimize the long-term minor adverse impacts from nighttime light pollution, the USCG would ensure that outdoor lighting fixtures minimize glare and reduce sky glow. In addition, the fewest number of outdoor fixtures would be used that ensured the safety of USCG residents.

With the implementation of Design Alternative 2 or 3, overall changes to the aesthetics and visual resources of the project site as it is viewed from Shore Road or neighboring properties are expected to yield only minor impacts.

4.2 PHYSICAL ENVIRONMENT

This section describes the environmental consequences to the existing physical environment in the project area resulting from the Proposed Action and its alternatives.

4.2.1 Topography

Environmental consequences to the existing regional topography resulting from the Proposed Action and its alternatives are discussed below.

4.2.1.1 No Action Alternative

The implementation of the No Action Alternative would mean that no excavation or grading at the project site would occur. As such, there would be no impacts on local or regional topography.

4.2.1.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 involve the demolition of current building structures and the construction of up to eight new homes and a maintenance building at the project site. Therefore, there would be unavoidable impacts to the local topography from implementation of either Design Alternative 1, 2, or 3, as minimal excavation and grading of up to 15.3 acres of the landscape would be required. Regional topography would not be impacted. Although these localized impacts would be long-term, they are considered negligible for this site and similar to the excavation and grading that previously occurred onsite for construction of existing structures and maintenance of pasture areas.

4.2.2 Geology and Soils

Environmental consequences to the existing regional geology and soils resulting from the Proposed Action and its alternatives are discussed below.

4.2.2.1 No Action Alternative

The implementation of the No Action Alternative would mean that no excavation or grading at the project site would occur. As such, there would be no impacts on local or regional geology or soils.

4.2.2.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 involve the excavation and grading of soils in order to prepare the project site for construction of homes and a maintenance building, installation of utilities, and installation of roads and other infrastructure. None of the proposed activities involve changing onsite soil composition. Therefore, Design Alternatives 1, 2, and 3 would have negligible, short-term, adverse impacts to the local geology and soils and no impacts on regional geology and soils.

4.2.3 Climate Change and Air Quality

Environmental consequences to the existing climate and air quality resulting from the Proposed Action and its alternatives are discussed below.

4.2.3.1 No Action Alternative

The implementation of the No Action Alternative would mean that no construction equipment would be used. As such, there would be no impacts to air quality or on conditions that impact climate change.

4.2.3.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 are not expected to have significant environmental impacts to air quality or on other conditions that influence climate change. Some temporary local impacts are expected as the proposed activities would involve the use of emission-producing vehicles and machinery during construction. However, those emissions are predicted to be below SILs for all pollutants and averaging times for which NAAQS and MAAQS have been established. In addition, all on-road and non-road vehicles and machinery would be up-to-date on their registrations and inspections, and thus compliant with current USEPA emission standards. The new housing units would be energy efficient, likely providing a net decrease in energy consumption compared to the housing units currently occupied by the USCG staff. Therefore, Design Alternatives 1, 2, and 3 would result in negligible, short-term, adverse local air quality and climate change impacts. Long-term climate change and air quality conditions would not be negatively impacted.

4.2.4 Noise

Environmental consequences to existing ambient noise resulting from the Proposed Action and its alternatives are discussed below.

4.2.4.1 No Action Alternative

The implementation of the No Action Alternative would mean that no construction equipment would be used. As such, there would be no impacts to ambient noise.

4.2.4.2 Design Alternatives 1, 2, and 3

Although the noise generated from the equipment used during construction is expected to be close to 8-hour threshold levels set for humans when measured at the source, it would be typical of the noise generated at any small construction project in the area. Construction would only occur on weekdays between the hours of 8:00 a.m. and 5:00 p.m. and is expected to require only 18 months to complete.

Wildlife that is present at the project site during construction is expected to temporarily relocate due to the physical disruption. In addition, there are no humans living at the project site and the project crew would be required to wear hearing protection in accordance with OSHA standards. The closest residence, to the northwest of the site, is greater than 200 ft from the limits of proposed clearing and grading. Bulldozers, which are typically used for site grading, produce an average sound level of 98 dB_a at the source (Berger, Neitzel, and Kladden, 2015). Using the 200 ft distance of the house from the closest point of anticipated bulldozer operation, one could reasonably expect the received sound pressure level at the exterior of the house to be approximately 70 dB_a. Noise-induced hearing loss is reported to be caused by long-term exposure to sound pressure levels higher than 75 dB_a (Basner et al., 2014), which would not be the case for any residences near the project site. Therefore, project-related noise impacts associated with

Design Alternative 1, 2, or 3 would be temporary in nature, minor, and would not jeopardize the health or welfare of the public or the wildlife in the area.

4.2.5 Hazardous Materials/Hazardous Waste

Environmental consequences associated with hazardous materials or hazardous waste resulting from the Proposed Action and its alternatives are discussed below.

4.2.5.1 No Action Alternative

The implementation of the No Action Alternative would mean that no demolition or construction would be performed and the use of mechanized equipment at the project site would not be necessary. As such, there would be no introduction of new hazardous materials or hazardous waste to the project site. However, long-term minor adverse impacts may result if the existing structures and debris piles are not removed, as leaching of contaminants into soils and groundwater could occur with the onset of dilapidation and weathering.

4.2.5.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 may entail the generation of small quantities of hazardous wastes as a result of operation of and spills from large mechanical equipment during construction. Any inadvertent releases of hazardous materials during construction would be remediated immediately in accordance with approved spill plans. Any hazardous wastes generated onsite during construction, or those documented during the HMA that would be encountered during the demolition and removal of the existing structures or waste piles (e.g., heating oil AST, ACM, LBP, benzo(a)pyrene), would be transported off-site by an outside contractor and properly recycled or disposed of in accordance with State and Federal standards. Small amounts of household hazardous waste also would likely be generated after completion of the project by USCG service members and their families, including such items as spent aerosol cans, waste cleaning solvents, batteries, and/or waste paint. Residents of military housing are not permitted to dispose of this household hazardous waste in the USCG dumpster but instead must either utilize local community special household hazardous waste collection events, local businesses that offer recycling services, or pay to have the waste disposed of by a licensed commercial waste service.

Although arsenic, iron, and manganese were elevated in groundwater samples collected from the project site, the concentrations reported were within the typical ranges for these metals as they are naturally occurring and common within Maine groundwater due to the underlying fractured bedrock geology. Housing units would be outfitted with treatment systems to mitigate any potential effects from the elevation of these metals. The high fecal coliform result was from one of the existing groundwater supply wells and was likely associated with the high turbidity related to its inactivity, shallow well depth, and/or potential compromise of the well’s casing seal. This well would be abandoned in accordance with the Maine Well Drillers and Pump Installers Rules as part of the site development.

Arsenic was also detected in soils throughout the site above residential standards. However, the detected concentrations were consistent and most likely attributable to naturally occurring arsenic.

Radon levels are anticipated to be below USEPA action levels. Radon mitigation systems will be installed in the new housing units, as necessary.

Based on the above, short-term, adverse impacts related to hazardous materials and hazardous waste are expected to be associated with the implementation of either Design Alternative 1, 2, or 3. However, best management practices (BMPs) (see **Section 2.6,** *Conservation Measures and Best Management Practices*) would be used to protect the human environment and wildlife in the area and impacts are expected to be negligible.

4.3 BIOLOGICAL RESOURCES

This section describes the environmental consequences to the existing terrestrial and aquatic biological resources in the project area that would result from the Proposed Action and its alternatives.

4.3.1 Terrestrial Environment

Environmental consequences to the existing terrestrial environment (i.e., flora and fauna) at the project site resulting from the Proposed Action and its alternatives are discussed below.

4.3.1.1 Flora

4.3.1.1.1 No Action Alternative

The implementation of the No Action Alternative would mean that no construction equipment would be used and existing vegetation would not be removed or disturbed. As such, there would be no impacts to local flora.

4.3.1.1.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 would have unavoidable, permanent, impacts to some plant species. The construction of new housing units, the associated maintenance building, road features, and utilities would require the felling of a maximum of 2.0 acres of upland trees, as well as the removal of upland herbaceous species in the pastures, all located in the eastern third of the property. The unavoidable impacts associated with Design Alternative 1, 2, or 3 would be long-term in the areas that will be covered by new impervious surfaces. In other areas, new vegetation would sprout and existing vegetation would grow into cleared areas post-construction and new non-invasive and native landscape plants would be planted along sidewalks and in common areas. Impacts associated with Design Alternative 1, 2, or 3 are expected to be minor to the 75-acre site as a whole.

4.3.1.2 Fauna

4.3.1.2.1 No Action Alternative

The implementation of the No Action Alternative would mean that no construction equipment would be used and existing wildlife would not be disturbed. As such, there would be no impacts to local fauna.

4.3.1.2.2 Design Alternatives 1, 2, and 3

Design Alternatives 1, 2, and 3 would not have significant long-term environmental impacts to inland wildlife species that may be present on or near the project site. Although local wildlife may avoid the construction area as a result of increased noise and human activity, these impacts would be minor and temporary in nature. A negligible change in terrestrial habitat would also be incurred with the felling of the trees. Overall, Design Alternative 1, 2, or 3 would be expected to yield minor short-term impacts to local fauna.

4.3.2 Water Resources and Aquatic Environment

This section describes the environmental consequences to the existing water features and aquatic habitats (i.e., surface water and wetlands) located on or near the project site resulting from the Proposed Action and its alternatives.

4.3.2.1 Surface Water

4.3.2.1.1 No Action Alternative

The implementation of the No Action Alternative would mean that no construction equipment would be used and no excavation or grading activities would be performed at the project site. As such, there would be no impacts to surface water.

4.3.2.1.2 Design Alternatives 1, 2, and 3

All construction associated with Design Alternative 1, 2, or 3 would be implemented in accordance with Maine's Erosion and Sediment Control Best Management Practices Manual for construction sites. Therefore, the use of silt fences or other sediment and erosion control devices to complete the various stages of work necessary for this project would effectively reduce the amount of soils that could potentially wash into surface water features located onsite (i.e., three streams, one man-made pond, and one vernal pool complex). Furthermore, the site soils are primarily composed of larger-grained sandy loam or gravelly sandy loam, so the limited suspension of soils that may occur despite the placement of these barrier structures should result in only a temporary, negligible, adverse impact on the turbidity of receiving water features.

4.3.2.2 Wetlands

4.3.2.2.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new septic systems would be installed at the project site. As such, there would be no impacts to wetlands.

4.3.2.2.2 Design Alternatives 1 and 3

The project has been designed to work around the extensive wetlands present at the site. The large size of the parcel has made it possible to implement either Design Alternative 1 or 3 with no direct disturbances to wetlands. However, Wetland A, located adjacent to the footprint of the proposed development, would be instrumental in naturally removing the increased nitrogen load from the secondary wastewater effluent draining from the leach fields associated with the new septic systems at the project site. Because the NIA (see **Appendix D**) assumed a 40% nitrogen removal factor, the expected impact to Wetland A associated with the construction of eight housing units and the maintenance building, as proposed for Design Alternative 1 or 3, is considered to be minor as the USEPA reported that nitrogen removal from secondary wastewater effluent in natural wetlands can range from 40% to 90%.

4.3.2.2.3 Design Alternative 2

Potential impacts to wetlands associated with the construction of seven housing units and a maintenance building would be similar, but slightly lesser, than those described for Alternatives 1 and 3 above. As such, Design Alternative 2 is expected to also have minor impacts to wetlands related to slightly increased nitrogen loads.

4.3.3 Threatened and Endangered Species

This section describes the environmental consequences to threatened and endangered species located on or near the project site resulting from the Proposed Action and its alternatives.

4.3.3.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts on threatened or endangered species.

4.3.3.2 Design Alternatives 1, 2, and 3

The northern long-eared bat is the only Federally listed animal species reported as having the potential to be located on or near the project site. Although there may be some avoidance of the construction area by this species as a result of increased noise and human activity, these impacts are not considered significant and would be temporary in nature. In addition, bats would only be using mature trees on the property as roost sites. Any work that may potentially impact bats (i.e., cutting mature trees) would be very limited in scope for this project.

The USFWS was consulted and provided a verification letter (see **Appendix G**) that concluded that the Proposed Action may affect the northern long-eared bat; however, any take that may occur as a result of the Proposed Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). The USFWS verified that the potential effects to the bat associated with the Proposed Action are covered by the Programmatic Biological Opinion, therefore satisfying and concluding the responsibilities of the USCG with regards to Design Alternatives 1, 2, and 3 under ESA Section 7(a)(2).

The dawn-land sedge, a Maine plant species of special concern has been documented within four miles of the project site, according to the Maine Natural Areas Program. While a species-specific survey was not conducted to determine the presence of this plant within the pasture fields of the project site, the dawn-land sedge was not noted during identification of vegetation for the wetland delineation. As this plant species has no current legal protection either Federally or in the State of Maine, no further identification efforts were undertaken by the USCG.

Based on the lack of known or likely presence of threatened or endangered species at or within close proximity to the project site and the results of the consultation with the USFWS on the northern long-eared bat, Design Alternatives 1, 2, and 3 are all anticipated to have negligible impacts on threatened or endangered species. Pursuant to the ESA, the Proposed Action may affect, but is not likely to adversely affect, the northern long-eared bat.

4.4 LAND USE

This section describes the environmental consequences to land use and designated Shoreland Zone resources resulting from the Proposed Action and its alternatives.

4.4.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to land use or Shoreland Zone resources.

4.4.2 Design Alternatives 1, 2, and 3

The project site is currently zoned for low-density residential development. Therefore, no land use changes would result from the implementation of Alternative 1, 2, or 3. However, the project site is located within the boundaries of the Maine Shoreland Zone, which requires structures to maintain a minimum setback distance of 75 ft from delineated wetlands. As conceptual layouts for Design Alternatives 1, 2, and 3 depict, the construction of the homes and placement of associated residential infrastructure (wells, septic systems, access roads, stormwater features, etc.) would not directly impact the wetlands that have been identified onsite or infringe upon the 75-ft setback buffer.

The USCG initiated correspondence with the staff of the Maine Coastal Program (MCP) regarding the Proposed Action's consistency with the enforceable policies of the MCP. USCG was advised that in order for a review to occur, the project design must be finalized and pertinent environmental permits and authorizations must have been acquired. The USCG consulted the *Maine Guide to Federal Consistency Review* (MCP, 2019) to determine which policies of the approved MCP were applicable to the Proposed Action and are enforceable on Federal agencies. The following enforceable policies are applicable to the Proposed Action. A brief synopsis of the USCG's preliminary analysis of each policy is included below.

- Erosion Control and Sedimentation Law (38 M.R.S. §420-C)
  Construction would be implemented in accordance with Maine's Erosion and Sediment Control Best Management Practices Manual. Therefore, the use of silt fences or other sediment and erosion control devices would effectively reduce the amount of soils that could potentially wash into surface waters. USCG will be fully consistent with this policy.
- Storm Water Management Law (38 M.R.S. §420-D)
  The total impervious area for the Proposed Action is anticipated to be below the 3 acre Maine regulatory threshold requiring review, permitting, and the use of permanent stormwater "best management practices." Temporary disturbances, however, will occur over an area greater than 1 acre in size. As such, any required temporary ground disturbance permit(s) will be secured in advance of ground disturbance. Federal stormwater requirements of Section 438 of the Energy Independence and Securities Act are more restrictive than Maine requirements and must be adhered to by all Federal agencies. USCG will be consistent to the maximum extent practicable with this policy.
- Maine Endangered Species Act (12 MRSA §§12801 to 12810 [inland species])
  The northern long-eared bat was identified as the only threatened or endangered species potentially present on or near the project site. As the bat has Federal ESA protection, the USCG consulted with the USFWS as required under the ESA. The USFWS provided a verification letter (see ***Appendix G****) that concluded that the Proposed Action may affect the northern long-eared bat, but that any take that may occur as a result of the Proposed Action is not prohibited under the ESA Section 4(d) rule adopted for the species. The Programmatic Biological Opinion issued for the 4(d) rule satisfies and concludes the responsibilities of the USCG with regard to consultation on this species. USCG will be fully consistent with this policy.*

- Mandatory Shoreland Zoning Law (38 M.R.S. §§435 to 449)

  All wetlands and streams are being successfully avoided with 75-ft setbacks maintained from proposed structures and associated residential infrastructure throughout the project site. 40,000 ft^2 minimum lot sizes will be established, wells and septic systems will be installed and constructed in accordance with Maine regulations, and limits of clearing of vegetation shall be minimized to avoid sensitive wetland and stream buffers. Due to the avoidance of impacts to all wetlands and sensitive areas, it is unlikely that the 200 ft minimum lot width/street frontage will be able to be maintained for all lots. USCG will be consistent to the maximum extent practicable with this policy.

The USCG would submit a Federal consistency package to the MCP in accordance with the CZMA once final project design is complete and necessary permits and authorizations are received. As stated above, initial evaluation of the project against the requirements of the enforceable policies of the MCP has led the USCG to a finding that any design chosen for construction will be consistent to the maximum extent practicable with the enforceable policies of the MCP. The USCG anticipates that MCP staff will concur with that finding once the Coastal Consistency determination is submitted; if substantive project modifications are required to obtain concurrence, this EA will be supplemented accordingly. Design Alternatives 1, 2, and 3 are expected to have minor adverse impacts on land use and the Maine coastal zone.

4.5 CULTURAL RESOURCES

This section describes the environmental consequences to historic resources and Native American/tribal resources on or near the project site resulting from the Proposed Action and its alternatives.

4.5.1 Historic Resources

This section describes the environmental consequences to historic resources on or near the project site resulting from the Proposed Action and its alternatives.

4.5.1.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to historic resources.

4.5.1.2 Design Alternatives 1, 2, and 3

The USCG performed a Preliminary Cultural Resources Study of the project site (see **Appendix H**) and then initiated contact with the Maine Historic Preservation Commission (MHPC) in order to determine if further investigation into prehistoric cultural resources would be required prior to implementation of the Proposed Action. The MHPC reviewed the Preliminary Cultural Resources

Study associated with the project and concluded that "*… there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13*" (see **Appendix H**). Per this finding, Design Alternatives 1, 2, and 3 are not expected to impact historic resources. Pursuant to Section 106 of the NHPA, Design Alternatives 1, 2, and 3 would have no effect on historic resources.

In accordance with MHPC direction and Federal regulations, if discovery of previously unrecorded prehistoric resources occurs during the construction phase, work would be halted immediately until further consultation with the MHPC can occur so as not to cause more than negligible impacts. In the event of this unlikely occurrence, the USCG would work collaboratively with the MHPC to determine the appropriate management actions to be completed before construction could resume.

4.5.2 Native American/Tribal Resources

This section describes the environmental consequences to Native American/tribal resources on or near the project site resulting from the Proposed Action and its alternatives.

4.5.2.1 No Action Alternative

The implementation of the No Action Alternative would mean that no new USCG housing is constructed at the project site. As such, there would be no impacts to Native American/tribal resources.

4.5.2.2 Design Alternatives 1, 2, and 3

Because no prehistoric resources that are eligible for listing in the NRHP were discovered during the preliminary investigation (see **Appendix H**), the Proposed Action is not likely to affect cultural resources that tribal entities may have particular interest in. The USCG initiated contact with the four Federally recognized Native American tribal entities in Maine on 19 July 2019 in order to determine their cultural interest in the project site, if any (see consultation letters in **Appendix H**). A response from the Houlton Band of Maliseet Indians indicated that they do not have an immediate concern with the project or project site while a response from the Passamaquoddy Tribe posed some questions to the USCG (see **Appendix H**). The Passamaquoddy's concerns included those related to the archaeological model used to perform the Preliminary Cultural Resources Study; the USCG's consideration of historic sea level in its assessment of archaeological resources; and the USCG's understanding of Passamaquoddy tribal history and community concerns in the area of the project site. The USCG provided answers to the Passamaquoddy's questions on 28 January 2020 and has, to date, not received a response from the tribe. The Aroostook Band of Micmac and the Penobscot Nation did not respond to the USCG despite follow-up requests. Accordingly, the USCG has determined that no Native American/tribal resources would be impacted by Design Alternative 1, 2, or 3. Pursuant to Section 106 of the NHPA, Design Alternatives 1, 2, and 3 would have no effect on historic resources of religious or cultural significance to Federally recognized tribes.

In accordance with MHPC direction and Federal regulations, if discovery of previously unrecorded prehistoric resources occurs during the construction phase, work would be halted immediately until further consultation with the MHPC and the appropriate tribal council can occur so as not to cause more than negligible impacts. In the event of this unlikely occurrence, the USCG would work collaboratively with the MHPC and the appropriate tribal council to determine the management actions to be completed before construction could resume.

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5.0 CUMULATIVE IMPACTS

A cumulative impact analysis must consider the potential impact on the environment that may result from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions (40 CFR §1508.7). The methodology for performing such analyses is set forth in "*Considering Cumulative Effects under the NEPA*" (CEQ, 1997a), and includes the following:

1. Identification of the geographic area in which effects of the project may be felt;

2. Assessment of the impacts that are expected from the project in that area;

3. Identification of other actions (past, present, and reasonably foreseeable) that have had, or are expected to have, impacts in the same geographic area;

4. Assessment of the impacts or expected impacts from these other actions; and

5. Assessment of the overall impact that can be expected if the individual impacts are allowed to accumulate.

The geographic area for the assessment of cumulative impacts associated with the Proposed Action was largely identified as the James Brook-Frontal Passamaquoddy Bay sub-watershed. The sub-watershed includes the Towns of Perry and Robbinston, both of which are located within Washington County.

Significant changes were made to the terrestrial environment in the past through the construction of the residential dwelling and associated structures currently occupying the project site and the historic use of the land surface as pastures. The Proposed Action would not induce land use change or other external pressure to the project site.

A review of the *Town of Perry, Maine Comprehensive Plan* (WCCOG, 2009) did not reveal any planned activities for the municipality that would significantly increase the potential environmental impacts expected from the Proposed Action. The Town of Perry laid down future plans in 2009 to add shoulders, turn-outs, and passing lanes to increase mobility along the US Route 1 corridor (Main Street), while also regulating access to minimize conflicts and ensure the safety of freight and commuters. The plans also included a recommendation for two bridge replacements, one a steel culvert over Upper Sipps Brook and the other a traditional bridge over Pottle Brook, both on US Route 1. The *Town of Robbinston Comprehensive Plan* was not available for review.

A review of *A Regional Plan for the Washington County Unorganized Territories* (East, 2017) did not reveal any planned activities for the County that would significantly increase the potential environmental impacts from the Proposed Action. The Regional Plan presents a number of possible capital investment projects aimed at the improvement of utility, transportation, and recreational infrastructure.

Although the Proposed Action involves the construction of a housing development and may result in some minor adverse environmental impacts on and immediately surrounding the project site, the cumulative adverse environmental impacts from construction and operation of the Proposed Action would be negligible when considered with other past, present, and reasonably foreseeable future projects in the area.

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6.0 SUMMARY OF FINDINGS

A summary of environmental impacts anticipated to result from the implementation of the Proposed Action is provided in this section.

6.1 SOCIOECONOMIC ENVIRONMENT

Implementation of the Proposed Action would have negligible, adverse, long-term impacts on the socioeconomic environment with regard to transportation; community service facilities; recreational facilities; and low-income, minority, and tribal populations through the addition of new residents to the Town of Perry.

Minor, long-term, adverse impacts to the local volunteer fire department could result from the conversion of the property from a single home to one that contains up to eight housing units within their jurisdiction. Minor, long-term, adverse impacts are likely on groundwater supplies, septic system loads, and existing local stormwater infrastructure. Finally, minor, long-term adverse impacts to schools are expected due to the potential increase in attendance at local public schools without the addition of property tax revenues to offset the costs of educating those students.

Some socioeconomic parameters could benefit from implementation of the Proposed Action. For example, the local job market may experience a short-term boost through the hiring of local construction service contractors. Negligible short- and long-term economic benefits may also occur through spending at nearby restaurants and retail stores by onsite construction personnel and USCG residents living in the new development. The transfer of USCG service personnel out of their current housing units into the new development at the project site would also result in short-term impacts on the availability of housing to the general public within the area surrounding Eastport.

6.2 PHYSICAL RESOURCES

The Proposed Action would have short-term, adverse impacts on physical resources such as geology and soils, climate change, and air quality from the use of construction equipment. However, with implementation of Federal guidance and related BMPs, impacts to these resources from the Proposed Action would be negligible.

Unavoidable, long-term impacts to the local topography would also occur as excavation and grading of up to 15.3 acres of the landscape would be required. However, localized impacts to topography are considered to be negligible for the project site as minimal excavation and grading would be required.

Small amounts of hazardous material/hazardous waste have been recorded at the project site and are expected to be generated during construction and while USCG personnel and their families live in the development. Any hazardous material/hazardous waste generated during and after project implementation would be transported off-site and discarded in accordance with State and Federal standards. BMPs also would be used to minimize hazardous waste generation. Therefore, negligible, short-term, adverse impacts are expected.

Wildlife that is present on or near the project site during construction is expected to temporarily relocate due to the physical disruption from construction noise. The noise generated during construction by heavy equipment would not be great enough to impart noise-induced hearing loss to residents of abutting properties. Generally speaking, the noise would be typical of any small construction project and the construction phase is expected to require only 18 months to complete. Therefore, any adverse impact on humans and wildlife in the area from construction generated noise would be minor and temporary in nature.

6.3 BIOLOGICAL RESOURCES

Construction activities planned for the site would result in the permanent removal of some upland plant species. However, the adverse impacts from vegetation removal would be minor for the 75-acre site that has historically been felled, as new vegetation would sprout and existing vegetation would grow into cleared areas post-construction. The Proposed Action may also cause the temporary displacement of local wildlife that choose to avoid the area during the construction phase. These impacts would be minor as the noise and activity would be typical of any small construction project.

Surface water bodies in the eastern portion of the project site would potentially experience short-term, negligible, adverse impacts through the degradation of water quality during construction. However, with adherence to pertinent Federal and State stormwater and construction requirements and related BMPs, impacts to these resources from the Proposed Action would be negligible. Although the Proposed Action has been designed to work around the extensive wetlands present at the project site, the increased nitrogen load from the secondary wastewater effluent resulting from the use of new onsite septic systems would have minor, long-term, adverse impacts on Wetland A, as it will be instrumental in naturally removing nitrogen draining from the leach fields.

6.4 LAND USE

Minor, adverse impacts to the Maine Coastal Zone would be incurred, as a result of the new home construction associated with the Proposed Action. The USCG would submit a Federal consistency package to the MCP once final project design is complete and pertinent environmental permits and authorizations are acquired. Once the final project design is complete, the USCG anticipates that the MCP will concur that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the MCP and is satisfied that all required State permits and authorizations are in place.

6.5 CULTURAL RESOURCES

There were no historic or Native American/tribal resources discovered on the property during the preliminary investigation that would be eligible for listing in the NRHP or of interest to Federally recognized tribes and no further work is required by the MHPC (see **Appendix H**). As such, no impacts to cultural resources associated with the Proposed Action are anticipated. However, in the unlikely event that previously unrecorded cultural resources are discovered during the construction phase, work would be halted immediately until regional tribal councils and/or the MHPC could be consulted. In consultation with tribes and/or the MHPC, the USCG would work collaboratively to determine the appropriate management actions to be completed before construction could resume.

Table 6-1 presents the summary of potential impacts and regulatory conclusions of the Proposed Action and its alternatives based on the environmental analyses in this EA.

Table 6-1. Summary of Potential Impacts to Affected Environmental Resources

Environmental Resources (with Subcategory as Identified)		Proposed Impacts (Classification and Duration)			
		Alternative 1 (Four Duplex Units)	Alternative 2 (Seven Single-Family Units)	Alternative 3 (Eight Single-Family Units)	No Action Alternative
Socioeconomic Environment	Local Economy	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	Minor; Long-term
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts
	Housing	Negligible; Short-term	Negligible; Short-term	Negligible; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Transportation	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Community Service/Medical Facilities	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Fire, Rescue, and Police Services	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts

		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Recreational Facilities	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Schools	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Utilities	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Environmental Justice	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
		EO 12898: No Disproportio-nate Impacts	EO 12898: No Disproportio-nate Impacts	EO 12898: No Disproportio-nate Impacts	EO 12898: No Impacts
	Aesthetics and Visual Resources	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
Physical Resources	Topography	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Geology and Soils	Negligible; Short-term	Negligible; Short-term	Negligible; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Climate Change and Air Quality	Negligible; Short-term	Negligible; Short-term	Negligible; Short-term	No Impacts

		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Noise	Minor; Short-term	Minor; Short-term	Minor; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Hazardous Material/Hazardous Waste	Negligible; Long-term	Negligible; Long-term	Negligible; Long-term	Minor; Long-term
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts
Biological Resources	Flora	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Fauna	Minor; Short-term	Minor; Short-term	Minor; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Surface Water	Negligible; Short-term	Negligible; Short-term	Negligible; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Wetlands	Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
	Threatened and Endangered Species	Negligible; Short-term	Negligible; Short-term	Negligible; Short-term	No Impacts
		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
		ESA: May Affect, Not Likely to Adversely Affect	ESA: May Affect, Not Likely to Adversely Affect	ESA: May Affect, Not Likely to Adversely Affect	ESA: No Effect
Land Use		Minor; Long-term	Minor; Long-term	Minor; Long-term	No Impacts

		NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Significant Impacts	NEPA: No Impacts
		CZMA: Consistent to the Maximum Extent Practicable	CZMA: Consistent to the Maximum Extent Practicable	CZMA: Consistent to the Maximum Extent Practicable	CZMA: No Impacts
Cultural Resources	Historic Resources	No Effect	No Effect	No Effect	No Impacts
		NEPA: No Impacts	NEPA: No Impacts	NEPA: No Impacts	NEPA: No Impacts
		NHPA: No Effect	NHPA: No Effect	NHPA: No Effect	NHPA: No Effect
	Native American/Tribal Resources	No Effect	No Effect	No Effect	No Impacts
		NEPA: No Impacts	NEPA: No Impacts	NEPA: No Impacts	NEPA: No Impacts
		NHPA: No Effect	NHPA: No Effect	NHPA: No Effect	NHPA: No Effect

Key:

Negligible – if the action would result in no noticeable impacts, beneficial or adverse, relative to existing conditions.

Minor – if the action would result in a limited adverse impact relative to existing conditions.

In conclusion, the USCG found that no significant impacts would occur from implementation of any Eastport Housing Project design alternative. Therefore, further evaluation of the impacts of the Proposed Action in the form of an EIS is not warranted.

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8.0 LIST OF PREPARERS

This report was prepared for, and under the direction of, the USCG Facilities Design and Construction Center, by Amec Foster Wheeler/HDR Joint Venture. Members of the professional staff are listed below:

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Aaron Goldschmidt – Amec Foster Wheeler

Doug McFarling – Amec Foster Wheeler

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APPENDIX A

Public Notice Documentation

Legals/Notices

Notice

Washington County Community College is seeking Request for Quotation in the following areas:

• Flooring

Deadline for all submissions is 6/07/2019 at 9 a.m.

Please contact Richard Ramsey at 454-1067 or visit https://www.wccc.me.edu/about-wccc/news-info/rfp/ For more information

CA000006309

Notice

Washington County Community College is seeking Request for Quotation in the following areas:

• Student Counseling Services

Deadline for all submissions is 7/28/2019 at 9 a.m.

Please contact Melvin D. Adams III, Ed.D. at 454-1032 or visit https://www.wccc.me.edu/about-wccc/news-info/rfp/ For more information

CA000006333

DECH Births

To Jessica Robinson and Jesse Bagley of Stueben, Maine, a boy Ryder Anthony Bagley born on May 28, 2019 weighing 5 lbs., 13 oz., 20.5 inches long.

To Leighann Preston of Roque Bluffs, Maine, a boy Asher Preston born on May 26, 2019 weighing 7 lbs., 12 oz., 21 inches long.

To Thomasina Soucy of Yarmouth, Nova Scotia and William Lola of Princeton, Maine, a girl Remi Alice-Marie Lola born on June 2, 2019 weighing 7 lbs. 12 ounces 21 inches long.

STATE OF MAINE
YORK, ss.

DISTRICT COURT
SPRINGVALE
Docket Number RE-19-31

HABITAT FOR HUMANITY
YORK COUNTY

Plaintiff

v.

ERIN D. FORTUNE and
NICOLAI J. FORTUNE

Defendants

ORDER FOR SERVICE
BY ALTERNATIVE MEANS
(M.R. Civ. P. 4(g))

This Court has reviewed the Motion of the Plaintiff for Service by Alternative Means. This type of action is for declaratory judgment to quiet title on the foreclosure of a municipal tax lien. The attorney for the Plaintiff is Alan E. Shepard, Shepard & Read, 93 Main St., Kennebunk, Maine. Property of the Defendant may be affected which includes a real estate interest in property located at 5 Allen Street in Sanford, Maine.

The Moving Party has demonstrated that the addressed of the party is unknown and cannot be ascertained by reasonable diligence and requested method of service is reasonably calculated to provide actual notice of the pendency of the action to the party to be served and is the most practical manner to effecting notice of the suit.

It is **ORDERED** that Service can be made upon the other party by publishing a copy of this order one a week for three consecutive weeks in The Calais Advertiser, a newspaper of general circulation in Calais, Maine.

It is **FURTHER ORDERED** that the **party being served** appear and serve an answer to the complaint to the **serving party's** attorney at the address listed above within forty-one (41) days after the publication in the newspaper. **Failure to serve an answer will cause judgment by default to be entered, granting relief sought in the motion or complaint.**

Dated: May 30, 2019 Daniel Driscoll
District Court Judge

Entered on the docket on: 5/30/19
Copies provided to the parties in hand ☐ mailed by clerk ☑
Clerk initials: MDH

CA000006316

NOTICE OF SCOPING

The U.S. Coast Guard (USCG) is requesting public input on the scope of environmental issues and alternatives to be addressed in the:

Environmental Assessment
Eastport Housing Project
U.S. Coast Guard Station (STA) Eastport
Perry, Maine

The USCG has identified a requirement to provide family housing for USCG personnel assigned to USCG STA Eastport. For this purpose, a 75-acre site with an existing single-family house was recently acquired at 576 Shore Rd, Perry, Maine 04667 (County of Washington). The USCG would like to develop this property with one of the following scenarios:

- Demolish the existing house and associated infrastructure and construct up to six (6) duplex housing units (12 units total) consisting of four (4) 3-bedroom units (8 units total) and two (2) 4-bedroom units (4 units total). Additionally, provide a 5,000 square foot maintenance building and a 2,000 square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community.
- Demolish the existing house and associated existing infrastructure and construct up to twelve (12) single family units consisting of eight (8) 3-bedroom units and four (4) 4-bedroom units. Provide a 5,000 square foot maintenance building and a 2,000 square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community.

Environmental Review and Analysis

The Environmental Assessment (EA) will describe the environmental resources potentially affected by the project, and will assess the direct, cumulative impacts on those resources from construction of the housing project. Mitigation measures to minimize or eliminate any impacts will be identified. The EA will evaluate potential impacts that may result from the project related to such elements as:

- Socioeconomic Development
- Physical Environment
- Natural Environment
- Cultural Resources

Alternatives

In the NEPA process, the USCG is required to consider a reasonable range of alternatives to the proposed project. The EA considers alternatives that could accomplish the USCG's purpose and need and reduce environmental effects. Reasonable alternatives are those that are feasible to implement based on environmental, technical, and economic factors.

A reasonable alternative to the project is to take no action and therefore a No Action Alternative will be assessed in the EA. The need for project redesign or a project alternative will be determined during the environmental review.

Scoping

Public comments on the NEPA process, proposed action and alternatives, and environmental issues will be accepted until June 23, 2019. Comments will only be accepted in writing. Please send comments to Christy Benes, Wood E&IS, 285 Davidson Avenue, Somerset, NJ 08873.

CA000006348

Town News

Alexander/Crawford

Cassie Oakes

The Alexander Town Assessors wanted me to let town folks know that they meet monthly at the Alexander Town Office and their next meeting is scheduled for September 14th at 9 a.m.

Has anyone noticed the no trespassing signs, no pets and cable across the driveway at the Alexander Elementary School? This was implemented by the Alexander School Board. But the Board would like the residents of the town to know this is not to keep them out. They are still free to enter the school grounds as always and use the playground and ride their bikes, they are just asked to replace the cable when going through.

It is with great sadness that I report on the passing of Fred Wallace of Crawford Maine. Fred also lived for many years in Alexander, and I extend my deepest sympathies to the family. Fred was an important part of the Alexander Community serving as a selectman and on other boards in town, plowing driveways and the roads, and having the bus runs. Fred was my bus driver for years and always got us to school safely and was very kind. He spent quite a bit of time at our store and was a great friend to us and to many as was proved by the amount of folks at his send off. The road by the cemetery was lined with cars and Fred and the family took one last ride together to the cemetery on the school bus. There had to be over 100 folks there. The crowd then headed over to the Church of the Open Bible for refreshments and storytelling.

Pauline DeWald called to let me know how much she enjoys *The Calais Advertiser*, especially the local columns and History News from John Dudley. But recently there was an error, when it was said that the three sisters Mildred, Louise and Pauline visited Aunt Etta, when in reality it was just Mildred and Louise. Pauline was only 4 years old and stayed home.

Explore Maine in the newspaper. Thanks, Pauline, for the clarification.

The Saint Croix Courier of August 6th had within its "120 Year Ago" column a news feature about a nickel mine outside of St. Stephen in 1899. At that same time the same miner who was digging in St. Stephen was here in Alexander. A high-grade deposit of nickel had been located on lot 68 a couple hundred yards south of the Airline. In St. Stephen he had a blacksmith shop on site and a 32-feet in diameter circular building for the horse to walk circles hoisting the ore up the dug shaft. John Dudley expects the miner used the same process here to get the ore to the surface.

Neither deposit was big enough to justify mining. Fifty years later a Canadian company tried drilling to find a connection between the two deposits. Many local men found employment in this operation, but the drilling outfit found nothing worth mining at the market rates at the time. The shaft can still be seen here, but permission from the owner before searching.

The Alexander Grange had their weekly Community Market and the Fresh Veggies were there again from Pat Cormier's Homestead, beautiful carrots, beet and beet green, onion, zucchini and cucumbers. Coops Blueberries were there also, but they didn't last long and the sign had to come down early. For supper was Bear Stew and yes, I said bear, also Chicken Enchilada Chowder, corn bread and several sweet things to top off the day. Other vendors were also there selling their wares. The market will continue on Fridays through September, but the Yard Sale will be ending on August 23rd, come and make the Grange an offer. Doors Open at 4 p.m.

The Alexander Grange will be hosting the Washington County Pomona Grange on Tuesday, September 3rd with a Cookout starting at 6 p.m. and a meeting to follow at 7. During this meeting the 5th Degree will be given. Any 4th Degree Grange member is eligible to take the degree and are invited to attend.

The Breakneck Mountain ATV Club will be having their monthly meeting on Wednesday, August 25th at 7 p.m. at the Club House on the Cooper Road in Alexander. All are welcome.

Upcoming birthday wishes for the upcoming week go out to Bronwyn Foley, Gary Sabaldea, Todd Bassett, Michelle Brown, Mike McArthur, Emily Clark, Tim Jundt, Lesliann Howard Barnard, Stephanie Donovan, Jane Mariza, Jordyn Whitehead, Pat Demmons, Carl Perkins and John Hatt.

Upcoming anniversary wishes go to Elwin and Genie Daley, Brian and Susan Giles, Troy and Tracey Wallace and Dave and Sherry Sivret. I wish all couples many more years of wedded bliss!

Good thoughts this week go to Judy Lincoln Murray, Carleton Brown, Pike Seavey, Avis McIntyre, Rusty Kinney, Eva Rose Fairbrother, and David Tozier. And don't forget about those wonderful Caretakers who give so unselfishly to their loved ones.

I had a wonderful week away at Camp Capella. I made lots of new friends and reconnected with old ones. We sang fun songs, had a campfire and s'mores, went boating, fishing, swimming, did crafts and had dance parties. It ended with an awards ceremony and I was voted as Camp Comedian. I got home to a busy weekend. I attended Fred Wallace's funeral, helped my parents celebrate their 45th Wedding Anniversary, ran errands, attended church and got my weekend ice cream cone. I tried a new flavor, it was good, but I think I'll go back to my standard chocolate. By the time I got home Carlos Jr. had already headed back to Biddeford to his mom's house and to prepare for the new school year. His last week in Alexander was a whirl wind. He got a very new and stylish haircut at Thumos Barber Shop in Calais; I didn't see it in person, but it looks great in pictures. He went on several day trips with Grandma to the beach and out to lunch. Packing was on the agenda one day as he decided what to take, because he didn't get to bring all his stuff from Florida. He did take his bike which he was very excited about as there are kids in his new neighborhood who love to ride.

If you have news: picfan@hotmail.com, 454-2344 and you can contact me won my Facebook page Cassie Oakes. Mail me at 1328 Airline Road, Alexander, ME 04694.

Legals/Notices

PUBLIC NOTICE

The U.S. Coast Guard (USCG) is requesting public input on the environmental issues and alternatives addressed in the:

Environmental Assessment
Eastport Housing Project
U.S. Coast Guard Station (STA) Eastport, Perry, Maine

The USCG has identified a requirement to provide family housing for USCG personnel assigned to USCG Station Eastport. For this purpose, a 75-acre site with an existing single-family house was recently acquired at 576 Shore Rd., Perry, Maine 04667 (County of Washington). The USCG would like to develop this property beginning in late spring/early summer of 2020 with one of the following design alternatives:

Demolish the existing house and associated infrastructure and construct four duplex housing units (eight units total) consisting of three 3-bedroom units (six units total) and one 4-bedroom (two units total). Additionally, provide a 5,000 square foot maintenance building and a 2,000 square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community; or

Demolish the existing house and associated infrastructure and construct seven single-family units consisting of six 3-bedroom units and one 4-bedroom unit. Additionally, provide a 5,000 square foot maintenance building and a 2,000 square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community.

The construction phase is expected to require a maximum of 18 months to complete.

Environmental Review and Analysis

An Environmental Assessment (EA) was developed for the project describing the environmental resources potentially affected by the project and assessing the direct, indirect, or cumulative impacts on those resources from construction of the housing project. Mitigation measures to minimize or eliminate any impacts were identified.

The EA concluded that no significant or otherwise substantial environmental impacts would result from implementation of the Proposed Action at the project site. Therefore, a preliminary Finding of No Significant Impacts (FONSI) was issued and included in the EA.

Public Comment

This EA is subject to a 30-day public review period before finalization. The complete document is available for review at the following locations:

1) Pembroke Library Association, 221 Old County Road, Pembroke, ME 04666-4507
2) Peavey Memorial Library, 26 Water Street, Eastport, ME 04631-1599
3) Perry Maine Municipal Clerks Office, 898 U.S. Route 1, Perry, Maine 04667

Public comments on the Proposed Action and alternatives, environmental issues, and FONSI will be accepted until September 23, 2019. Comments will only be accepted in writing. Please send comments to Christy Benes, Wood E&IS, 285 Davidson Avenue, Somerset, NJ 08873.

The Calais Advertiser

23 Church Street
P.O. Box 660
Calais, Maine 04619
(207) 454-3561

SIZE OF INSERTION: 5 col. x 7.5

AMOUNT DUE: $399.38 (PREPAID)
(INCLUDING ALL FEES)

ACCOUNT#:

WOOD ENVIRONMENT &
INFRASTRUCTURE SOLUTIONS, INC.

AFFIDAVIT OF PUBLICATION
STATE OF MAINE)SS:
COUNTY OF WASHINGTON)

BETH MCCRAY
Being duly sworn, deposes and says that she is
ADVERTISING SALES REPRESENTATIVE

Of The Calais Advertiser Corporation, publishers of The Calais Advertiser, a newspaper printed in St. Stephen, Canada, having a general circulation in Washington County, and that the attached notice was published in said newspaper 1 (ONE) times, on the following dates

AUGUST 22, 2019

Beth McCray
Signature

Subscribed and sworn to before me this 22 day of Aug, 20 19.

Stacie M Hatton
Notary Public-Print Name

Stacie M Hatton
Notary Public-Signature
State of Maine
My commission expires on

Stacie M. Hatton
Notary Public, State of Maine
My Commission Expires November 2, 2025

PUBLIC NOTICE

The U.S. Coast Guard (USCG) is requesting public input on the environmental issues and alternatives addressed in the:

Environmental Assessment

Eastport Housing Project

U.S. Coast Guard Station (STA) Eastport

Perry, Maine

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3) Perry Maine Municipal Clerk's Office
898 U.S. Route 1
Perry, Maine 04667

Public comments on the proposed action and alternatives, environmental issues and FONSI will be accepted until September 23, 2019. Comments will only be accepted in writing. Please send comments to Christy Benes, Wood E&IS, 285 Davidson Avenue, Suite 405, Somerset, NJ 08873.

CALAIS MIDDLE/HIGH SCHOOL

Secondary Mathematics Teacher

The Calais School Committee is accepting applications for the position of secondary mathematics teacher. Maine state certification required.

Applications are available at:

Office of the Superintendent of Schools
34 Blue Devil Hill
Calais, ME 04619
(207) 454-2296
Email: fayedonovan@calaisschools.org

Position will be filled when suitable candidate is found.

EOE

CITY OF EASTPORT

Notice of Request for Listing Proposals

1 Arnold Street, Eastport, Maine

The City of Eastport is soliciting listing proposals from licensed Maine real estate agents to list for sale city-owned property located at 1 Arnold Street in Eastport. The property is commonly referred to as the former Guilford mill. The property consists of 8 acres of industrial zoned real estate and an approximately 65,000-square-foot industrial building with recent improvements. Interested licensed real estate agents should include in the proposal the suggested list price; the commission rate; a marketing plan; and the required length of contract. For further details, please contact Eastport City Manager Ross Argir at (207) 853-2300 or rargir@eastport-me.gov. Complete proposals are due to City Manager Ross Argir by September 6, 2019 at 1:30 p.m.

The city reserves the right to accept or reject any or all proposals.

EASTPORT HEALTH CARE INC.

30 Boynton Street
Eastport, ME 04631

Behavioral Health Patient Services Representative

Calais and Eastport Office

People are the key to success of our health center and we rely on our staff to make our patient-focused vision come to life. Eastport Health Care aspires to meet a full spectrum of health needs in rural Maine with innovative, affordable treatment. Leading through listening, learning through partnership and serving through collaboration make us agents of change for better health outcomes in Washington County.

If you are interested in joining our team, we would love to hear from you!

*** Great Work Environment * Comprehensive Benefits * Market Competitive Salary**

Job requirements:

- Possess excellent organizational skills and the ability to function independently within a multi-disciplinary environment.
- Excellent communication and people skills.
- Proficient computer skills. Electronic medical record experience a plus.
- Travel is required.
- Prior experience in the health field desired but not essential.

Please submit cover letter and resume to:

Eastport Health Care Inc.
Attn: Roxy Woodworth, H.R. Manager
30 Boynton St.
Eastport, ME 04631
rwoodworth@eastporthealth.org

Eastport Health Care is an equal opportunity employer and provider.

CRMA – CNA / PSS

Maine Veterans' Homes Machias facility is seeking the following positions in the nursing department:

- Temporary part-time 24-hour Certified Residential Medication Aide (CRMA) for the 3:00 p.m. to 11:00 p.m. shift (every other weekend).
- Part-time 16-hour CNA for the 11:00 p.m. to 7:00 a.m. shift (every other weekend).
- Part-time 20-hour CNA for two 12-hour day shifts (7:00 a.m. to 7:00 p.m.) every other weekend plus one 3:00 p.m. to 11:00 p.m. shift per week.
- Part-time 20-hour CNA for two 12-hour day shifts (7:00 a.m. to 7:00 p.m.) every other weekend plus two 4:00 p.m. to 8:00 p.m. shifts per week.
- If interested in more than 16-20 hours, we may be able to do a combination of shifts.

The primary purpose of the CRMA is to assist in the administering of medications to residents as ordered by the attending physician under the direction of a registered nurse and to work as a direct care staff as assigned. The administration of medications shall be in accordance with established policies, procedures and guidelines. The successful candidates must have experience with dementia. A certification for CRMA, provided by a state authorized education curriculum, is required. Applicants must have a minimum of a RCS1 or PSS. CNAs will also be considered.

If you would like to have a job that you can truly be proud of, Maine Veterans' Homes is the place for you. For immediate consideration, you may mail / e-mail a cover letter and resumé to:

MAINE VETERANS' HOME – MACHIAS
Residential Care Director
32 Veterans Way, Machias, ME 04654
(207) 255-2407 or 1-877-866-4669
slavigne@mainevets.org

Equal Opportunity Employer

Maine Veterans' Homes is a public, not for profit organization committed to providing skilled nursing and rehabilitation, long-term residential and dementia care to veterans, their spouses, widows, widowers, and gold star parents.

MAINE VETERANS' HOMES
caring for those who served

TIDES CLASSIFIED ADS

Classified ads are $2.00 for 10 words or fewer; $4.00 for 11 to 20 words, and 10 cents for each additional word. Classifieds are payable in advance. Display ads are $7.00 per column inch. Contact our ad representative for special rates.

Write to: *The Quoddy Tides*, P.O. Box 213, 123 Water St., Eastport, Me. 04631 Tel. (207) 853-4806 . Fax 853-4095 E-mail: qtides@midmaine.com

Boats and Marine Equipment For Sale

WHY WAIT FOR BLACK FRIDAY? Moose Island Marine is having 50% off all clearance only items from November 1 to 30. Something for everyone. Grundens, LaCrosse, Stearns. While supplies last. Mention this ad and get 10% off anything in store, including clothing, boots, Tohatsu outboards, welded aluminum skiffs and galvanized trailers. At the head of the breakwater, Eastport. 853-6058. 3x

Found

PAIR OF READING GLASSES on the corner of Elm and Washington streets in Eastport on September 30. Claim at *The Quoddy Tides* office. Call 853-4806. nc

PRATT KEY RING with car key and 2 other keys. Found in Eastport Post Office parking lot. Identify and pick up at *The Quoddy Tides* office. nc

Help Wanted

FULL-TIME MARINE RETAIL POSITION – experience with boats, bolts and parts preferred. Please send both your resume and references to <mooseislandmarine@maine.rr.com>. 1x

SEVERAL SMALL JOBS – carpentry skills required. Dependability and good nature appreciated. 853-4578. 1a

HELP WANTED – Young person wanted to help around the house and outside, 4-5 hours a week. Call Rich Miller at 853-4637. 2x

STUMP GRINDING

Call 726-4748

Miscellaneous For Sale

4X4 MESH FLOOR-TILT UTILITY TRAILER: 2018, never used, $450. Call the Town of Whiting office at 733-2027, Monday, Wednesday and Friday. 1x

BOOKS AND BEANS ORGANIC PANTRY, Route. 86, Dennysville. Open every Saturday and Sunday from 12 noon until dark. Please contact <labradorblue@yahoo.com>. 5x

Summer Rentals

Studio/2BR/3BR

Modern large open lofts

fullfathomfivegallery.com

207-214-6818

Help Wanted In Assisted Living Facility

12-14 hour shifts available for CMRAs in Calais area.

Call 207-952-2061 or 207-454-8961.

Real Estate For Sale

EASTPORT – Price reduction. Now $26,500 for a private, peaceful lot of 1.12 acres in Eastport proper at 66 Clark St. Surveyed, soil-tested, public water, power at road. Broker Samra Kuseybi, The Christopher Group, 207-214-7401. tf

COLUMBIA FALLS – 100-plus acres overlooking Pleasant River and the ocean. Approx. 25 acres in improved blueberry fields. Over $100,000 of irrigation installed. Includes nearly new John Deere diesel pump with less than 50 hours. Pump alone cost $15,000. This property would be ideal for a gentleman farmer or construction of a large family estate. Has road access and electricity available at roadside. Also blueberry sod would be ideal for landscaping. Could also be high end or middle housing development. Asking $165,000. Come take a look. Call 207-263-6757 for more info. tf

MEDDYBEMPS – 6 +/- acres on Dennys River. 24'x32' full foundation, well, septic and electricity. Small pond. Across from lake. $30,000. Call 255-6257. tf

PERRY – Two-story log home on Boyden Lake. 20 Roys Way South. Pictures are on <www.zillow.com/perry-me>. 207-726-5513 for more information. 1x

THE QUODDY TIDES

Pembroke Correspondent

The Quoddy Tides has a position opening for a Pembroke correspondent/reporter.

Contact Edward French at qtides@midmaine.com or 853-2366.

EASTPORT HEALTH CARE INC.

30 Boynton Street, Eastport

Snow Removal Bids

Eastport Health Care Inc. is accepting bids for snow removal from our Boynton Street and Middle Street parking lots.

Please contact Ed Farrell at 207-835-2929 or efarrell@eastporthealth.org for more information.

MAINE INDIAN EDUCATION

Beatrice Rafferty School

Special Education Paraprofessional III - Intensive Needs Provider

Successful candidates must be appropriately-certified (023) and submit to substance abuse testing as required by the school committee. Salary and benefits are regionally-competitive including full-family medical insurance.

Submit an application to:

Superintendent of Schools
Maine Indian Education
39A Union Street
Calais, ME 04619
207-454-2126

Contact: Wanda.Barlow@bie.edu

Accepting applications until Friday, November 1, 2019 at noon.

MIE paraprofessional application available at www.mie.bie.edu.

Native American Preference/Equal Opportunity Employer

TOWN OF LUBEC

Invitation to Bid

The Town of Lubec is receiving bids from contractors to furnish materials and install one (1) septic system in the town of Lubec, Washington County. A portion of the work will be funded by the DEP Small Community Grant Program and the work will be subject to special requirements of the DEP. Bidding documents may be obtained at the Lubec Town Office, 40 School Street, Lubec, Maine 04652, during regular office hours Monday–Friday 8 a.m.–4 p.m. Inspection of project site prior to bidding is strongly recommended. Sealed bids marked "Town of Lubec Septic System Bid" must be received at the Lubec Town Office by 4 p.m. November 13, 2019. The bids will be opened at the Lubec Select Board meeting November 13, 2019 at 6 p.m., at which they will be read aloud and recorded. The Lubec Select Board reserves the right to accept or reject any or all bids. For more information please contact Renée Gray, Town Administrator, Town of Lubec, at 733-2341.

EASTPORT HEALTH CARE INC.

30 Boynton Street
Eastport, ME 04631

Per Diem Certified Medical Assistant

Eastport Medical Department

People are the key to success of our health center and we rely on our staff to make our patient-focused vision come to life. If you are compassionate, adaptable and experienced Certified Medical Assistant interested in joining our team, we would love to hear from you!

Eastport Health Care aspires to meet a full spectrum of health needs in rural Maine with innovative, affordable treatment. Leading through listening, learning through partnership and serving through collaboration make us agents of change for better health outcomes in Washington County.

*** Great Work Environment * Comprehensive Benefits * Market Competitive Salary**

Job requirements:

- Clinical and administrative experience
- Excellent communication and people skills
- Proficient computer skills
- Electronic medical record experience a plus

Please submit cover letter and resumé to:

Eastport Health Care Inc.
Attn: Roxy Woodworth, H.R. Manager
30 Boynton St.
Eastport, ME 04631
rwoodworth@eastporthealth.org

Eastport Health Care is an equal opportunity employer and provider.

Notice of U.S. Coast Guard's Invitation to Discuss the Coast Guard Station Eastport Housing Project in Perry, Maine

A public meeting will be held on Wednesday, November 13, 2019 from 6:00 to 8:00 p.m. at: Perry Elementary School 1587 U.S. Route 1 Perry, ME 04667

The subject family housing project for Coast Guard members and families assigned to the area consists of construction of four to eight residential units at 576 Shore Road in Perry, ME.

The Coast Guard Facilities Design and Construction Center (FDCC) is preparing an Environmental Assessment (EA) to understand and address the potential effects of the project. The public comment period for the EA closed on September 23, 2019. Some of the public comments received by the Coast Guard revealed additional questions and concerns. As a result, the FDCC is holding a public meeting to field questions from the community and provide additional details about the project.

A WALK to raise awareness about domestic violence was held at Pleasant Point on October 26. The walk through the community was sponsored by Peaceful Relations. (Edward French photo)

PLEASANT POINT

VETERANS DAY

In observance of Veterans Day on Monday, November 11, there will be a celebration at the Sipayik bingo hall at 11 a.m. Food will be provided.

FILM SCREENING

The Wabanaki Cultural Center in Calais will host a screening of *Dear Georgina,* followed by a discussion, on Thursday, November 14, at 6 p.m.

BASKETRY CLASS

A basketry class will be held Saturday, November 9, from 12 noon to 4 p.m. at Wabanaki Natural at 8 Back Road. There will be a potluck meal, so participants should bring a dish.

PERRY

by Eileen Curry
Tel. 853-2649

COAST GUARD PUBLIC MEETING

The U.S. Coast Guard will host a public meeting at the Perry Elementary School from 6 to 8 p.m. on Wednesday, November 13, to discuss the Coast Guard Station Eastport housing project in Perry. The Coast Guard Facilities and Construction Center is preparing an environmental assessment of the project.

CHRISTMAS FAIR

The annual Christmas fair will be held at the Perry Elementary School on Saturday, November 16, from 9 a.m. to 2 p.m. There will be food, lots of local crafters, Christmas items and handmade items on sale for early holiday shopping. Call 853-2522 to reserve a table.

STRAW POLL RESULTS

During the state election on November 5, Perry voters were asked in a straw poll about the operation of all types of adult use marijuana establishments within the municipality. By a one-vote margin, they favored allowing such establishments. The next step will be for the town to hold a special town meeting to vote on a warrant article and ordinance governing marijuana establishments.

Online fundraiser aids Robbinston veteran

Constance Guerrette has set up a GoFundMe site for Bryce Dwelley of Robbinston, a World War II veteran who has suffered a major stroke. According to the site, Dwelley always has been there to lend a helping hand to others when asked and has never asked for anything in return. Although a local organization facilitated approval for three months' oil and electricity assistance, the Veteran's Administration is not helping Dwelley at this time. Monies raised by the fundraiser will help with Dwelley's medical needs and groceries.

Four Pembroke American Legion members recently contributed their labor, redoing Dwelley's ramp "to make it safer and easier for me to get him in and out of the door," Guerrette says gratefully. "They placed a chimney cap on the chimney for him which he assembled before his stroke but was unable to place himself due to the age and height of home."

Dwelley faces further challenges as the winter approaches. "We were told yesterday that a new furnace is needed. The cost will be approximately $10,000–$11,000," says Guerrette, according to the online site.

"If anyone out there is able to help in some way, no matter how small, it would be greatly appreciated."

ROBBINSTON

by Helen Brooks
Tel. 454-7409

CONGREGATIONAL CHURCH

During the storm of October 17 part of the south-facing window known as the Diffin window was damaged at the Sewall Memorial Congregational Church. Members of the Diffin family have undertaken the task of raising $5,000 for the restoration of the window.

The church welcomed Ann Johnson, Darlene McConnell, Bonnie Lyons and Ann Carter as new members.

Several members were among those who travelled to Boston, Mass., for the celebration marking 400 years since the landing of the Pilgrims. They posed for a picture on the steps of the Massachusetts State House in front of columns originally carved in white pine from Robbinston.

Members of the children's ministry packed 14 shoeboxes to be given as gifts to children around the world as part of Samaritan's Purse Operation Christmas Child. All boxes need to be packed by national collection week, November 18 to 25.

GRANGE ACTIVITIES

The 146th state Grange session was held October 17 to 19 at the Skowhegan Community Center. Barbara Borderieux, national Grange chaplain, was the guest speaker for the session. The election of officers was held on October 19, and the sixth degree was conferred.

Sherry Harriman was reelected as the state master for 2020-2021. Attending the session were Dale Holst of the Alexander Grange and Sam Gaddis of Jacksonville Grange. Tom and Venita Gaddis were present for several sessions. Nate Pennell of the Jacksonville Grange also attended.

Members of the Alexander Grange who traveled to Skowhegan to receive the sixth degree were Elizabeth McVicar, Rhonda Oakes, John Seavey, Cassie Oakes, Debbie and Len Hanson. Dale Holst also received the sixth degree.

Alexander is still holding bimonthly meetings until after December. They welcomed a new member, Travis Saul. A lunch will be enjoyed on Monday, November 11, and veterans will eat for free.

On October 15 the American flag was raised at the Freeport Flag Ladies memorial in Columbia Falls. Attending were Jim Sullivan, Cassie Oakes, Elizabeth McVicar, John Manza, Dolly Sullivan, Jane Manza, Rhonda Oakes, Deb Hanson, Kim Rendell and Len Hanson.

Crystal Roussel is putting on a new event called Christmas Palooza, which will be held Saturday, November 30, from 9 a.m. to 3 p.m.

Bank collecting food pantry items

For the month of November, First National Bank's Eastport location will be collecting items for the Passamaquoddy Food Pantry. The pantry is located at the tribal government office, which is open Monday through Friday 8:30 a.m. to 4 p.m. Valuable donation items include: canned beans, chicken/tuna, fruits and vegetables, granola bars, pasta, rice, peanut butter, soup and cereal. For more information call the tribal government office at 853-2600.

Full-time Certified Medical Assistant

Certified Medical Assistant needed to assist medical providers in our Lubec clinic. CMA or practice-trained Medical Assistant with good communication skills; phlebotomy and/or injection experience a plus. Graduate of an accredited medical assisting program, associate's degree or higher and Medical Assistant certification required or willingness to obtain. Excellent benefit package. Apply to:

HealthWays/Regional Medical Center at Lubec
43 South Lubec Road
Lubec, Maine 04652
(207) 733-1090 ext 5203
trier@rmcl.org

Equal Opportunity Employer

HealthWays

EASTPORT MEMORIAL NURSING HOME

Position Openings

Inspired by our core values of dignity and respect, Eastport Memorial Nursing Home is committed to providing the highest quality of care in a safe, loving, compassionate and home-like environment. We meet folks when they are writing their last chapters in the books of their Lives. If there was a plan, it likely did not include us in it. Knowing this, our role is providing all the love, support, certainty and positive affirmation we can foster, knowing the script has gone awry. We will never replace home and family, but we welcome people to ours.

EMNH is actively altering our programming to better accommodate individual resident routines, traditions and preferences. Our goal is helping individuals attain and maintain the highest practicable physical, mental & psychosocial well-being. We exist to serve, support, coach & critique – whatever we can manage to help others experience the best quality of life they can.

We are adding a deck, redecorating our dining room, changing our dining process, expanding our activities program, creating a new Nurse's Station, installing a new Whirlpool and shower room, and expanding accessibility to our facility to allow us to better serve our community.

We are one of Maine's smallest homes, 26 beds total, and do not have Medicare/skilled nursing as a part of our design: we only care for chronically ill long-term care folks. Remarkably, our staffing complement is over the 95th percentile in Maine – over 4.5 hours per patient per day are allotted to implement their Individual Plans of Care.

Director of Nursing Services (RN-BSN), M–F: 8am–4pm, 40 hours/week: The spiritual leader of the facility: the organization ultimately reflects their leaders. The DON has the greatest ability to effect change and affect lives of the people around them – residents, staff & families – as they are the leader of the largest department. The director's tone and attention to detail reverberate throughout the entire organization. Their role is to define, set, and enforce standards for the application of the Plan of Care within the facility. Selecting and training the nursing team responsible for managing the Plan of Care sets the stage. Continuous follow-up in the form of MBWA is the means for success. Our facility is small so there are relatively rare circumstances that require the DON to stay in their office. Ensuring the delivery of care is uncompromised and meets or exceeds all applicable state & federal guidelines is the beginning. Our ultimate goal is to exceed our customer's expectations and anticipate their needs before they arise.

Clinical Coordinator (RN), M&F Day Charge Nurse 6am–2pm; MDS, Care-Planning & Implementation T, W & TR 8am–4pm, 40 hours/week: Second-in-command to the DON; they are the architect and engineer of the department. Working intimately with the IDT their mission is designing thoughtful, concise, manageable Care Plans. Simplicity of design is key: Utilizing resident preference, current and historical diagnoses and conditions to create measurable goals for active problems and effective approaches to managing them are hallmarks of proper care-planning. When done correctly the Care Plan determines and outlines the flow and pace of activity for every resident's day and by extension the entire team.

The Clinical Coordinator works on Monday and Friday as Charge Nurse directly with residents & floor staff. This experience is irreplaceable in developing, evaluating and following up on the implementation of the Care Plan, as well as ensuring that staff energies remain clearly focused on the mission rather than bogging down on the minutia. Tuesday, Wednesday & Thursday shifts to MDS Coordinator utilizing the experience, verifying the data and designing the plan. Resident conditions, changes and challenges are experienced firsthand by the hand that most intimately crafts the Care Plan.

Charge Nurse (RN/LPN), 32–40 hours/week: Multiple shifts. After years of accommodating former employee requests we have shifted from consistent assignment with limited full-time employees to managing by committee with multiple players. No matter how talented your pool is (and ours is), staff continuity ensures consistency and meaningful progress for residents is maintained every day. The Charge Nurse is the floor captain. Assisting the IDT with developing, implementing, monitoring, updating and evaluating the effectiveness of each resident's Individualized Care Plan, as well as assessing nursing staff member's successes & shortcomings in adhering to and/or properly restructuring the plan as conditions change is the performance standard.

In a non-skilled setting such as EMNH there is infrequent daily management and documentation of skilled services provided. Here it is management of chronic, long-standing conditions with an occasional illness, accident or exacerbation adding to our complexity. Keeping the focus strictly on long term care allows for a polished approach and design to care delivery. Observing, evaluating, working beside and coaching our certified nursing staff to improve and refine approaches to problems stated on the care plan, to help residents achieve their goals, are the primary roles of Charge Nurse.

CNA – Bathing, Restorative Nursing & Generalist Positions: 32-40 hours/week. We have lost continuity in our CNA schedules accommodating requests and are utilizing multiple per diem and part-time employees to cover a handful of full-time positions. To provide better continuity of care, re-establish benefit-eligible positions, as well as better accommodate current residents' preferred daily routine(s) we are shifting some starting and ending times and creating specialized positions to better meet resident needs. We want to be a better home, employer and resource to the community.

EMNH offers paid meals, pay in-lieu of benefits, generous wages and shift differentials, a competitive PTO & sick time plan, life insurance coverage and pre-tax accessibility to dental insurance.

Call for an application/email or fax resumé to:

Eastport Memorial Nursing Home
Attn: Nathan Brown, Administrator
23 Boynton Street
Eastport, ME 04631
administrator@emnh.org
Tel: (207) 853-2531 Fax: (207) 853-7117

EOE

Eastport Health Care

EASTPORT HEALTH CARE INC.

30 Boynton Street
Eastport, ME 04631

Eastport Health Care

Per Diem Certified Medical Assistant

Eastport Medical Department

People are the key to success of our health center and we rely on our staff to make our patient-focused vision come to life. If you are compassionate, adaptable and experienced Certified Medical Assistant interested in joining our team, we would love to hear from you!

Eastport Health Care aspires to meet a full spectrum of health needs in rural Maine with innovative, affordable treatment. Leading through listening, learning through partnership and serving through collaboration make us agents of change for better health outcomes in Washington County.

*** Great Work Environment * Comprehensive Benefits * Market Competitive Salary**

Job requirements:

- Clinical and administrative experience
- Excellent communication and people skills
- Proficient computer skills
- Electronic medical record experience a plus

Please submit cover letter and resumé to:

Eastport Health Care Inc.
Attn: Roxy Woodworth, H.R. Manager
30 Boynton St.
Eastport, ME 04631
rwoodworth@eastporthealth.org

Eastport Health Care is an equal opportunity employer and provider.

UNITED STATES COAST GUARD 1790

PUBLIC NOTICE

The U.S. Coast Guard (USCG) is extending the public comment period on the environmental issues and alternatives addressed in the:

Environmental Assessment Eastport Housing Project U.S. Coast Guard Station (STA) Eastport Perry, Maine

The USCG previously identified a requirement to provide family housing for USCG personnel assigned to USCG Station Eastport. For this purpose, a 75-acre site with an existing single-family house was recently acquired at 576 Shore Rd., Perry, Maine 04667 (County of Washington). An Environmental Assessment (EA) was developed and released for public comment from August 23, 2019 through September 23, 2019. The USCG has received requests from the public to lengthen the public comment period. In the EA, the USCG proposed the development of the Shore Road property beginning in late spring/early summer of 2020 with one of the following design alternatives:

- Demolish the existing house and associated infrastructure and construct four duplex housing units (eight units total) consisting of three 3-bedroom units (six units total) and one 4-bedroom (two units total); or
- Demolish the existing house and associated infrastructure and construct seven single-family units consisting of six 3-bedroom units and one 4-bedroom unit.

Both of the alternatives analyzed contained a 5,000-square-foot maintenance building, a 2,000-square-foot community building, and all associated roads, sidewalks, stormwater controls, street lights, utilities, and typical infrastructure to support this community.

The EA developed for the project identified the environmental resources potentially affected by the project and assessed the potential direct, indirect, or cumulative impacts on those resources. Mitigation measures to minimize or eliminate any impacts were identified in the EA. Analysis in the EA concluded that no significant or otherwise substantial environmental impacts are expected to result from implementation of the Proposed Action at the project site. Therefore, a preliminary Finding of No Significant Impacts (FONSI) was developed and is included for comment along with the EA. The complete EA is available for review online at the Town of Perry's website at http://www.perrymaine.org/Draft_Eastport%20EA.pdf and at the following locations:

1) Pembroke Library Association
221 Old County Road
Pembroke, ME 04666-4507

2) Peavey Memorial Library
26 Water Street
Eastport, ME 04631-1599

3) Perry Maine Municipal Clerk's Office
898 U.S. Route 1
Perry, ME 04667

The deadline for receipt of public comments on the proposed action and alternatives, environmental issues and FONSI has been extended until December 13, 2019. Comments will only be accepted in writing. Please send comments to Christy Benes, Wood E&IS, 285 Davidson Avenue, Suite 405, Somerset, NJ 08873.

APPENDIX B

Public Comments and Responses to Comments

USCG EASTPORT HOUSING PROJECT
ENVIRONMENTAL ASSESSMENT
RESPONSES TO PUBLIC COMMENTS

Summarized Issues of Concern from Public Comments	Responses
Local Zoning and Town of Perry Infrastructure/Services	
• Adherence of the USCG project to local development and zoning ordinances	As the contract is awarded for the project and it proceeds into the design phase, the USCG will consider the requirements of the local codes and ordinances to the maximum extent practicable and has committed to allowing the Town of Perry's Planning Board to conduct an advisory review. Prior to construction, the USCG will obtain all required State and Federal environmental permits. This will include voluntarily obtaining pertinent state land disturbing erosion control permits for construction, approval of permanent stormwater controls to meet Maine requirements, design and permitting for subsurface sewage disposal, appropriate potable water well permitting, and compliance with Maine's Coastal Program.
• Potential for the USCG to divest itself of the property in the future should Station Eastport close	At this time the USCG sees Station Eastport as a mission essential location and closure of the facility is not under consideration. As such, the USCG does not anticipate a need to divest of the property in the future.
• The current physical condition of Shore Road and the ability of the road to handle the additional traffic the USCG development will bring	Shore Road is a paved arterial road capable of handling the additional cars expected during and after construction. While USCG did not conduct an independent traffic study for Shore Road, it was reported to support an average of 500 vehicles per day in the Town of Perry, Maine Comprehensive Plan (November 2009) and the Proposed Action is not expected to cause an exceedance of that number of vehicles. All construction vehicles utilizing Shore Road to access the project site must meet Maine Department of Transportation regulations.

Summarized Issues of Concern from Public Comments	Responses
• The increase in traffic on Shore Road the USCG development might bring, including the potential impact on pedestrians and cyclists	Shore Road is a paved arterial road capable of handling the additional cars expected during and after construction. While USCG did not conduct an independent traffic study for Shore Road, it was reported to support an average of 500 vehicles per day in the Town of Perry, Maine Comprehensive Plan (November 2009) and the Proposed Action is not expected to cause an exceedance of that number of vehicles. In addition, no changes to traffic patterns on Shore Road are planned in conjunction with the Proposed Action. All motorists using Shore Road, a public roadway, are expected to comply with all pertinent traffic laws, including the requirement to yield to the rights-of-way of pedestrians and bicyclists.
• Increases in population associated with the new development and how that would affect municipal services such as the fire department, roadway maintenance, trash collection, etc.	While the introduction of up to eight new homes to Perry, Maine and the addition of up to approximately 34 people to the Town's population will entail additional overall costs of municipal services, those additional costs are expected to be minimal in nature. Snow removal at the new development would be undertaken by USCG employees or their contractors at Federal cost and no cost to local government. For an eight house development, statistics indicate that an increase of an average of approximately 72 trips per day would occur on local roads (see **Section 4.1.3.2**), creating no noticeable increase in the rate of needed road maintenance. Emergency medical services needed by the new residents, a younger military family population, are not expected to create a noticeable increase in incremental additional costs to the Town.
• Construction of higher density housing than is typical within the rural Town of Perry	While the construction of a residential subdivision, albeit a small one, is atypical to the rural setting found in Perry, it is most cost effective for the Federal government to concentrate all of its housing properties for personnel in one location to allow for ease in maintenance and lowered costs of construction. Every attempt will be made to ensure that the housing that is ultimately designed and constructed complements the surrounding landscape and character of the local area.

Summarized Issues of Concern from Public Comments	Responses
Project Scope	
• Potential for fencing and/or security features in the proposed development	This project's scope does not include any security fencing or gating.
• Potential for swimming pools at the proposed development	The Proposed Action does not include the installation of pools and USCG housing regulations do not allow residents to install personally-acquired pools.
• The intended use of and onsite placement of the maintenance building	The maintenance building will be used to store typical residential maintenance items to be used onsite such as lawn mowing equipment, rakes/shovels, and snow blowers. There are no associated industrial activities/processes planned to occur onsite. Any fuels and oils stored will be kept in proper containers and an appropriate spill kit will be kept nearby. The maintenance building was incorrectly identified in the draft EA as a 5,000 ft^2 building and its description has been corrected in the final EA to be 1,000 ft^2. The USCG will consider different onsite placements of the maintenance building during the design phase of the project.
• Need for construction of a community center	This project's scope no longer includes a community center. The building was considered during the planning process and has since been dropped from consideration.
• Need for demolition of the existing house and outbuildings onsite	In order to optimally lay out eight housing units and minimize potential environmental impacts on the property, the existing house and outbuildings must be removed.
• Number of cars anticipated to be located at the new housing development	The USCG estimates three vehicles per housing unit or approximately 24 vehicles total for Design Alternatives 1 and 3, which have the greatest number of housing units (eight).
• Responsible parties for overall property maintenance, to include exterior grounds and interiors of buildings	USCG personnel or its contractors will maintain the property, to include any private roads and other infrastructure that are constructed on the property.
• Outdoor lighting fixtures and the potential for light pollution	As a result of public comments received regarding light pollution, USCG has modified the project to ensure that exterior lighting

Summarized Issues of Concern from Public Comments	Responses
	requirements will be consistent with International Dark-Sky Association (IDA) principles. Exterior lighting will be located only in areas that require exterior lighting, be no brighter than necessary, will minimize blue light emissions, and will utilize down-lighting fixtures. Security lighting will generally run from sunset to sunrise.
• Inclusion of a storage building for residents' personal property, such as boats, motorcycles, etc.	This project's scope does not include a separate building to store residents' personal property. All housing units will have a connected garage in which residents may store their personal belongings.
• Inclusion of sidewalks in the Proposed Action	Sidewalks are installed due to USCG housing standards required by Federal law in compliance with the Americans with Disabilities Act (ADA).
• Landscaping proposed for the project site	A landscaping plan will be developed as part of the ongoing design process. The landscaping chosen will ultimately consist of native plants typically found in the surrounding community and require minimal long-term maintenance. Large portions of the parcel will be left in the current natural/undeveloped condition, so new plantings are not expected to be widespread over the site.
• Aesthetic design of the houses	As a result of comments from the public, the USCG took the surrounding community character into account for architectural designs and modified its construction contract solicitation to allow only single family units, as proposed in Design Alternatives 2 and 3. The development will appear different from the surrounding community because eight units will be placed within a 15 acre footprint, however, the design is not expected to be perceived as "institutional" in appearance.
• Erroneous identification of a hardware supply store in the Town of Perry	The reference to the presence of a hardware supply store in Perry was an error. **Section 3.1.1** of the final EA was revised to correct this information.
Initial Project Planning	
• The consideration of other sites in the local area for purchase	During the property search, USCG identified nine properties on the market within a reasonable commuting distance (RCD). RCD is defined as a travel time, round trip, of two hours or less from

Summarized Issues of Concern from Public Comments	Responses
	residence to duty station during peak commute times. The properties identified were located in Dennysville, Pembroke, Robbinston, Eastport, and Perry. While the scope of this EA does not cover the initial evaluation of sites and ultimate real property acquisition, information regarding the sites considered for purchase was added to **Appendix C** for reference.
• Why the EA was written after the 576 Shore Road property was purchased	The US Coast Guard Environmental Planning Implementing Procedures, dated April 2019, allow for the acquisition of real property without the completion of an EA. The property acquisition was categorically excluded from the provisions of the National Environmental Policy Act (NEPA). The proposed development of the property is not categorically excluded from the provisions of NEPA, so USCG has analyzed the potential environmental impacts associated with Proposed Action at 576 Shore Road site in this EA to satisfy its requirements under NEPA.
• Perception that the USCG committed, at the public meeting, to revisit the site selection process	When public meeting attendees repeatedly questioned the choice of the 576 Shore Road site in Perry, the USCG indicated that the current tasking of their Facilities Design and Construction Center (FDCC), was to design and build the housing at that site. The USCG stressed that FDCC's tasking, and the scope of the EA, did not entail a new analysis of local properties on which to construct homes. USCG FDCC leadership committed to briefing officials up the chain of command about the concerns of the local public regarding the site selection. This briefing occurred shortly after the public meeting.
• Consideration of USCG personnel housing preferences	USCG senior leadership is responsible for ensuring that members are able to secure housing within the constraints of Federally approved basic housing allowances. In response to the classification of the northern Maine area as a Critical Housing Area, it was determined that construction of USCG personnel housing was the best course of action to address the housing problems identified. After acquiring congressionally appropriated funds for the effort, USCG's Civil Engineering Unit (CEU) Providence was tasked with finding property on which to construct the homes (see **Appendix C**). Individual USCG

Summarized Issues of Concern from Public Comments	Responses
	Station Eastport members were not queried regarding personal preferences for location of the proposed housing.
• Resources used to inform the draft EA	The information used to develop the draft EA came from readily available literature and from site-specific studies that USCG contracted to perform. The sources of the individual pieces of information are listed in **Section 7.0**, *References*.
• Flexibility in the number of housing units to be constructed	The USCG plans to build up to eight housing units. The exact number of units will depend upon the calculated costs of different options versus available funding. At the public meeting, the USCG indicated that the original plan was to construct 12 houses onsite but that project budgets did not allow for that number of houses. The USCG indicated that if there is ever, in the future, a USCG requirement to build more than the eight houses analyzed in this EA, additional NEPA analysis would be required and the public engaged again.
• Consideration of the purchase of or rental of existing houses in the area to house uniformed USCG personnel	The northern Maine area has been deemed a Critical Housing Area – meaning suitable housing that meets USCG standards is in such short supply the USCG deemed this project necessary. USCG housing requirements are detailed in Commandant Instruction (CMDTINST) M11101.13G and include a minimum number of bedrooms per unit, restrictions on floor plan layouts, and other necessary appurtenances. Identifying houses that met these criteria and were available for sale or rent was determined to be infeasible.
• Location of the proposed housing project in an area with municipal water and sewer services	During the property search, USCG identified nine properties on the market within the RCD. The properties identified were located in Dennysville, Pembroke, Robbinston, Eastport, and Perry. A ranking of these nine properties was performed based on 10 site evaluation criteria, which included the availability of onsite water and sewage. None of the nine properties were located in areas where municipal water and sewage was available.
• Perception that the draft EA was based on an overly generalized project plan,	While the USCG recognizes that some aspects of the Proposed Action, such as actual building design, site layout, etc. are generalized in the EA due to the design/build nature of the project,

Summarized Issues of Concern from Public Comments	Responses
rendering the USCG's assessment of impacts as insufficiently detailed	they disagree that the level of detail provided is insufficient to adequately inform the analysis of potential environmental impacts. Furthermore, through the identification of issues of concern to the public as a result of the comments received on the draft EA, the USCG has modified the solicitation for the design/build contract to be more prescriptive with regard to layout characteristics, lighting fixtures, etc. to address local concerns.
Project Communication	
• USCG interaction with the Town of Perry in advance of purchase of the property	Prior to the purchase of this property, the USCG sent an employee (a Real Property Specialist) to a Town of Perry public meeting on 12 July 2018 to address all questions.
• Lack of individual notification of property abutters	The USCG strived to provide information and public outreach equally to all interested parties to include property abutters. This was done through newspaper notifications for scoping, the release of the draft EA for public comment, and the notice of public meeting (see **Section 1.6**). While individual notifications to abutters were not made, they are not required by NEPA or USCG policies.
• Publication of the Notice of Scoping in a paper other than the *Quoddy Tides* and desire for publication of a second Notice of Scoping	The information provided to the USCG at the time of the Notice of Scoping suggested that the *Calais Advertiser* was the most widely circulated newspaper in the area. Only after speaking directly to the Town Clerk was this mistake rectified. The notice, however, only alerted people to the impending development of the EA. The availability of the draft EA for public review and comments was announced in the *Quoddy Tides*, as required by Federal law. The USCG will not publish a second "Notice of Scoping." Based on the number of comments received by the USCG from the local community as a result of this process, it is evident that the community was successful in communicating their questions and concerns.

Summarized Issues of Concern from Public Comments	Responses
• Initial lack of availability of an electronic online draft EA	The USCG acknowledges that although not required, making the draft EA available in an electronic format improved its availability to the public. As soon as the USCG received feedback from the community, they worked diligently to make the draft EA available to the local community in an electronic format. It became electronically available on 8 September 2019.
• Desire for the USCG to host a public meeting to allow local community members to discuss concerns with USCG personnel	The USCG conducted a public meeting on 13 November 2019 at Perry Elementary School to provide an overview of the project for all concerned citizens in the area. This meeting had a town hall format and allowed members of the local community to provide comments and ask questions. The local community was notified of the date, time, and location of the meeting in both the 25 October and 8 November 2019 editions of the *Quoddy Tides*. Twenty-seven members of the public, including three congressional staff members, attended the meeting.
• The method in which public comments will be addressed and the responses shared	The final EA will be available for review in the same places as the draft version was available and will be announced in the *Quoddy Tides*. It will also be made available in electronic format on-line. Summaries of the public comments received and the USCG responses to those comments are part of this final EA. When possible, the USCG endeavors to incorporate project modifications to alleviate public concerns. Any modifications to the Proposed Action are detailed in these comment responses, changing project descriptions and analyses in the final EA. Changes are also written into the contract solicitation for the proposed construction work as appropriate.
• Perceived lack of USCG engagement with the local community in Perry, Maine	The USCG strives to be responsive to public concerns. As a result, the USCG conducted a public meeting on 13 November 2019 at Perry Elementary School to provide an overview of the project for all concerned citizens in the area. This meeting had a town hall format and allowed the local community to provide comments and ask questions. The local community was notified of the date, time, and

Summarized Issues of Concern from Public Comments	Responses
	location of the meeting in both the 25 October and 8 November 2019 editions of the *Quoddy Tides*. Twenty-seven citizens, including three congressional staff members, attended the meeting.
• The public perception that USCG sent a commercial realtor to a town meeting during the real estate acquisition process	The USCG did not send a commercial realtor to represent the USCG during the real estate acquisition process. The individual that attended the Town of Perry meeting on 12 July 2018 to represent the USCG and answer questions was a USCG employee (a Real Property Specialist).
• The Pembroke Library Association staff was apparently unaware that they had received a copy of the draft EA	The draft EA was sent via overnight delivery to the Pembroke Library Association with delivery confirmation received. The USCG was not advised of any difficulties with the public locating the document at the library until very late in the comment period.
• Contention that the Peavey Memorial Library in Eastport was denied a second copy of the draft EA	The USCG is not aware of any request by the Peavey Memorial Library to have a second hard copy of the draft EA provided.
• The perception that the NEPA process is biased against low-income community residents and others without time to read a seemingly lengthy document and submit comments	The USCG does not concur that the NEPA process is biased against low-income community residents (see **Section 4.1.9**) or other members of the public. The USCG utilizes a standard review period for all NEPA documents that is outlined in US Coast Guard Environmental Planning Implementing Procedures, dated April 2019, and complies with Federal laws and regulations.
• USCG's consideration of public input into the process moving forward	The USCG considers and values all public comments made. Public comments have led to changes to the Proposed Action and adjustments within the constraints of USCG mission requirements and project budgets.
• Ease in identification of edits made between the draft and final EAs as a result of public comments and project changes	The final EA includes a synopsis of changes made since the draft EA was released. This synopsis can be found in the **Foreword**.
• Perception that significant changes committed to by the USCG at the public meeting would warrant the second release of a draft EA	The USCG disagrees with the assertion that project design changes committed to by the USCG are substantive enough to warrant the release of a second draft EA. When it became aware of the issues of concern of the local population, the USCG immediately began to

Summarized Issues of Concern from Public Comments	Responses
	amend project plans to address the concerns they could within the constraints of the project budget, USCG building standards, and legal requirements. The USCG asserts that these changes representative positive outcomes of the NEPA public involvement process and does not see the need for iterative public reviews of the Proposed Action.
Schools and Taxes	
• Potential stress on the local school system and conduct of studies on school capacities	The increase in USCG dependents will likely not exceed five additional students at Perry Elementary School. While the EA did not include a formal study of the local school capacity, the facts are that current Station Eastport personnel have a total of nine children in kindergarten through eighth grade (two of the nine currently attend Perry Elementary School). Using existing station demographics, this project will move eight of these families to Perry and the remaining 13 families will continue to utilize private sector housing. Therefore, the seven school-aged children not already attending Perry Elementary School will likely be spread out amongst multiple communities.
• Number of children of Station Eastport members currently enrolled in local public schools	As previously noted, the members of Station Eastport currently have nine children in grades K-8 in the following schools: Calais (four), Whiting (two), Eastport (one), and Perry (two). The total number of children has been fairly consistent over past years but varies based on members assigned to the unit.
• USCG consideration of "alternative schooling choices" that might alleviate the burden on Perry Elementary School	Like all US citizens, USCG personnel make schooling choices for their families based on the available educational options and personal family values. The US government does not make schooling choices for their personnel.
• Erroneous reference to School Union 104	The reference to School Union 104 was based on the Town of Perry, Maine Comprehensive Plan printed in 2009, prior to the system change. **Section 3.1.7** of the final EA was revised to correct this information to the current classification of Alternative Organizational Structure (AOS) 77.

Summarized Issues of Concern from Public Comments	Responses
• Exemption of USCG from property taxes, consideration of a payment to local government in lieu of taxes, and the potential availability of Federal financial subsidies to local public school systems	Federal government agencies (in this case the USCG) are exempt from the payment of state and local property taxes. The US Department of Education's Federal Impact Aid program provides financial support to some public school systems when children living on Federal property attend, however determining applicability of this program to public schools serving the project site is not within the purview of the USCG. The USCG currently has no agency-specific programs that allow for payments to local governments in lieu of taxes.
• Potential increases in local tax rates for existing residents as a result of the Proposed Action	The USCG is unable to speculate as to whether or not the local tax rate would change in the future and advises the direction of questions such as this to Town of Perry officials.
Costs and Economics	
• Effect of this and other USCG housing developments on neighboring property values and local for-profit businesses	The USCG did not attempt to quantitatively assess the potential impact of the Proposed Action on neighboring property values or local businesses as it is not customary to perform a quantitative economic analysis for a small development such as the one proposed for Station Eastport housing. While the removal of up to eight renters from the local area is recognized to have some impact on the local economy, that impact is expected to be negligible.
• Current dollar amount of USCG housing allowances and its adequacy in the existing local housing market	A 2013 Housing Market Survey and Analysis (HMSA) was performed by the USCG (USCG, 2014). The HMSA calculated the projected weighted average monthly housing allowance per member for 2018 as $1,126. The median purchase price of a home in the Eastport and Jonesport areas, the subject of the study, in 2018 was estimated to be $129,280. Considering initial home acquisition costs (down-payments, closing costs, etc.), subsequent mortgage payments, insurance premiums, property taxes, utilities, and maintenance costs, there was an affordability gap of $815 per member. This figure constituted 172% of the average basic housing allowance per member.

Summarized Issues of Concern from Public Comments	Responses
	The HMSA also evaluated costs and availability of rental homes in the Eastport area. The costs of vacant three-bedroom homes for 2018 were projected to be between $800 and $1,200 per month, inclusive of estimated utilities and renter's insurance premiums (USCG, 2014). While these figures appear much more affordable when compared to the weighted average monthly housing allowance of $1,126, the HMSA found that very few units were expected to be vacant based on real estate trends over time.
• The potential for the USCG to use local contractors for the construction of the proposed development	The Federal contracting process that will be utilized to award a design/build construction contract for this project requires fair and open competition to all qualified offerors. Local contractors that meet the qualification requirements of the solicitation would certainly be able to propose on the solicitation and could, ostensibly, be awarded the contract. All offerors, local or not, would be evaluated using the same evaluation criteria.
• USCG costs for this project, initial and long-term	As the award of the construction contract has not yet occurred, the USCG's estimate for costs of construction is not releasable to the public in order to protect the integrity of the procurement process.
• Cost of building the proposed housing development versus renovation of existing local houses	As the award of the construction contract has not yet occurred, the USCG's estimate for costs of construction is not releasable to the public in order to protect the integrity of the procurement process.
Environmental and Cultural	
• Consideration of the Passamaquoddy Water District study in determining potential environmental impacts from the Proposed Action	The USCG is aware that a groundwater study was conducted by the Passamaquoddy Tribe, but does not have all details regarding where the test drills were located, the detailed results of the study, or whether the Passamaquoddy Tribe actually went forward with development of the project. It appears that the Passamaquoddy Tribe was evaluating the development of a well field in Perry to provide water for its public water supply systems and was modeling pumping rates of 250 gallons per minute. The USCG project envisions a single residential well for each housing unit plus a well

Summarized Issues of Concern from Public Comments	Responses
	for the maintenance building, pumping at much lower rates (a sustainable yield of 1 to 2 gallons per minute with nine wells total). Thus, it was determined that the Passamaquoddy study is not comparable to what would be expected for the Proposed Action. During the site evaluation phase of the project, a groundwater supply study (GSS) was conducted by Certified Maine Geologists with expertise in hydrogeological assessments. They evaluated groundwater yields at the project site and concluded that there is enough yield to support the Proposed Action (see **Appendix D** and **Appendix E**).
• Potential impacts to offsite drinking water well yield as a result of the wells associated with the Proposed Action	Certified Maine Geologists conducted pumping tests on two existing water supply wells and three newly installed test wells at the project site. Groundwater level drawdown was measured in each of the pumping wells during the test. During the pumping test in each well, water level drawdown was also measured in the other wells (i.e., observation wells) at the site. No drawdown occurred in the non-pumping observation wells while pumping. The distance between the wells ranged from 200 to 600 feet. The wells on the nearest abutting properties are approximately 350 and 550 feet north and over 1,000 feet to the south of the test wells. Given that there was no drawdown in observation wells at the project site during the pumping test, it is unlikely that excessive drawdown would occur at abutting properties, which are farther away (see **Appendix D**). Although the USCG has confidence that the GSS that was conducted was sufficient to conclude that offsite wells would not be affected by the wells associated with the Proposed Action, a supplemental study was conducted and specifically designed to determine the potential for offsite groundwater impacts (see **Appendix E**). Results from the supplemental groundwater testing at this site concurred that the project would not impose water level impacts beyond the property boundaries.

Summarized Issues of Concern from Public Comments	Responses
• Potential for the wells at the project site to affect arsenic levels in the wells of neighboring properties	Arsenic is a naturally occurring metal known to commonly exist in the groundwater throughout the Washington County, Maine region. The wells associated with the Proposed Action are not expected to impact the concentrations of arsenic in wells in the immediate vicinity of the project site (see **Appendix E**).
• Potential environmental impacts associated with buried horses on the project site	During the course of the past use of the project site as an equine shelter, three horses were buried across the parcel. This information was confirmed by the previous property owner, who provided estimated locations of the animal remains. The USCG does not anticipate any environmental concerns related to the natural decomposition of the small number of buried horses on the project site.
• Potential environmental impacts associated with existing high fecal coliform levels at the project site	A high fecal coliform level was detected at one of the existing groundwater supply wells at the project site. This well will be abandoned in conjunction with the Proposed Action, so it will not pose a risk to the health of future USCG residents. All water supplied by new wells drilled in conjunction with the Proposed Action would be tested to ensure that it meets drinking water standards.
• Potential impacts of wastewater drain fields in proximity to drinking water wells and other aquatic systems	Well and septic system locations were selected based on data collected during pumping tests at installed monitoring wells and field observations of soils. This data allowed for determining setbacks between wells, recommended well construction methodologies, and septic system locations that are protective of groundwater (including the water table) and surface water. These efforts minimize the potential for adverse impacts to water resources. In addition, a wastewater evaluation study was conducted by a Maine Licensed Site Evaluator following the State of Maine Subsurface Wastewater Disposal Regulations (see **Appendix D**). All proper, well established, and protective setbacks to natural resources, property lines, etc. were maintained. At the public meeting, USCG stated that it was amenable to conducting additional studies to verify that wastewater from the

Summarized Issues of Concern from Public Comments	Responses
	Proposed Action would not significantly affect drinking water and other aquatic systems. After subsequent research into the testing methodologies available and the comparison of those with the study that had already been conducted by the Maine Licensed Site Evaluator, it was determined that additional studies would not add substantial value to supplement the current study's findings.
• Potential future septic drainfield failures	Should a drainfield fail, the USCG will seek to repair or replace it in accordance with State of Maine Subsurface Wastewater Disposal Rules. A second or spare drainfield area is provided for within the parcel boundaries of each housing unit.
• Request to make available the nitrate impact assessment (NIA), subsurface wastewater disposal evaluation, and groundwater supply study (GSS)	The NIA, subsurface wastewater disposal evaluation, and GSS are all included as part of the Site Evaluation Report, which has been made available as **Appendix D** of the final EA. The supplemental groundwater evaluation is also available as **Appendix E** of the final EA.
• Potential soil drainage issues onsite	A Maine Licensed Site Evaluator authorized by the State of Maine to design subsurface wastewater treatment systems conducted test-pitting and soil classification to determine the suitability of soil for development. The evaluator found the site to have suitable soil to install subsurface wastewater treatment systems at the site. The State of Maine no longer uses "perc" tests to determine the suitability of a site for on-site wastewater disposal.
• Potential for a significant amount of gravel to be brought in to counter the limiting geological features at the site and allow for better drainage	Subsurface wastewater disposal and stormwater systems will be designed according to State of Maine requirements. The actual amount of gravel (and other materials) needed will be determined during the design phase of the project.
• Stormwater controls and potential for water quality impacts to streams and nearby waterways	The USCG's site plan will meet all State of Maine requirements for stormwater control. Stormwater systems will be developed during the design phase of the project and will be reviewed and approved by the Maine Bureau of Land and Water Quality. During the construction and ground disturbance phases of the project, the USCG must follow the Maine Department of Environmental Protection requirements for erosion and sediment control.

Summarized Issues of Concern from Public Comments	Responses
• Presence of incorrect information in **Section 4.18**-paragraph 3 regarding stormwater drainage toward US Route 1	The reference to Route 1 was an error. Stormwater runoff will flow toward Shore Road. The final EA was revised to correct this information.
• The use of lawn fertilizer	Any fertilizers required for a healthy lawn would be used in accordance with all local, State, and Federal regulations. The USCG policy is to minimize fertilizer use.
• Protection of the northern long-eared bat	Northern long eared bats, a species Federally listed under the Endangered Species Act (ESA) as threatened, use mature trees as roost sites. A biologist conducted a habitat survey of the project site to determine the presence of mature tree roost sites and found that this habitat was present. Most of this habitat, however, is located in the wooded portion of the site that not will not be developed. A field survey to determine if bats were roosting was not conducted. Maine Department of Inland Fisheries and Wildlife has not identified hibernacula (i.e., areas where bats hibernate) on or in close proximity to the project site. Based on this information, the USFWS has determined that although "the Action may affect the northern long-eared bat; … any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o)."
• Protection of the dawn-land sedge	The dawn-land sedge (*Carex waponahkikensis*) is a Maine species of special concern due to its limited distribution in two coastal counties in the state, Washington and Hancock. It is not currently afforded any Federal protection under the ESA or legal protection under Maine law. Therefore, the project site was not surveyed for its presence.
• Protection of black terns	Black terns are not projected to live or nest on or near the project site and prefer to live in freshwater emergent marshes, typically much farther inland.
• Protection of eagle species	While both the bald and golden eagle are Federally protected under the Bald and Golden Eagle Protection Act, the golden eagle is not known to live in the northern portion of Maine near Perry.

Summarized Issues of Concern from Public Comments	Responses
	Furthermore, there are no known bald eagle nests located on or near the project site. The nearest documented nest is located nearly 2 miles to the southwest of the site. Should a previously unidentified bald eagle nest be encountered on or near the project site, the USCG will initiate consultation with the USFWS to determine an appropriate course of action.
• Protection of the bobolink	The bobolink (*Dolichonyx oryzivorus*) is not currently offered any Federal protection under the ESA or legal protection under Maine law. Therefore, the project site was not surveyed for its presence. As stated in **Section 4.3.1.2.2**, some wildlife is expected to avoid the project site during construction as a result of increased noise and human activity. These potential impacts are expected to be minor and temporary in nature.
• Methods of evaluation of potential presence of and impacts to endangered species on the project site	The presence of threatened or endangered species, or their critical habitat, was evaluated through the process of sending consultation letters to the USFWS and the Maine Natural Areas Program requesting their review of information available, a search of the data available on the Maine geographic information system website, and a thorough reconnaissance of the property conducted by a certified wetlands biologist in the State of Maine. The results concluded that there were no documented threatened or endangered species present at the site, with the exception of the potential for the long-eared bat (see **Appendix G**). Based on this information, the USFWS has determined that although "the Action may affect the northern long-eared bat; … any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o)."
• Potential short-term and long-term impacts to local wildlife during construction	There may be some avoidance of the area by wildlife as a result of increased noise and human activity during construction; however, these impacts are not considered significant and would be temporary in nature. No long-term effects on local wildlife are expected as those individuals that were displaced during

Summarized Issues of Concern from Public Comments	Responses
	construction are expected to return and continue their use of the streams and forested western portion of the property. The Proposed Action is not expected to jeopardize any wildlife species population.
• The potential for wetland impacts onsite	Early field work included a wetland delineation for the entire parcel. The results of that wetland delineation were included in the draft EA (see **Appendix D** of the final EA). The Proposed Action avoids all wetlands and meets all State of Maine requirements for proper setbacks from those wetland areas.
• Potential presence of vernal pools and associated amphibian populations onsite	A vernal pool survey was conducted in May and June of 2019 at the project site and no vernal pools were identified. The timing of the survey met the standards for vernal pool surveys in the State of Maine. A man-made pond was found to be present onsite and, by definition, is not considered a vernal pool, which is a naturally isolated depression containing shallow water during at least a portion of the year. A man-made or man-enhanced pond feature contains both an inlet and an outlet (hence, is not isolated). Even considering the physical differences in man-made ponds and vernal pools, the surveyed amphibian egg mass count from the man-made pond at the project site was not high enough to characterize the feature as a "Significant Vernal Pool" under Maine standards. While it appears that onsite amphibians may be using the pond and adjacent forested wetlands as habitat, the Proposed Action will not impact any of those landscape features.
• Mischaracterization of the project as not containing farmland, which, by some definitions, includes pastureland	The use of the property as pastureland for horses by the previous owner was not known at the time the draft EA was developed. **Section 3.2.2** of the final EA was revised to correct this information.
• Potential for impacts to farmlands protected by the Farmland Protection Policy Act	As a part of the permitting effort for this project the USCG completed a Farmland Conversion Impact Rating assessment form, which assessed non-soil related criteria, such as the potential for impact on the local agricultural economy if the land is converted to non-farm use, and compatibility with existing agricultural use, and submitted this to the local Natural Resources Conservation Service (NRCS) office. The NRCS determined that the Proposed Action at the

Summarized Issues of Concern from Public Comments	Responses
	project site was in full compliance with the Farmland Protection Policy Act (see **Appendix F**).
• Ability for Federally recognized tribes to comment on the project	The USCG consulted with the Houlton Band of Maliseet Indians, the Passamaquoddy Tribe of Indians, the Penobscot Nation, and the Aroostook Band of Micmacs. The Houlton Band of Maliseet Indians, the Penobscot Nation, and the Aroostook Band of Micmacs did not voice any concerns regarding the Proposed Action. The Passamaquoddy Tribe posed some concerns to the USCG regarding the assessment of archaeological resources at the project site (see **Section 4.5.2.2** and **Appendix H**). Should cultural or historic artifacts or human remains be encountered during construction, the USCG will reinitiate consultation with both the Maine Historic Preservation Commission and the Federally recognized tribes to address what was found.
• Potential for historic artifacts to be found onsite	The USCG consulted with the Maine Historic Preservation Commission and received their concurrence that the project will have no effect on historic resources. Should cultural or historical artifacts or human remains be encountered during construction, the USCG will reinitiate consultation with both the Maine Historic Preservation Commission and any pertinent Federally recognized tribes to address what was found.
General Concerns	
• What the public should expect after the completion of the public comment period	After the public comment period ended, the USCG evaluated and addressed public concerns and made any needed edits to the final EA to address those concerns. Since the impacts associated with the Proposed Action were still determined not to be significant after consideration of public comments, the USCG signed a Finding of No Significant Impact (FONSI) and will publish the final EA and FONSI for public informational purposes.

Summarized Issues of Concern from Public Comments	Responses
	Once the NEPA process is complete, the USCG will contract a design and construction company to develop the specific site plans. Once those are prepared, construction of the housing project will commence. The final design is proposed to be completed in the fall of 2020. Construction would follow in the summer of 2021, with completion anticipated by the summer of 2022.
• Potential for site access from Route 1 versus Shore Road	The property does not border Route 1.
• The EA's description of the Perry community's income and education as "below average"	These, and any other reference to residents' income, poverty status, or educational levels were obtained from the US Census Bureau or the Town of Perry, Maine Comprehensive Plan and were stated as facts and to support Federal requirements pursuant to Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The presentation of these facts was not intended to negatively characterize the community. These statistics were not used as arguments for proceeding with the project, but demographics shown to both inform readers of basic community characteristics and to demonstrate that there would be no disproportionate burden to low-income, minority, and/or tribal communities as a result of the Proposed Action.
• Potential for USCG residents to trespass on nearby private lands for recreational purposes or to gain shore access	There is no expectation that the USCG personnel and their families will attempt to illegally access the shoreline through adjacent properties or utilize any private property without explicit permission from the property owner(s).
• Potential for the general public to use the USCG property for access to the Rest Lawn Cemetery on an adjacent parcel, as has been done in the past	USCG's CEU Providence is responsible for management of real property matters at the project site and has committed to allowing an easement to the Rest Lawn Cemetery so that pedestrian access can continue across the project site as it has occurred in the past.
• Potential for USCG personnel living in Perry to lose causeway access to Station Eastport should a natural disaster occur	The USCG plans for contingencies such as natural disasters and will ensure that adequate personnel are on-station in advance of approaching storms. Currently, many Station Eastport personnel live

Summarized Issues of Concern from Public Comments	Responses
	outside of Eastport and the USCG contingency protocols have proved effective in the past.
• Number of USCG personnel assigned to Station Eastport	There are currently 21 members assigned to Station Eastport's Personnel Allowance List.
• Percentage of Station Eastport's crew that the proposed development will house	Depending on the final number of housing units constructed onsite (up to eight), the proposed development could house up to 38 percent of the station's crew of 21 members.
• Potential for Station Eastport members to choose to live on the economy or in the proposed housing	If the Proposed Action is executed and housing constructed, the USCG will seek to ensure that all of the housing units are occupied by members before authorizing members to live on the economy.
• Comparison of difficulty in securing housing for single USCG members or those with families	Due to the requirements of the Coast Guard Housing Manual (COMDTINST M11101.13G) with regard to the number of bedrooms needed for a given number of people, it is more difficult to secure housing for USCG members with families. For a single member, only one bedroom is required.
• The potential for an additional public comment period on the final EA	The final EA and FONSI will be available for public review and general information both online and in the same local libraries where the draft EA was made available. An additional public comment period will not be provided with the final EA.
• Publication of the notice of availability of the final EA in the *Quoddy Tides*	The notification of the availability of the final EA and FONSI will be published in the *Quoddy Tides*.
• The need to develop an Environmental Impact Statement (EIS) for the subject project	Based on the analysis performed in the draft EA and the consideration of public comments received, the USCG has determined that the project is appropriately reviewed as an EA since the Proposed Action does not present significant impacts to the environment. As such, there is no requirement to develop an EIS.
• An understanding of the USCG NEPA implementation procedures	The US Coast Guard Environmental Planning Implementing Procedures contain a lengthy list of requirements for USCG personnel to follow throughout the NEPA process and would be impossible to effectively summarize here. Those procedures are publicly available for reading via the Internet at: https://media.defense.gov/2020/Aug/18/2002479620/-1/-

Summarized Issues of Concern from Public Comments	Responses
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• Ability of the community to participate in the Federal decision-making process	The NEPA process is specifically designed to incorporate public input on Federal proposals to allow the responsible Federal agency the best understanding of local site conditions and potential concerns. By providing comments on a NEPA document, in this case an EA, during the public comment period, the citizen is performing an important role in ensuring the best planning and execution of a Federal project.

APPENDIX C

US Coast Guard Station Eastport
Housing Site Selection Background and Criteria

U.S. Coast Guard Station Eastport Housing (Site Selection Background and Criteria)

Since the early 2000s, the northern Maine area has been considered a Critical Housing Area (CHA). A CHA is a geographic area with extremely limited community-based housing, typically defined as an area with available property vacancy rates at or below three percent. In a CHA, U.S. Coast Guard (USCG) members will experience hardship in locating adequate and affordable rental housing to meet their family's needs. The housing shortage was further affirmed during an August 2014 Housing Market Survey Analysis (HMSA) of the Eastport, Maine area. In accordance with the Coast Guard Housing Manual, housing must be located within a reasonable commuting distance (RCD), defined as a drive of two hours or less, round trip during peak commute times, of the permanent duty station. When the USCG began to address the Eastport, Maine CHA, it considered three alternatives:

1) Status quo – This alternative was deemed non-viable as it did not address the CHA and the difficulty that USCG members face with regard to securing housing in the Eastport area.

2) Lease or purchase housing "on the economy" – Based on the 2014 HMSA and the 2017 CHA revalidation, it was determined that there were a very limited number of three or four bedroom homes to rent within an RCD of Station Eastport. In addition, the majority of available three or four bedroom homes for sale were determined not to meet the occupancy standards required for military housing facilities. For these reasons, this alternative was deemed non-viable.

3) Acquire buildable property and construct six three-bedroom units, two four-bedroom units, and a maintenance building – Preliminary research indicated that suitable land was available at reasonable cost within RCD of Station Eastport, within proximity to family related services such as medical facilities, schools, etc. This alternative was deemed both viable and the preferred alternative.

Once USCG Headquarters approved the preferred alternative, the USCG searched for available properties within the RCD that could meet the requirements. Upon review of available real estate listings, nine properties within RCD of Station Eastport (located in Dennysville, Pembroke, Robbinston, Eastport, and Perry) were available for purchase and evaluated further. The evaluation factors used for assessment of each of the nine properties were:

a. Wetland constraints
b. Terrain constraints
c. Cultural/historical resource constraints (including known presence of historic structures, archaeologic sites, or culturally significant items such as Native American artifacts)
d. Presence of adjacent public utilities
e. Presence of water for domestic use
f. Presence of on-site sewage disposal
g. Presence of existing structures and their condition for re-use, barring major renovations
h. Likelihood of soil contamination
i. Proximity to Station Eastport
j. Proximity to community amenities/road access

After assessment of criteria for all nine sites was completed, the USCG ranked the sites based on the assigned ratings. Six sites had criteria labeled as unsuitable for one or more factors. These sites were deemed non-viable for the proposed project and were not considered further in the site selection process. The remaining three sites were deemed viable and ranked based on the total number of favorable versus restrictive site conditions. Two sites, one of which was the 576 Shore Road site, tied with the highest rankings with only one restrictive site condition each (potential for soil contamination). The next highest scoring site was also considered, but had four restrictive site conditions: wetland constraints, terrain constraints, presence of existing structures that did not meet USCG standards for re-use, and proximity to community amenities/road access. During this process one of the two highest scoring properties was sold to another buyer, and the 576 Shore Road site in Perry was ultimately chosen for purchase. The USCG closed on the property in September 2018.

EASTPORT COMMUTE AREA

Property Comparison Matrix

	576 Shore Road, Perry, ME	Property 2 Eastport, ME	Property 3 Perry, ME	Property 4 Perry, ME	Property 5 Perry, ME	Property 6 Dennysville, ME	Property 7 Pembroke, ME	Property 8 Robbinston, ME	Property 9 Perry, ME
Wetland Constraints	Approximately 35 acres adjacent to Shore Road appear dry and well-drained. Wetlands noted on western half of property. No coastal wetlands present.	Approximately 3-4 acres of site appear wet and low-lying, leaving little room for development.	Approximately 15-20 acres adjacent to Shore Road appear dry and well-drained. Wetlands are noted on the western side of property. No coastal wetlands are present.	A stream running through the west side of property is likely to cause setback constraints that result in about 4 undevelopable acres.	Several extensive freshwater wetland and stream features are present onsite. Site is located on Passamaquoddy Bay, so coastal zone setbacks will be required. These features likely leave little room for development.	A stream and obvious wetlands are present and crossing at least 2 of 6 lots. Much of the site is not developable.	The site appears to have very shallow groundwater and several obviously swampy areas. The property lies adjacent to the coastal shoreline of Cobscook Bay, so coastal setbacks will be required.	The property lies adjacent to Passamaquoddy Bay, so coastal setbacks will be required. No freshwater wetlands were evident on-site.	The site contains a vernal pool, is adjacent to a freshwater lake, and a stream runs across the property, greatly limiting the developable area.
Terrain Constraints	The majority of the site is being used as pasture and is very level.	Approximately 4-acre portion of the property is adjacent to a coastal cliff, resulting in safety concerns for children.	The majority of the site has been cleared for agriculture and is mostly level.	The site contains mostly level terrain with some slopes. A large portion of the property is cleared.	The area adjacent to Devereaux Road gently slopes toward the bay. The site is mostly wooded with some rolling hills. The terrain is not ideal, but the site is developable.	The site is heavily wooded with uneven lots. At least one lot is undevelopable due to slope.	The site is a partially cleared wooded lot with very few mature trees. The site is mostly flat with a gentle slope toward the bay.	The terrain of the site consists of significant slopes.	The site contains a pasture field adjacent to the road. The majority of the site, however, is wooded and slops gently toward a lake.
Cultural/Historic Resource Constraints	No obvious issues observed.	An 1800s-era house with 2 barns are present and would require demolition. Consultation with State Historic Preservation Office would be required.	No obvious issues observed. Demolition of existing farmhouse would not be anticipated given its condition.	No obvious issues observed. The existing house is not historic (built in 1985).	No obvious issues observed.	No obvious issues observed.	No obvious issues observed.	No obvious issues observed.	No obvious issues observed.
Presence of Adjacent Utilities	All utilities are available adjacent to the public road.	All utilities are available adjacent to the public road.	All utilities are available adjacent to the public road.	All utilities are available adjacent to the private road.	All utilities are available adjacent to the public road.	Pole-mounted utilities are available to the site.	Pole mounted utilities currently extend through center of the lot to the existing house.	Pole-mounted utilities are available to the site.	Pole-mounted utilities are available to the site.

Presence of Domestic Water	Multiple on-site wells are present.	One on-site well is present.	One on-site well is present.	One on-site well is present.	One on-site well is present	Site is undeveloped. No well is present.	One on-site well is present.	Site is undeveloped. No well is present.	Site is undeveloped. No well is present.
Presence of On-Site Sewage Disposal	On-site septic system is present.	On-site septic system is present.	On-site septic system is present.	On-site septic system is present.	On-site septic system is present.	Site is undeveloped. No on-site septic system is present.	On-site septic system is present.	Site is undeveloped. No on-site septic system is present.	Site is undeveloped. No on-site septic system is present.
Presence of Existing Structures	A 1960s-era 4 bedroom colonial residential with 3 barns and outbuildings are present. House is in good condition with some updating needed.	An 1800s-era house and 2 barns would need substantial work to meet USCG building/housing standards. Demolition would be likely.	An 1830s-era farmhouse with 3 barns and outbuildings are present. House is in good condition with many recent renovations.	An on-site house is present and has been renovated, possibly meeting USCG housing standards.	The on-site house is in unusable condition and must be demolished, along with several collapsed outbuildings. Debris is visible in piles.	No existing structures are present on-site.	A small 1960s-era house is present, but not likely usable for USCG development.	No existing structures are present on-site.	No existing structures are present on-site.
Likelihood of Soil Contamination	Agricultural history may have resulted in pesticide impacts. Lead based paint likely present in and around house.	Lead paint issues in soil around buildings are extremely likely due to the age of the structures.	Agricultural history may have resulted in pesticide impacts. Lead based paint likely present in and around house.	Soil contamination is not likely. Property was not used for agricultural purposes and house was built after lead based paint ban.	Some solid waste piles are present, agricultural history of the site is unknown, and lead paint contamination is possible.	The site is undeveloped. As a result, no potential sources of contamination have been identified.	Lead paint issues in soil around house are possible, but are not anticipated to be extensive.	The site contains no obvious sources of potential contamination.	The site contains no obvious sources of potential contamination.
Proximity to Station Eastport	One-way driving time to station is estimated at 14 minutes.	One-way driving time to station is estimated at 8 minutes.	One-way driving time to station is estimated at 14 minutes.	One-way driving time to station is estimated at 13 minutes.	One-way driving time to station is estimated at 19 minutes.	One-way driving time to station is estimated at 35 minutes.	One-way driving time to station is estimated at 26 minutes.	One-way driving to station is estimated at 27 minutes.	One-way driving to station is estimated at 21 minutes.
Proximity to Community Amenities/Road Access	Property is located near elementary school, on school bus route, in residential area, and on paved public road maintained by the Town of Perry.	Property is located near elementary school, on school bus route, in residential area, and on paved public road maintained by the Town of Perry.	Property is located near elementary school, on school bus route, in residential area, and on paved public road maintained by the Town of Perry.	Property is located near elementary school, on school bus route, in residential area, but on an unpaved private road (which is included for sale).	Property is located near elementary school, on school bus route, in residential area, and on paved public road maintained by the Town of Perry.	Proximity from site to school is unknown. The site is located on a privately owned unpaved road next to a cemetery.	Proximity from site to school is unknown. The site is located in a residential neighborhood.	Proximity from site to school is unknown. The site is located in a residential neighborhood.	Proximity from site to school is unknown. The property is located in an extremely remote rural area.

APPENDIX D

Site Evaluation Report

U.S. COAST GUARD EASTPORT HOUSING
FINAL SITE EVALUATION REPORT

CONTRACT NUMBER: 70Z05018DAMFWHD02
Task Order 70Z04719FPEPTEV00

Prepared For:

U.S. Coast Guard

Prepared By:

Amec Foster Wheeler HDR
JOINT VENTURE

August 12, 2019

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Project Number: 335000007

August 12, 2019

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Contaminated Material
ASTM	American Society for Testing and Materials
bgs	below ground surface
CDD	Construction Demolition Debris
CES	CES, Inc.
EPH	Extractable Petroleum Hydrocarbons
gpm	gallons per minute
HMA	Hazardous Materials Assessment
IPaC	Information for Planning and Consultation System
LBP	Lead Based Paint
MEDEP	Maine Department of Environmental Projection
mg/kg	milligram per kilogram
mg/liter	milligram per liter
ug/liter	microgram per liter
MNAP	Maine Natural Areas Program
MCL	maximum contaminant level
MDOT	Maine Department of Transportation
NEPA	National Environmental Policy Act
NIA	Nitrate Impact Assessment
NRCS	Natural Resource Conservation Service
NRPA	Natural Resource Protection Act
NWI	National Wetland Inventory
RAG	Remedial Action Guidelines
RQD	Rock Quality Designation
SF	square foot
Shannon	Shannon Water Well Drilling
Site	576 Shore Road, in Perry, Maine
SPT	Standard Penetration Test
SVOC	Semi Volatile Organic Compound
USCG	U.S. Coast Guard
USCS	Unified Soil Classification System
USFWS	U.S. Fish and Wildlife Service
VPH	Volatile Petroleum Hydrocarbons
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

The Amec Foster Wheeler HDR Joint Venture has been retained by the U.S. Coast Guard (USCG) to provide architectural and engineering services to evaluate site conditions and prepare National Environmental Policy Act (NEPA) documentation for developing 4 duplexes, or 7 single family houses, a maintenance building, a community building and associated infrastructure for USCG Station Eastport, on a 75-acre parcel in Perry, Maine (**Figure 1**).

2.0 SCOPE OF WORK

This project consisted of eight tasks, the results of which are presented in this report. Conceptual layout plans for the two different development scenarios in the eastern (front) field portion of the site are presented. These conceptual layouts are based on the field data collected, site conditions observed, the property survey, zoning and other regulatory constraints. The zoning and regulatory requirements are preliminary and will need to be confirmed during the design and permitting phase.

TASK 1: SUBSURFACE WASTEWATER DISPOSAL EVALUATION

Charles Lyman, CWS, LSE, Maine Licensed Site Evaluator, conducted an evaluation of the proposed development for suitability for subsurface waste water disposal. On June 3 and 4, 2019, 24 test pits were excavated to describe soils and evaluate the presence of limiting factors including, seasonally high water table, restrictive layers and/or bedrock. The location of the test pits are shown on **Figure 2.** The logs for the 24 test pits are included in **Appendix A**. The soils on site have been mapped by the Natural Resource Conservation Service (NRCS) as Creasey Soil Series. Creasey soils are shallow soils formed in glacial till derived from red sandstone bedrock and are somewhat excessively drained. The soils observed on site are consistent with the NRCS mapped soils.

The soils within the area proposed for development meet the minimum drainage requirements for subsurface waste water disposal. The 1C soils observed had evidence of seasonally high water table and restrictive layer that varied from 15 to 42 inches below ground surface (bgs). Subsurface septic system sizing (i.e., septic tank volume and disposal field size) is based on the number of bedrooms in a house. The development scenarios include duplex housing units, 3 and 4-bedroom single-family residences, a maintenance building and community building. The duplexes would require a 1000-gallon septic tank for each unit in the duplex, followed by a single disposal field sized to accept waste water from both units. A duplex with two 3-bedroom units would require a 2,400 square foot (SF) stone and pipe disposal field, and a duplex with two 4-bedroom units would require a 3,000 SF disposal field. The system for the single-family residences would require a minimum 1000-gallon septic tank and depending on the number of bedrooms would require a 1,200 SF or 1,500 SF disposal field, for 3-bedroom and 4-bedroom, respectively. The proposed maintenance building and community building would be serviced by a single disposal field and each building would require a minimum 1000-gallon septic tank. The maintenance building and community building disposal field would be 700 SF. The size of the fields may be reduced by utilizing proprietary devices in constructing the disposal field, as described in the Maine Subsurface Disposal Rules.

For the site evaluation report the maximum number of duplexes has been reduced to four and the maximum number of and single-family units has been reduced to eight. To meet the proper set back distances from wells, structures, lot lines and protected natural resources it appears that the front field portion of the site can accommodate four duplexes and seven single family units along with the community center and maintenance buildings. **Figure 3** and **Figure** 4 show conceptual layouts for the two development scenarios. It is understood that the USCG wants septic systems to be gravity fed and for the duplex scenario it is likely that this can be achieved. However, based on site conditions it is likely that one of the proposed single family residences would require a pump system. There is adequate reserve area on each lot for a replacement disposal field, as required by the Town's shoreland zone ordinance. Although the disposal systems are shown on these figures, the location and dimensions shown are for planning purposes only. A proper site evaluation and design by a licensed Site Evaluator for each duplex unit and single family residence would be required prior to constructing the systems.

Nitrate Impact Assessment

Because the duplexes or residences would be served by individual drilled bedrock water supply wells, Wood completed a Nitrate Impact Assessment (NIA) for the two development scenarios being contemplated. The objective of the NIA is to demonstrate, using site specific and literature information, that subsurface wastewater disposal at the subdivision will not cause an exceedance of the drinking water standard for nitrate nitrogen of 10 mg/liter in groundwater at water supply wells or at abutting private properties. A summary of site hydrogeologic conditions is provided below followed by supporting calculations that were completed for the NIA.

Site topography is gently sloping from an elevation of approximately 130 feet (NAVD 88) at the west end of the proposed development area, to elevation 90 feet or less along Shore Road. A large wetland is located west of the developed area which drains easterly along the north and south side of the property in intermittent streams that outlet through culverts beneath Shore Road.

The westerly rear portion of the parcel is undeveloped. Two existing unoccupied dwellings and accessory structures are present on the portion of the site to be developed, along with two existing wells and a man-made farm pond along the northerly property line. There are no dwellings abutting the north or south side of the parcel or downgradient across Shore Road.

Based on the on-site soil survey described above the site is underlain by Creasey soils consisting of gravelly silt loam which are less than 4 feet thick. The on-site geotechnical borings (describe below) encountered similar soil conditions. Bedrock consisting of pebble conglomerate, sandstone and siltstone was encountered at depths of 2 to 4 feet bgs. These conditions are consistent with those mapped by Maine Geological Survey.

The shallow and relatively consistent depths to bedrock across the site indicate that that the bedrock surface likely follows that of ground surface topography.

Based on observed soil conditions and groundwater elevation measurements at three drilled wells that were installed for this project and at two existing wells, groundwater flow beneath the site is expected to occur largely through the fractures in the bedrock. The soil evaluation and geotechnical borings indicate groundwater is present only seasonally above the bedrock surface in the thin soils. Groundwater flow beneath the central and eastern portions of the site is to the east. However, in the northwestern portion of the site groundwater is interpreted to flow northerly down slope to the adjacent wetlands near the northern side line of the site (see **Figure 2**).

Based on soil types and slopes, approximately 12 inches per year of precipitation is estimated to recharge the groundwater system.

For the purpose of calculations, the upper bedrock permeability was assumed to be 1.4 feet per day. This value is believed to be representative of (if not lower than) the permeability for the Creasy soils at the site.

Calculations completed for the NIA are provided in **Appendix B-1.** Calculations consider the above hydrogeologic conditions, wastewater flows and disposal field dimensions, and estimate the length of individual nitrate plumes. The results of the calculations were used to layout out conceptual nitrate plumes so they would not impact possible locations for drilled bedrock water supply wells, or cross the downgradient subdivision property line at a concentration above the 10 mg/liter nitrate drinking water standard. Nitrate in wastewater, lawn fertilizer, precipitation and background groundwater is summed and divided by the total of wastewater, precipitation and influent groundwater flows.

Results of calculations are presented on **Figure 5** for the duplex scenario, and on **Figure 6** for the single family houses scenario.

At the lots along the northerly portion of the site, nitrate plumes are interpreted to flow toward and discharge to the adjacent wetlands. At these locations for both the duplex and single family scenarios, shorter nitrate plumes have been calculated based on a wetland nitrogen removal factor. Nitrogen removal from secondary wastewater effluent in natural wetlands has been reported by the Environmental Protection Agency to range from 40 to 90 percent (Design Manual for Constructed and Aquatic Plant Systems for Municipal Wastewater Treatment). Research in Canada reported nitrate removal of 95 to 99 percent upon discharge from groundwater to a stream (Groundwater Journal, January/February 1991). Based on these studies a nitrogen removal factor of 40% was used in the calculation for the lots on the north side of the site.

Based on **Figures 5 and 6** and supporting calculations in **Appendix B-1**, both development scenarios are expected to be feasible without causing exceedances of nitrate at drilled bedrock wells or at abutting properties.

TASK 2: GROUNDWATER SUPPLY STUDY

Three bedrock test wells were installed at locations shown on **Figure 2,** to evaluate well yields and water quality at the site. Wood contracted with Shannon Water Well Drilling (Shannon), located in Machias, Maine to drill and conduct pumping tests on each of the wells. Shannon is a Maine licensed well driller (License # WDC0144). Chris Getchell was the driller. Jerry Rawcliffe, a senior geologist with Amec Foster Wheeler HDR JV, provided drilling oversight, logging, conducted specific capacity testing and collected groundwater samples from the wells.

Well Installation

Each well was installed as an open hole bedrock well with the surficial overburden and shallow bedrock cased off with 6-inch inside diameter steel well casing. Bedrock was encountered from 1.5 to 3 feet bgs and 40 feet of steel casing was seated into bedrock to a depth of approximately 38 feet bgs at each location. Once the casing was installed an air hammer was used to advance a 5 7/8 - inch borehole to depths of 320 feet bgs (MW-1), 321 feet bgs (MW-2), and 401 feet bgs (MW-3). Drilling logs for each of the new wells are presented in **Appendix B-2**. As the boreholes were advanced water bearing fractures were identified when encountered and preliminary yield tests were performed by pumping of the well and estimating the gallons per minute (gpm) yield from the fracture with a bucket and watch. Interim yield tests were conducted at 121 feet bgs at MW-3 and at 261 feet bgs at MW-2. Interim yield testing at MW-3 showed no detectable flow from the borehole. The test at MW-2 showed an estimated yield of

1.4 gpm.

Maine Well Drillers and Pump Installers Rules (Code of Maine Regulations Chapter 232) for establishing minimum yields for single family homes were used as a guide for terminating the boreholes. Since the proposed construction may consist of duplexes the recovery rates listed in **Table 1** were doubled as an estimate for terminating the boreholes.

Specific Capacity Pumping Tests

Based on the results of the drilling and preliminary yield testing, short term (4 to 4.5 hour) specific capacity pumping test were completed on each well. The groundwater level drawdown was measured during the test and the groundwater recovery was measured for up to 4 hours after turning off the pump. The specific capacity tests were started at the rate measured during the preliminary yield tests conducted upon completion of each borehole. In MW-3 the initial pumping rate was set at about 1.5 gpm and the water level drawdown was monitored for approximately 2 hours. The rate was then increased to approximately 1.8 gpm and the water level drawdown was monitored for an additional 2 hours. Once the pump was shut down the water level recovery was monitored for 2 hours. The specific capacity testing was conducted similarly at MW-1 and MW-2. The initial pumping rate at MW-1 was approximately 3.0 gpm. The rate was increased to approximately 6.2 gpm after 2 hours and purging continued for another 2 hours. After the pump was shut down the static water recharge was monitored till it was approaching the original static level. The initial pumping rate at MW-2 was approximately 2.6 gpm. After roughly 2 hours the rate was increased to approximately 5.3 gpm and the well was pumped for an additional 2 hours. After the pump was shut down the static water recharge was monitored till it was approaching the original static level. These data were used to assess the ability of the individual bedrock water supply wells to adequately supply the multiple house development scenarios or whether an alternative approach is needed. Two rounds of water level measurements were collected from the five bedrock wells on site the synoptic measurements plus other water levels collected during the two weeks on site were used to determine the water levels and bedrock groundwater flow directions across the site.

Results of the specific capacity testing described above are presented graphically in **Appendix B-3**. The hydrographs show the drop in water level due to pumping at each well, including the effects of increased pumping rates during testing. Also shown are the recovery data collected following pump shut down. While the pumping rates and observed drawdown are an indication of short term potential well yield, recovery data after the pump was turned off was used to calculate a yield for each well. Recovery data can provide a better indication of actual well yield because these data represent only groundwater flowing into the well whereas shorter term pumping test can be influenced by water storage in the well casing.

Based on the data collected, the following well yields are estimated for the wells at the site, assuming 50 to 100 feet of drawdown:

- MW-1 – 2.4 gpm
- MW-2 – 2.1 gpm
- MW-3 – 0.89 gpm
- Existing Well 1 = 2.1 gpm
- Existing Well 2 = 1.6 gpm

Based on a comparison of these yields to the minimum well recovery rates (well yields) presented in **Table 1** indicates the following:

- MW-1: 320 feet deep – adequate yield for a duplex or single family home
- MW-2: 321 feet deep – adequate yield for a duplex or single family home
- MW-3: 401 feet deep – adequate yield for a single family home
- Existing Well 1: 97 feet deep – below recommended yield
- Existing Well 2: 360 feet deep – below recommended yield for duplex, adequate yield for single family home

These test results indicate that it is likely that individual bedrock wells drilled to an appropriate depth will yield an adequate water supply for either duplex or single family homes built on the site.

Groundwater Sampling and Analysis

Following the specific capacity testing, groundwater samples were collected from each of the three wells. Samples were collected from the two existing on-site wells during the first week by purging the wells using the existing pumping systems in place and collecting grab samples after the wells had recharged. Samples from the new wells were collected using low flow sampling procedures. Field Data Records for the Low Flow sampling are presented in **Appendix B-4**. Samples were submitted to Katahdin Analytical Laboratory, Westbrook, Maine, a Maine-certified laboratory. Samples were be analyzed for the parameters listed in **Table 2.**

The groundwater analysis results are presented in **Table 3** and laboratory reports are provided on CD in **Appendix E**. At one location (Existing Well-1), a sample was collected analyzed for volatile organic compounds (VOCs), Extractable Petroleum Hydrocarbons (EPH) and Volatile Petroleum Hydrocarbons to determine presence/absence of fuel and/or solvent related contamination in groundwater.

Based on a review of **Table 3**, arsenic is the only parameter that exceeded the Maximum Contaminant Level (MCL) of 10 ug/liter at MW-2, MW-3 and EW-1. Arsenic is naturally present in Maine bedrock groundwater and is typically detected in the range of concentrations reported from the wells at the site (8 to 46 ug/liter). Residential water systems that are available from water treatment companies to reduce arsenic levels below MCL include reverse osmosis and ion exchange.

The elevated iron (MW-1, MW-2, MW-3) and manganese (MW-3) are also common conditions in Maine groundwater. The secondary MCL for iron and manganese is a non-enforceable guideline for taste, odor, color or staining and is not health based. These metals can also be readily moved by common water filtration systems, if needed. It is recommended that housing units be outfitted with treatment systems to remove arsenic, iron and manganese.

The Fecal Coliform result from EW-1 along with high iron and manganese are consistent with the high turbidity observed during pumping of this well and are likely related to its inactivity. It is also possible that the casing seal in this well has been compromised. Based on the shallow depth and low yield of this well it is recommended that it be property abandoned in accordance with the Maine Well Drillers Rules. In addition, any of the new wells installed or existing wells that cannot be used in the future, should be properly abandoned as part of the site development.

TASK 3: LEAD, ASBESTOS, HAZARDOUS WASTE SURVEY

CES, Inc. (CES) completed a Hazardous Materials Assessment (HMA) of the structures associated with the residential property, located at 576 Shore Road, in Perry, Maine (the Site) to identify the presence of hazardous materials on or within each of the Site structures, as well as eight identified debris piles on the Site, as shown on **Figure 7**. Work was conducted by Ms. Deb Kasik, a Maine Department of Environmental Projection (MEDEP) licensed asbestos inspector and lead risk assessor. A hazardous materials assessment was completed for each of the following structures and debris piles associated with the Site:

- Main House: a two-story wood-framed structure with a connecting mud room and an attached two-car garage and a metal roof system, built in 1968;
- Barn: a single-story wood-framed structure with a loft, built in 1968;
- Shed #1 (wood storage) – a single story wood-framed structure;
- Exterior Wood Boiler;
- Shed #2 (workshop) – a single-story metal-framed structure;
- Shed #3 – a single-story wood-framed structure;
- Shed #4 – a single-story wood-framed structure;
- Shed #5 – a single-story wood-framed structure; and
- Eight identified debris piles.

This HMA was completed to identify Asbestos-Containing Materials (ACM), Lead-Based Paint (LBP), and potential hazardous materials/wastes and universal wastes that would require special handling and disposal or would be regulated prior to/during renovations or demolition of the structures. Assessment of the structures and debris piles was conducted on June 4, 2019. **Tables 6 though Table 10** provide summaries of the sampling and testing and estimated costs for remediation. The following is a brief summary of the findings. CES's full report is included as **Appendix C**.

<u>Asbestos Containing Materials</u>

ACM present on the interior and exterior of the Site structures, as identified by CES, includes the following:

Main House:

- Bathroom sheet flooring (Sample MAIN-003A).

Laboratory analytical results did not identify asbestos-containing materials in Shed #1, Shed #2, Wood Boiler, and the Barn. The following homogenous suspect materials and associated samples, were identified on multiple buildings. The referenced samples and associated laboratory analytical results are representative of the homogeneous materials on each identified building:

- Shed #3 and Barn – corrugated roof material (refer to Sample Barn-002ABC);
- Shed #5 and Barn – asphalt roof shingles (refer to Sample Barn-004ABC); and
- Doghouse (located between the barn and shed #3) and Barn – asphalt roof shingles (refer to Sample Barn 003ABC).

Suspect materials were not identified in Shed #5 or Debris Piles #1 through 8.

The only ACM identified in the survey is the sheet flooring present in the Main House bathroom. In its undisturbed state, the material is considered to be non-friable. Removal of this material, however, will result in the rendering of this material friable and as such will require removal using full containment methods. The removal must be completed by a Maine-licensed abatement contractor, and the disposal will be as friable asbestos waste. Compliance with MEDEP Chapter 425 Asbestos Management Regulations regarding the safe removal and disposal of asbestos is required.

Hazardous Materials/Wastes and Universal Wastes

Hazardous materials/wastes and universal wastes including fluorescent light bulbs and associated light ballasts, mercury-containing thermostats, an emergency light battery and an above-ground storage tank were present in the Main House; fluorescent light bulbs and associated light ballasts were present in the barn; fluorescent light bulbs and associated light ballasts, and two gallons of motor oil were present in Shed #2 (workshop); and propane tanks were identified in both Debris Pile #3 and Debris Pile #4. Potential hazardous materials/wastes and universal wastes were not identified in Sheds #1, 3, 4, and 5 and in the remaining debris piles.

Lead-Based Paint

LBP was identified on the following surfaces, using a portable X-Ray Fluorescence Lead Paint Analyzer;

- Shed #2 (workshop) – double wood doors and the frame. LBP debris is present on the ground adjacent to this door system; and
- Debris Pile #2 - miscellaneous pieces of wood chips in the debris pile (origin unknown).

LBP was not identified on the interior and/or the exterior of the remaining structures and/or debris piles.

Should the materials identified above be impacted by planned renovations/demolition or site cleanup, removal or remediation is required prior to disturbance, in accordance with applicable State of Maine and federal rules and regulations. As long as the building components (architectural components) with lead-based paint (LBP) are removed in conjunction with a demolition or renovation project, the LBP does not have to be removed prior to demolition or renovation. The painted materials can be included in the construction/demolition debris waste for offsite disposal in a Maine-licensed Construction Demolition Debris (CDD) landfill.

TASK 4: PROPERTY SURVEY

A boundary and topographic survey has been be prepared as part of this project. It is being submitted under a separate cover.

TASK 5: CULTURAL AND NATURAL RESOURCE STUDY

Wetlands Delineation

On May 13, 14, and 15, 2019, Mr. Charles H. Lyman, New Hampshire Certified Wetland Scientist (CWS #120), conducted field work to delineate wetlands on the approximately 75-acre property. The objective of this work was to delineate wetlands and vernal pools within the subject property. During this field work three streams, three wetlands and one vernal pool complex were observed.

Wetlands were delineated in accordance with the “1987 U.S. Army Corps of Engineers Wetlands Delineation Manual” (1987 Manual) and the “Regional Supplement to the U.S. Army Corps of

Engineers Wetland Delineation Manual: Northcentral and Northeast Region" (Corps Manual Supplement). The 1987 Manual and Corps Manual Supplement provide guidance and procedures for identifying and delineating wetlands that may be subject to regulatory jurisdiction under Section 404 of the Clean Water Act (33 U.S.C. 1344), and under the Maine Natural Resource Protection Act, as the Corps method has been adopted by Maine as the accepted means for delineation of jurisdictional wetlands. Wetlands were classified using the Cowardin classification of Wetlands and Deepwater Habitats of the United States.

The streams, wetlands and vernal pool complex that were observed and delineated on the property are shown on **Figure 8.** The wetlands were flagged with pink numbered flagging and located with a GPS device capable of sub-meter accuracy. Information on hydrology, soils and vegetation was collected at a "wetland" and "upland" test plot along a transect perpendicular to the wetland boundary for the three wetlands delineated on Site (i.e., Wetlands A, B, and C). Test plot locations are shown on **Figure 8**. The completed US Army Corps of Engineers Wetland Determination Data Forms (Northcentral and Northeast Region) for Wetlands A, B, and C, are provided in **Appendix D**. Photographs of the streams, wetlands and vernal pools identified on site are also included in **Appendix D**. A "Maine State Vernal Pool Assessment Form" was also filled out for the vernal pool complex and is also included in **Appendix D**. The vernal pool complex is shown on **Figure 8**.

Wetland A

Wetland A is classified as a palustrine, scrub shrub, broad-leaved deciduous (PSS1) / palustrine, forested, needle-leaved evergreen (PFO4) wetland complex. Portions of Wetland A were mapped by the U.S. Fish and Wildlife Service - National Wetland Inventory (NWI), as shown on the attached **Figure 9,** however the streams were not. The streams were likely missed as they are small features and would not have been picked up based on the scale of NWI mapping. In addition, we flagged a larger area of wetland as compared to the NWI mapped wetlands, again due to the scale of the NWI mapping and how they delineated wetlands (i.e., through aerial photo interpretation).

The understory is dominated by alder (*Alnus rugosa*), the forested portions are co-dominated by black spruce (*Picea mariana*) and balsam fir (*Abies balsamea*) and also included red maples (*Acer rubrum*), northern white cedar (*Thuja occidentalis*) and yellow birch (*Betula alleghaniensis*). The herbaceous layer included Cinnamon and Sensitive ferns (*Onoclea sensibilis* and *Osmunda cinnamomea*), sedges, grasses and raspberries (Rubus sp.). This wetland occurs within a low-lying relatively flat area just west of the developed front 1/3 of the property. The ground surface is covered with a thick mat of sphagnum moss. The soils are composed of a thick organic horizon (i.e. 19 inches thick) overlying a thin layer of brown gravelly silt loam, which is underlain by a depleted or gleyed very firm silt loam till. The indicators of wetland hydrology observed in the wetland included quaking substrate, presence of ponded/surface water, mound and pool microtopography and water stained leaves. The water regime is seasonally flooded/saturated (E).

As shown on the Wetland Delineation Plan Wetland A extends across the entire property and is bisected by two streams (Stream A and Stream B) and includes a man-made farm pond. Although the wetland off property was not flagged it is obvious that this wetland extends to the north off property. Stream A flows from the farm pond on the northern side of the property, to the east and off property through a culvert below Shore Road. Stream B, which originates off site flows through Wetland A to the east along the southern property boundary and off property through a culvert below Shore Road. Both the stream features and Wetland A are regulated under the Maine Natural Resource Protection Act (NRPA).

Wetland B

Wetland B is also classified as a palustrine, scrub shrub, broad-leaved deciduous (PSS1) / palustrine, forested, needle-leaved evergreen (PFO4) wetland complex. A small portion of Wetland B was mapped by the U.S. Fish and Wildlife Service - NWI, as shown on the attached **Figure 9** however, based on our "on the ground" wetland delineation work we flagged a much larger area than what was mapped by the U.S. Fish and Wildlife Service.

The understory is co-dominated by alder and Winterberry (*Ilex verticilatus*), the forested portions are dominated by balsam fir and included spruce saplings, northern white cedar and red maple trees. The herbaceous layer included sensitive fern, sedges and grasses. The entire ground surface is covered in sphagnum moss. The soils are composed of a thick organic horizon (i.e., 12 inches thick) overlying firm brown gravelly loamy coarse sand till. The hydrology indicators included presence of ponded surface water, saturation, mound and pool microtopogaphy, drainage patterns, and moss trim lines. The water regime is seasonally flooded/saturate (E).

As shown on the Wetland Delineation Plan **(Figure 8)** Wetland B occupies a low-lying area within the central portion of the property. Wetland B, similar too Wetland A continues off property to the north.

Wetland C

Wetland C is classified as a palustrine, forested, needle-leaved evergreen (PFO4) wetland. The NWI has mapped this area as wetland **(Figure 9)** and as noted above our "on the ground" delineation provides a more detailed delineation of the wetlands on site.

Wetland C has "bog" characteristics with a thick quaking organic substrate, dominated by northern white cedar, balsam fir and black spruce. Subordinate tree species included red maple and yellow birch. The understory included winterberry shrubs and balsam fir and cedar saplings. The herbaceous layer in Wetland C included sparse sensitive fern and cinnamon fern and sedges. The entire ground surface is cover with sphagnum moss. The soils are composed of a very thick organic peat greater than 4 feet thick, mineral soil was not encountered within 4 feet of the ground surface, the limit of our observations. The indicators of hydrology include surface water, high water table, saturation, water stained leaves, and microtopographic relief. The water regime is saturated (B).

As shown on the Wetland Delineation Plan **(Figure 8)** Wetland C occupies a low-lying area along the back of the property. Wetland C also continues off site to the north, west and south. Wetland C is a peatland and would be considered a Wetland of Special Significance under NRPA definitions.

Streams

As noted above three streams were identified on site (i.e., Streams A, B and C). Stream A originates in Wetland A and flows to the east. The stream channel ranges from 1 to 2 feet wide and 1 to 6 inches deep and flows within 1 to 2-foot deep natural channel. A man-made farm pond is located within Wetland A and was formed by installation of an earthen dam across this feature. Stream A is well entrenched and flows through upland, no bordering wetlands were observed along the stream below the farm pond. The bottom substrate is made up of a mix of boulder, cobble, gravel and sand parent material and aquatic fauna (macroinvertebrates) and aquatic fauna (hydrophytes) are present, which would make this feature a NRPA regulated stream.

Stream B originates off site to the south and flows the property and parallels the southern property boundary to the east and off site through a culvert below Shore Rd. This stream is larger than Stream A (i.e., 2 to 5 feet wide and 1 to 12 inches deep) and would likely flow at least 6 months out of the year. The substrate is composed of parent material including boulder, cobble, gravel and sand. The bottom is scoured and includes riffle and pool habitat. This stream contains aquatic fauna (macroinvertebrates) and aquatic fauna (hydrophytes). Based on these features and conditions this stream is an NRPA regulated stream.

Stream C which originates in Wetland C flows off site to the north, with only a small portion of the stream occurring on the site. This feature is similar in size to Stream A, but is not as deeply entrenched, which is likely due to it flowing through a much flatter area as compared to Stream A (i.e., 10 percent slope). The bottom substrate is mostly composed of sand and mucky organic material and included areas that were obviously scoured indicative of significant flows. This stream contained aquatic fauna (macroinvertebrates) and aquatic fauna (hydrophytes) and would therefore be an NRPA regulated stream.

Vernal Pool Complex

Within Wetland C several areas of ponded water were observed that are functioning as vernal pool habitat and are shown on **Figure 8**. Based on their proximity we are considering them one feature. The pools do not appear to be naturally occurring but appear to have been excavated, based on their squared off shapes. Regardless of their origin, obligate vernal pool species were observed in the pools (i.e., spotted salamander eggs). As noted on the vernal pool assessment form, the number of egg masses observed elevates this feature to a significant vernal pool under NRPA regulations. A second visit to the vernal pool complex was conducted on June 4, 2019. The results of the second site visit corroborated the results of our initial site visit.

Conclusions

Alteration of the wetlands, streams or their regulated buffers would require a permit from the State and alteration of wetlands and or streams would require a permit from the Army Corps of Engineers. However, it is unlikely that development of the property for the proposed Coast Guard housing would impact wetlands on the site, as there is ample land area on site outside of these sensitive areas. Regarding the significant vernal pool identified on site, it is unlikely that this feature would be impacted or have an impact on the development, as the vernal pool is located over 1500 feet away from the area on site proposed for development.

Endangered Species & Critical Habitat

An evaluation of the site was conducted to determine if endangered species or critical habitat as defined by federal and state regulations including the Migratory Bird Treaty Act, Endangered Species Act, State of Maine Endangered Species Act, and the Maine Natural Areas Program (MNAP) were present. The evaluation included sending consultation letters to the U.S. Fish and Wildlife Service (USFWS) and the MNAP, a review of information available through the Maine Office of GIS, and a general reconnaissance of the property.

The request to the USFWS was submitted on-line through their Information for Planning and Consultation System (IPaC) on May 16, 2019. Two response letters were received (IPaC Review and Verification letters) which are included in **Appendix D**. The IPaC system identified the “threatened” northern long-eared bat (*Myotis septentrionalis*), as potentially occurring on the site. No critical habitat for the bat (i.e. hibernacula) was identified within the project area. The long-eared bat occurrence on the site would likely be during the summer months, and any impacts could be avoided by limiting tree removal to the time of year when bats are absent. A letter was sent to the MNAP on May 17, 2019 requesting an Environmental Site Review, and a response was received on June 6, 2019. Their review did not identify any known populations of Rare and Exemplary Botanical Features on the site, however they did identify one sedge species (*Carex waponahkikensis*) occurrence within 4-miles of the site. The MNAP also noted that the lack of additional occurrences in the area is likely due to limited resources for field survey. In addition to the on-line request for information and letter responses, a Threatened/Endangered Species Concurrence letter was sent to the USFWS on July 3, 2019, and is included in **Appendix D3**. Based on our findings, we concluded that the project will not impact threatened and or endangered species and requested concurrence from the USFWS regarding those findings.

A search of the data available on Maine GIS was conducted on April 25, 2019. The only critical habitat identified in the vicinity of the property was Tidal Waterfowl and Wading Bird Habitat, which occurs along the rocky shore approximately 750 feet overland, southeast of the site. There were no R, T & E species identified on the Site in Maine GIS.

A thorough reconnaissance of the site was conducted while delineating wetlands on May 13, 14, and 15, 2019. The site includes two general habitat types developed/old field (approximately 1/3 of property) and forested (approximately 2/3 of the property). The developed/old field habitat occurs in the front of the property along shore road and is mostly fallow pasture land. The back 2/3 of the property is fir/spruce dominated forest and includes scrub/shrub dominated wetlands and several small streams. Both of these habitat types are common in the area. Birds protected under the Migratory Bird Treaty Act (i.e., bald eagles, passerine birds) were observed using and or flying by the site.

A review of Maine's Endangered and Threatened Species (last revised October 15, 2015) is included in **Appendix D**. We did not observe any endangered species or state specific critical habitat on site. For the most part, either the habitat for listed species was lacking or the site is well outside any known occurrences or range. As noted above the MNAP identified the occurrence of a Rare and Exemplary Botanical Feature within 4-miles of the site. The site includes habitat that is suited for the sedge species (*Carex waponahkikensis*), at the time of our site visit this plant was not observed, however the characteristics to identify this plant to species level were not present (i.e., flowering seed heads). The MNAP suggests that an inventory of the site be conducted to identify undocumented rare features in order to avoid inadvertently harming protected plant species.

Cultural Resources Study

Gray & Pape, Inc., of Providence, Rhode Island, conducted a preliminary cultural resources investigation and sensitivity designation for the 75-acre property located at 576 Shore Road, in the Town of Perry, Maine. The purpose of the study was to assess the effects a planned residential development, by the United States Coast Guard, may have on the human environment and historic resources, in compliance with the National Environmental Policy Act and the National Historic Preservation Act. This study contains background environmental and literature information for the Project area and includes an initial reconnaissance of the property. The study develops a land-use history of the parcel and an archaeological sensitivity model for both pre-Contact Native American and post-Contact archaeological sites and identifies potentially interested parties. The results of the investigation are provided below and the full report is included in **Appendix D.**

In June 2018, Gray & Pape, Inc., conducted an initial pedestrian reconnaissance of the Project area. The parcel is located on the west side of Shore Road approximately 1.4 miles from the intersection of Route 1 and Shore Road. The parcel is bounded to the west, north, and south by forested lots. The eastern part of the parcel contains several disused pastures and a grouping of late twentieth century structures. The wooded area of the parcel contains three streams, three wetlands, and one vernal pool complex. One historical scatter, an early twentieth-century trash dump, was identified during the reconnaissance.

Regional pre-Contact documentary evidence indicates that while Native American groups had a strong presence in the region around Passamaquoddy Bay, they may have only utilized the Project area for short periods to access the resources associated with the streams and wetlands it contains. Post-Contact period occupation of the project area likely began sometime in the early to mid-nineteenth century, after overland transportation and local road networks to the Project area were established. At least two historical occupations appear to have occurred within the site, likely relating to small family agricultural lifeways. Of small note is that one of the historical occupations was a Town Farm. No previously recorded archaeological sites or cultural resources were identified within the proposed Project area.

Gray & Pape, Inc., presents a sensitivity model, based on the data present within this report, for the possible location of both pre- and post-Contact archaeological sites. Gray & Pape, Inc., recommends a Phase IA archaeological reconnaissance survey be completed for the Project area to help revise the sensitivity models. Based on these results, additional Phase IB archaeological investigation may be warranted. These recommendations are subject to Maine State Historic Preservation Office (SHPO) review and concurrence and may or may not be required. Gray & Pape, Inc., finds no historical importance associated with any of the extant structures within the Project area and recommends no further work associated with these structures.

TASK 6: NEPA ENVIRONMENTAL ASSESSMENT

An Environmental Assessment Report is being prepared and will be submitted under separate cover.

TASK 7: ENVIRONMENTAL SOIL SAMPLING AND ANALYSIS

On June 4, 2019 we collected 10 surface soil samples for chemical analysis from the area within the property where development is proposed. A list of the soil samples that were collected and the chemical analyses performed are presented in **Table 9**. The surface soil sample locations are shown on **Figure 2**. The surface soil samples were submitted to Katahdin Analytical Laboratory, Westbrook, Maine, a Maine-certified lab. The analytical results are tabulated in **Table 10.** The electronic data deliverable from the lab is included on a CD in **Appendix E**. Surface soil samples were analyzed for VOCs, semi volatile organic compounds (SVOCs), Volatile and Extractable Petroleum Hydrocarbons (VPH and EPH), Pesticides, Herbicides, and Metals by Katahdin Analytical. Sample locations SS-2, SS-3, SS-4, and SS-9 were collected from the perimeter of the area on the property proposed for development and represent background locations. Sample locations SS-1, SS-5, SS-6, SS-7, SS-8, and SS-10 were selected based on physical observations of potentially contaminated areas within the developed portions of the property (i.e. around buildings, barn yard, and debris piles). Sample SS-1, SS-5, and SS-6 were collected in the vicinity of the existing barn. Sample SS-7 and SS-8 were collected from two debris piles observed north of the site. SS-7 was collected from an ash pile that appeared to be wood ash from the outdoor wood furnace. SS-8 was collected from a rock and soil pile. Sample SS-10 was taken next to an outbuilding/shop, where a pump-up sprayer was observed.

All of the samples were collected from within 3 to 12 inches of the ground surface and primarily consisted of reddish brown gravelly loamy sand (except for SS-7), which was composed of primarily ash with trace mineral soil and gravel material). Any organic duff or thatch layer, when present was removed prior to collecting a sample.

All of the surface soil samples were analyzed for the Resource Conservation and Recovery Act (RCRA) 8 metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Arsenic was detected in all samples except SS-7. Concentrations of arsenic in the background samples ranged from 13.4 mg/kg to 16 mg/kg. The concentration of arsenic in the other samples ranged from 6.99 mg/kg to 18 mg/kg. The MEDEP-APP 2 Final- Remedial Action Guidelines (RAGs) residential soil value for arsenic (9.3 mg/kg) was exceeded in all but one of the samples (SS-6) collected. Although arsenic was detected throughout the site, the detected concentrations are consistent with and most likely attributable to naturally occurring arsenic. The MEDEP RAGs include a “Maine Background” value for arsenic of 16 mg/kg, which is consistent with the arsenic concentrations detected on the property. None of the other metals detected in surface soil, were at concentrations that exceeded the RAGs for residential or construction worker scenarios.

SVOCs were analyzed in three samples; SS-6, SS-7, and SS-10. SVOCs were non-detect at locations SS-6 and SS-10. All SVOCs analyzed for at SS-7 were detected and benzo(a)pyrene was detected at four and half times the residential exposure RAG. The ash pile would exempt from remediation, under MEDEP Hazardous Waste regulations, since it was derived from the burning of wood. However, the ash contains benzo(a)pyrene at concentrations above MEDEP RAGs for residential use so, it may be prudent to remove and dispose of the ash, as best practice, to eliminate any chance of future exposure to these compounds. This work could be accomplished during the demolition of the structures and removal of other debris piles. The ash pile is approximately 10 feet wide by 30 feet long by 3 feet tall (approximately 34 cubic yards) and could be disposed of off-site, locally, in a Maine Licensed Construction Demolition Debris (CDD) landfill in accordance with MEDEP and local regulations. EPH and VOCs were analyzed for at sample locations SS-1, SS-6, and SS-10.

EPH and VOCs were detected at all three locations sampled. Concentrations were orders of magnitude below the residential and construction worker RAGs.

Pesticides and herbicides were analyzed for in four samples; SS-1, SS-6, SS-7, and SS-10. Neither were detected at sample locations SS-6 and SS-10. At sample location SS-1 one pesticide, methoxyclor was detected 0.0068 mg/kg, which is several orders of magnitude below the residential and construction worker RAGs. Several pesticides (4,4’-DDD, 4,4-DDT, and delta BHC) and two herbicides (2,4-DB and DINOSEB) were detected at sample location SS-7, however the trace concentrations are orders of magnitude below the RAGs.

TASK 8: GEOTECHNICAL INVESTIGATION

The components of the recently completed geotechnical boring and laboratory testing programs are described in the following sections. Preliminary geotechnical recommendations, based on available site-specific information and our assumptions related to site development, are also provided for planning and costing purposes and are not meant for use for design or construction. When more detailed and/or finalized site development plans (i.e., grading, cut/fill, drainage, layout, structural loading, etc.) are available, a final geotechnical evaluation can be completed and will provide design and construction recommendations.

Geotechnical Borings

Amec Foster Wheeler HDR Joint Venture completed five geotechnical borings, designated B-1 through B-5, at the Site from June 12 to 13, 2019. Boring locations were selected in relation to existing site features and under the constraints of drill rig access and utility conflicts. Since a final site development plan was not available at the time of implementation of the geotechnical borings, the five borings were widely spaced across the Site to assess general spatial variability of subsurface conditions. The as-drilled geotechnical boring locations are depicted in **Figure 2**.

An Amec Foster Wheeler HDR Joint Venture geotechnical engineer directed the drilling operations at the borings, collected soil samples and bedrock cores, and logged subsurface conditions encountered. New England Boring Contractors Inc. of Hermon, Maine provided drilling services using a track-mounted Mobile B-53 rig. The drilling was performed via rotary-wash methods using 3-inch inside diameter flush-joint steel casing. The borings were drilled to depths ranging from 3.0 to 4.0 feet bgs before bedrock coring was performed. As each boring was advanced, Standard Penetration Tests (SPTs) were performed at continuous intervals until split-spoon refusal was encountered (i.e., 25 blows for 1-inch or 50 blows for 6-inches of penetration or less). SPTs were performed in general accordance with ASTM D 1586, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils. Soil samples were described using procedures outlined in ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Representative soil samples were sealed in glass jars and returned to the office for further review, classification, and submission/shipment to the geotechnical laboratory for testing.

Upon encountering refusal to further penetration of the split-spoon sampler, bedrock coring was performed at each boring location in general accordance with ASTM D 2113, Standard Practice for Rock Core Drilling and Sampling of Rock for Site Exploration, using 3-inch diameter steel casing and an NQ2-sized double-tube core barrel equipped with a diamond impregnated cutting shoe. Coring of 4.0 to 6.5 feet was performed, extending the total boring depths to 7.7 to 9.5 feet bgs.

Upon completion of drilling, the water level in each boring was measured and each boring was backfilled to ground surface with bentonite chips. A detailed record of the drilling, testing, and sampling performed is provided on the Geotechnical Boring Records presented in **Appendix F**.

Geotechnical Laboratory Testing

Amec Foster Wheeler HDR Joint Venture subcontracted GeoTesting Express (GeoTesting) of Acton, Massachusetts to conduct geotechnical laboratory testing of representative soil samples selected from the geotechnical borings by Amec Foster Wheeler HDR Joint Venture. The following tests were performed:

- Moisture content determinations (ASTM D 2216) (7-tests);
- Organic content determinations (ASTM D 2974) (1-test);
- Particle-size analyses - washed sieve only (ASTM D 6913) (6-tests).

Geotechnical laboratory testing was performed in accordance with the referenced ASTM standards. The testing results are summarized in the following section. Individual test reports are provided in **Appendix F**.

Subsurface Conditions

The following sections describe the subsurface conditions encountered during the geotechnical borings, including test results that were obtained from laboratory testing. Field SPT N-values are corrected for hammer efficiency (assumed to be 90 percent for the automatic safety hammer used), rod length, borehole diameter, and overburden pressure to produce $(N_1)_{60}$ values.

Overburden

Overburden soils include approximately 0.3 to 1.0 feet of topsoil overlying 1.7 feet to 2.6 feet of glacial till. General descriptions of the subsurface conditions and engineering characteristics of the soils are presented in the following subsections.

Topsoil

The topsoil encountered generally ranges from brown fine to coarse sand with little to some silt, trace to some gravel, and trace clay, to brown silt with little to some sand, little clay, and trace to few gravel, based on visual descriptions. Laboratory testing results indicate the topsoil consists of brown fine to coarse sand with some gravel and little silt. The topsoil was visually classified as SM or ML soil in accordance with the Unified Soil Classification System (USCS). The topsoil contained occasional organics and frequent rootlets. The topsoil relative density is described as loose to medium dense based on approximate SPT $(N_1)_{60}$-values, and its moisture is described as moist. The results of laboratory testing on topsoil are summarized in **Table 11.**

Glacial Till

Glacial till was encountered at each boring location beneath the topsoil. The glacial till generally consists of the following, based on visual descriptions and laboratory testing results:

- brown non-plastic silt with trace to some sand and gravel;
- reddish-brown fine to coarse sand with little to some gravel, and few to some silt; and/or
- reddish-brown gravel with some sand, and few silt.

The glacial till encountered is generally consistent with published mapping by the Maine Geological Survey (Qt – heterogeneous mixture of sand, silt, clay, and stones). The glacial till was visually classified as ML, SW-SM, SM, or GP-GM soil with increasing depth in accordance with the USCS. The glacial till relative density is described as medium dense to very dense based on approximate SPT $(N_1)_{60}$-values, and its moisture is described as moist. The results of laboratory testing on glacial till are summarized in **Table 12.**

Bedrock

The top of weathered bedrock was interpreted at depths ranging from 2.0 to 3.3 feet bgs (based on split-spoon refusal and observed rotary drilling conditions and cuttings) beneath the glacial till. The weathered bedrock was found to vary in thickness from approximately 0.4 to 1.5 feet. The bedrock depths as encountered in borings, test pits, and monitoring wells are tabulated in **Table 13**.

Bedrock was confirmed via coring starting at depths of approximately 3 to 4 feet bgs. The bedrock encountered is generally consistent with published mapping by the Maine Geological Survey as the Perry Formation and consists of a cobble and pebble conglomerate with sandstone and siltstone (Dpc – maroon cobble and pebble alluvial conglomerate and arkosic sandstone; clasts of underlying volcanic rocks and granite). Sand and silt was typically encountered within the bedrock fractures. The bedrock is generally fine to coarse grained and moderately weathered. Bedrock core recovery ranged from 25 to 100 percent, with an average recovery of approximately 74 percent. The Rock Quality Designation (RQD) for the bedrock ranges from 0 to 30 percent, indicating very poor to poor quality. It is possible that the very poor to poor bedrock quality encountered is a result of the bedrock coring process due to the potentially low strength, softness, and/or conglomerate nature of the bedrock, since the top of the bedrock was not able to be ripped with a small excavator during test pitting activities.

Groundwater

At the completion of drilling, groundwater was observed in borings B-2, B-3, and B-5 at depths ranging from 3.8 to 4.7 feet bgs; however, it is likely that the groundwater levels had not been given ample time to equilibrate and actual groundwater levels may be deeper bgs than the levels measured, since water was introduced to the borehole during drilling. Groundwater observations were also recorded during overburden test pitting activities. Refer to Task 1 of this report. Site groundwater levels are expected to fluctuate in response to precipitation events, seasonal climate patterns, construction activity, site use, and adjacent site use, and should be expected to vary from depths/elevations found during this investigation.

<u>Preliminary Recommendations</u>

The following subsections provide preliminary geotechnical recommendations, based on available site-specific information and our assumptions related to site development, are provided for planning and costing purposes and are not meant for use for design or construction. When more detailed and/or finalized site development plans (i.e., grading, cut/fill, drainage, layout, structural loading, etc.) are available, a final geotechnical evaluation should be completed to provide design and construction recommendations.

For the purposes of providing preliminary recommendations, it is assumed that redevelopment site grades will approximate existing grades (i.e., minimal cut/fill) and that the proposed duplex structures will be supported by shallow foundations with slabs-on-grade.

Shallow Foundation Support and Settlement

Based on the subsurface conditions encountered, it is believed that satisfactory foundation support for the proposed duplexes can be provided with shallow foundations bearing directly on sound bedrock.

- Foundations should be founded at least 6 feet below the lowest adjacent grade to provide adequate frost protection.
    - According to the Maine Department of Transportation (MDOT) freezing index maps, the Design Freezing Index for the Perry, Maine area is estimated to be about 1,250-degree days. This climatic condition could result in a depth of frost penetration of approximately 6 feet in snow-free areas.

- Foundations can be founded directly on sound bedrock at a minimum depth of 2 feet below final grade, provided that the condition of the bedrock is inspected by an on-site geotechnical engineer, adequate uplift and lateral resistance can be achieved with 2-foot foundation depth, and that foundation insulation is utilized to prevent frost penetration below the foundation.

- Bedrock is anticipated at depths of approximately 3 to 4 feet below grade but appears to be weathered and of very poor to poor quality based on RQD. Accordingly, over- excavation of the bedrock may be required to reach sound bedrock or to achieve recommended frost depth of 6 feet unless filling or insulation is used.

- Foundations bearing on sound bedrock may be designed using a net allowable bearing pressure of 4,000 pounds per square foot.

- Post-construction total and differential settlement are anticipated to be negligible (less than 1 inch) for foundations bearing on sound bedrock.

Floor Slabs-On-Grade

Preliminary recommendations for floor slabs-on-grade are provided as follows:

- A modulus of vertical subgrade reaction, k_{vi}, of 150 pounds per cubic inch should be available for structural design of floor slabs-on-grade.
- Floor slabs-on-grade should be underlain by a minimum 6-inch thick layer of “Crushed Stone” (defined in the Earthwork and Materials section herein) to provide a capillary break and a stable working surface.
- The floor slabs should be isolated structurally from foundation walls and columns/piers to allow for differential movement.
- A moisture/vapor barrier beneath floor slabs-on-grade should be utilized.

Seismic Considerations

A site class “C” is recommended based on site class definitions of the American Society of Civil Engineers Standard 7-16, Minimum Design Loads and Associated Criterial for Buildings and Other Structures. The site is not considered to be susceptible to liquefaction, based on the conditions encountered in the borings.

Permanent Drainage

Based on shallow bedrock conditions and the potential for ponding above bedrock during storm events and/or seasonal high groundwater, it is recommended that permanent perimeter drains be installed around the perimeter of proposed structures at the exterior toe of the exterior foundations or frost walls. The drains should consist of 4-inch diameter perforated (slotted, 0.12-inch slot widths) drain pipe manufactured by Advanced Drainage System, or approved equal, surrounded by a minimum of 6-inches (all sides) of open-graded crushed stone. To mitigate the potential of fines clogging the drain, wrap a non-woven geotextile fabric (6- to 8-ounce) around the crushed stone. Install the underdrains such that positive drainage is maintained (1 percent slope minimum) from the foundation to the point where the drain daylights/outlets.

Finished site grades should be sloped away from the proposed structures to promote positive drainage, and roof drains should be provided to collect roof run-off and prevent ponding near the foundations. Roof drains should not be connected to foundation drains.

Pavement

A pavement buildup consisting of approximately 4 inches of bituminous pavement underlain by 12 inches of aggregate base course is recommended. Aggregate base course should consist of “Structural Fill” material defined in the Earthwork and Materials section herein.

Earthwork and Materials

Preliminary recommendations for earthwork activities and materials are as follows:

- A geotechnical engineer should directly observe all earthwork activities.
- The site should be cleared and stripped of all existing topsoil, root mat, and/or otherwise unsuitable materials. The geotechnical explorations indicate that up to approximately 1-foot of topsoil is present at the site.
- Excavation of the encountered overburden soils should not prove difficult for heavy equipment.
- Weathered rock materials and/or bedrock were encountered at relatively shallow depths. It is recommended that planning and cost estimates account for the excavation, hoe-ramming, and/or blasting of weathered rock and/or bedrock, as the occurrence of these materials may impact excavations planned within paved areas, utility corridors, and the proposed building footprints.
- “Structural Fill” should be placed as fill or backfill above and adjacent to foundations and beneath paved areas. “Structural Fill” should conform to MDOT Standard Specifications (2014) Section 703.06 (c), Type D. MDOT 703.06 (c), Type D shall have a maximum particle size of 6 inches. The gradation limits of the portion passing a 3-inch mesh sieve are specified as follows:

Sieve Size	Percent Passing by Weight
½ inch	35 - 80
¼ inch	25 - 65
No. 40	0 - 30
No. 200	0 - 7

- "Crushed Stone" should be placed beneath slabs on grade and surrounding permanent foundation drains. "Crushed Stone" should conform to MDOT Standard Specifications (2014) Section 703.22, Type C and the following gradation:

Sieve Size	Percent Passing by Weight
1 inch	100
¾ inch	90 - 100
3/8 inch	0 - 75
No. 4	0 - 25
No. 10	0 - 5

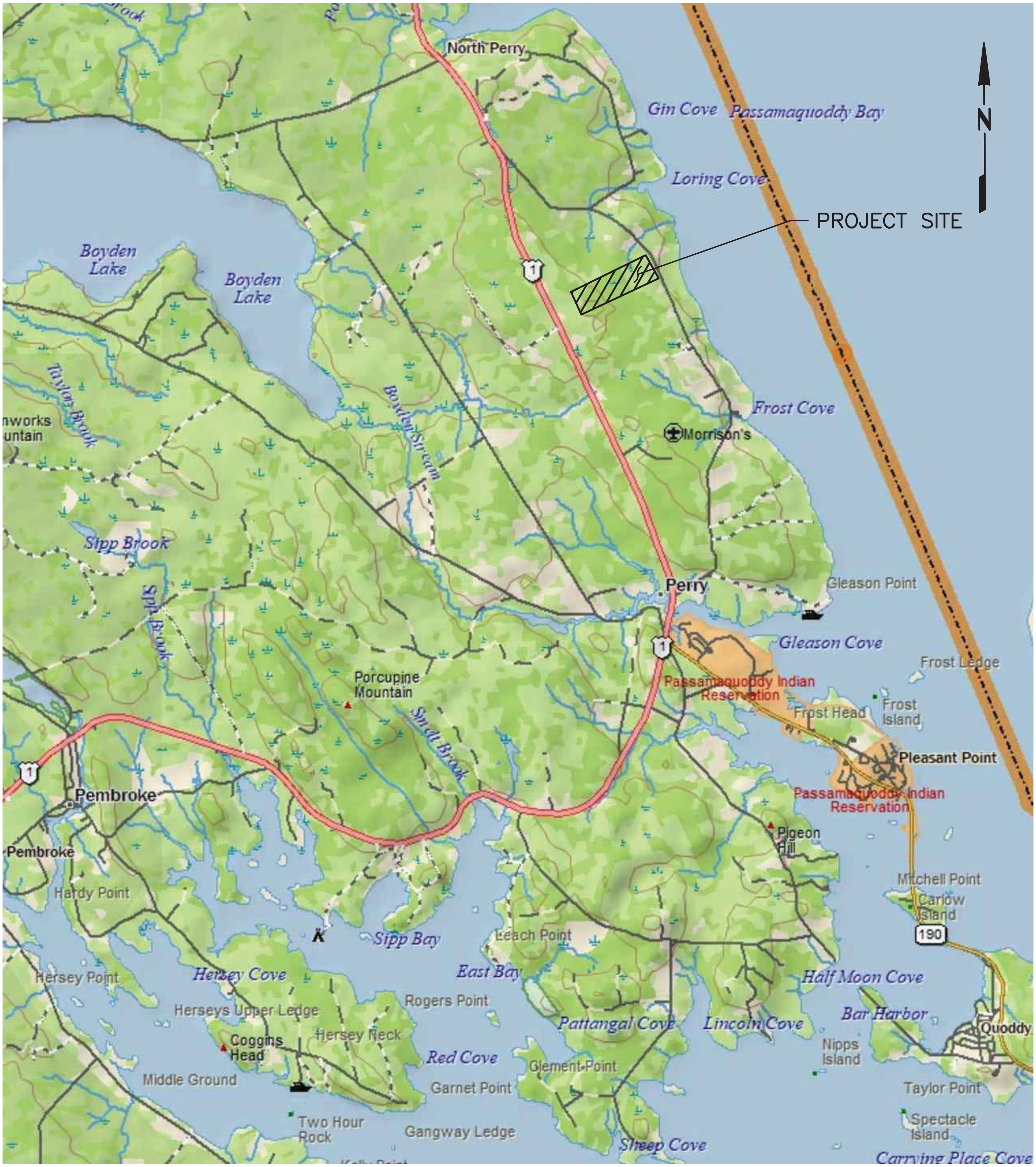
- Based on visual descriptions and laboratory testing results, it is anticipated that the fines content (percent passing No. 200 sieve) of the on-site soils may be too high (greater than 7 percent) to reuse as "Structural Fill" or "Crushed Stone". However, excavated Site soils can be reused in areas to be landscaped or within non-structural embankments.

Closure

The findings and preliminary recommendations presented herein were prepared and developed in accordance with generally accepted geotechnical engineering principles and professional engineering practice, consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. We make no other warranty, either expressed or implied. The findings and preliminary recommendations presented herein are based on the results of the geotechnical borings and laboratory testing, combined with an interpolation of soil and groundwater conditions between and beyond the widely-spaced explorations. The Geoprofessional Business Association has prepared important information about this geotechnical report and we have included it in **Appendix F** for your use.

When more detailed and/or finalized site development plans become available, Amec Foster Wheeler HDR Joint Venture or another qualified geotechnical firms should complete a geotechnical evaluation and provide final design and construction recommendations for the development.

FIGURES



0 1/2 1 2

SCALE IN MILES

SOURCE:
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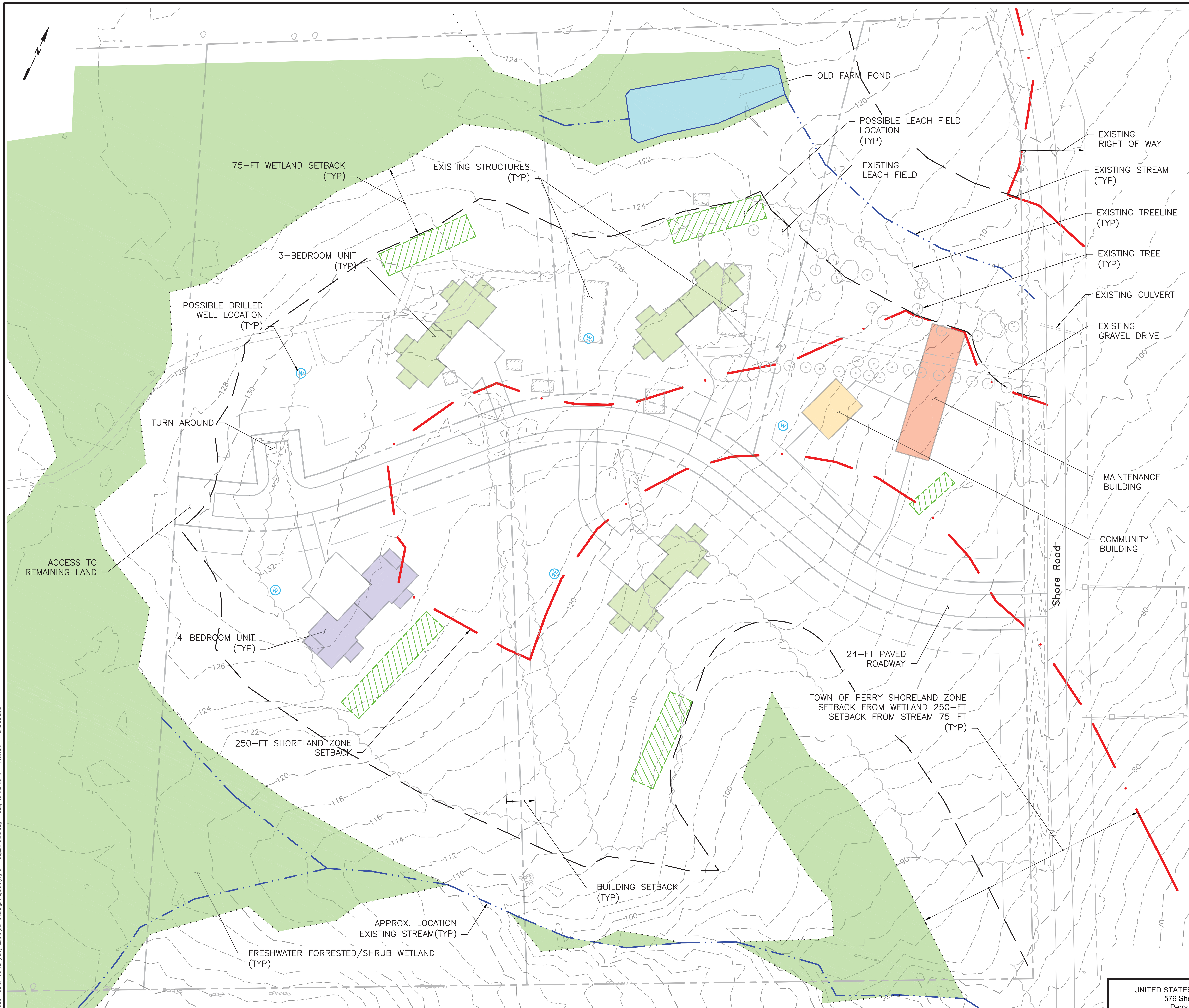
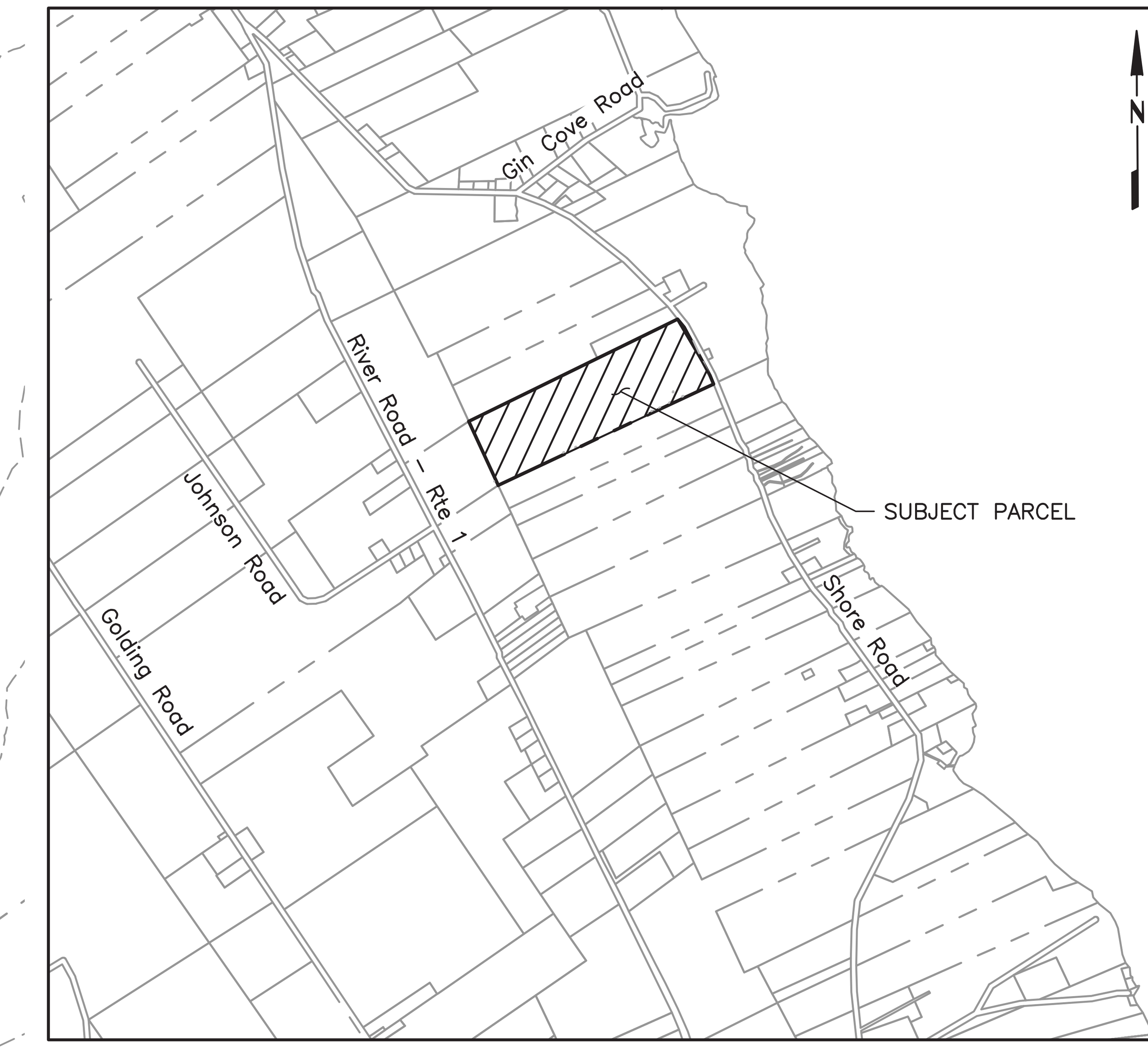
Prepared/Date: WJW 6/17/19
Checked/Date: CRH 6/17/19

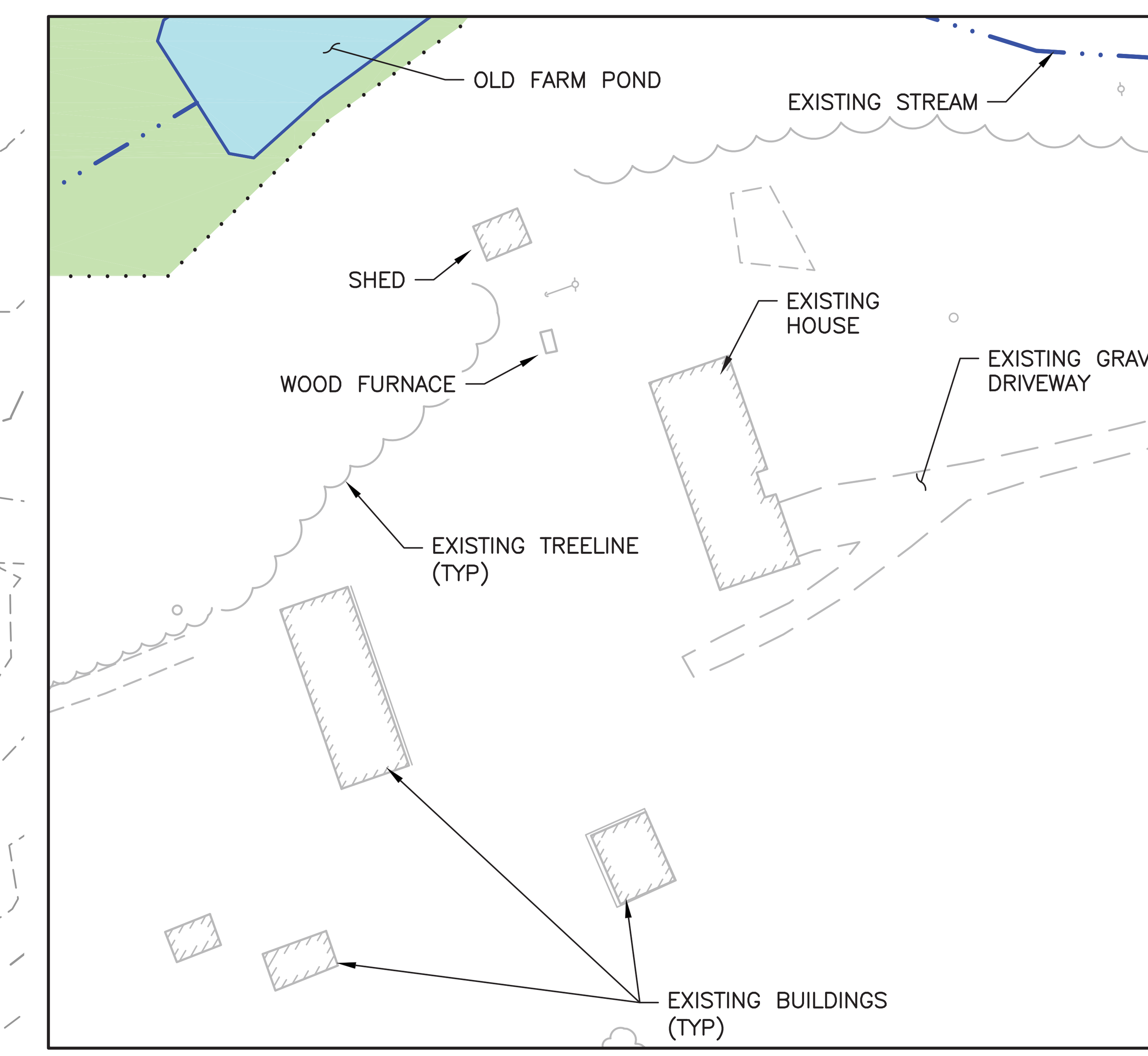
USCG 576 Shore Road Perry, Maine	Amec Foster Wheeler HDR JOINT VENTURE	LOCATION MAP Eastport Housing Site Development Project 3350-00-007 Figure 1


OLD FARM–POND (MAN–MADE FEATURE) (TYP)
APPROX. LOCATION ASH PILE
EXISTING STRUCTURES (TYP)
APPROX. LOCATION EXISTING STREAM
EXISTING WELL #1
EXISTING WELL #2
FRESHWATER FORRESTED/SHRUB WETLAND (TYP)
APPROX. LOCATION EXISTING STREAM (TYP)
Shore Road
SS–1
SS–2
SS–3
SS–4
SS–5
SS–6
SS–7
SS–8
SS–9
SS–10
B–1
B–2
B–3
B–4
B–5
E–1
E–2
MW–1
MW–2
MW–3
TP–1
TP–2
TP–3
TP–4
TP–5
TP–6
TP–7
TP–8
TP–9
TP–10
TP–11
TP–12
TP–13
TP–14
TP–15
TP–16
TP–17
TP–18
TP–19
TP–20
TP–21
TP–22
TP–24
VICINITY MAP
Gin Cove Road
River Road – Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
EXISTING BUILDINGS
OLD FARM–POND
APPROX. LOCATION EXISTING STREAM
SHED
WOOD FURNACE
EXISTING HOUSE
EXISTING TREELINE (TYP)
EXISTING GRAVEL DRIVEWAY
EXISTING BUILDING
EXISTING BUILDINGS
EXISTING BUILDING
LEGEND:
B–1 GEOTECHNICAL BORINGS
MW–1 MONITORING WELLS
E–1 EXISTING WELLS
TP–1 SUBSURFACE WASTE WATER DISPOSAL TEST PIT
SS–1 SURFACE SOIL SAMPLE
0 25 50 100
SCALE IN FEET
Prepared/Date: WJW 8/06/19
Checked/Date: PSB 8/06/19
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 2 - Exploration Locations





VICINITY MAP



EXISTING STRUCTURES

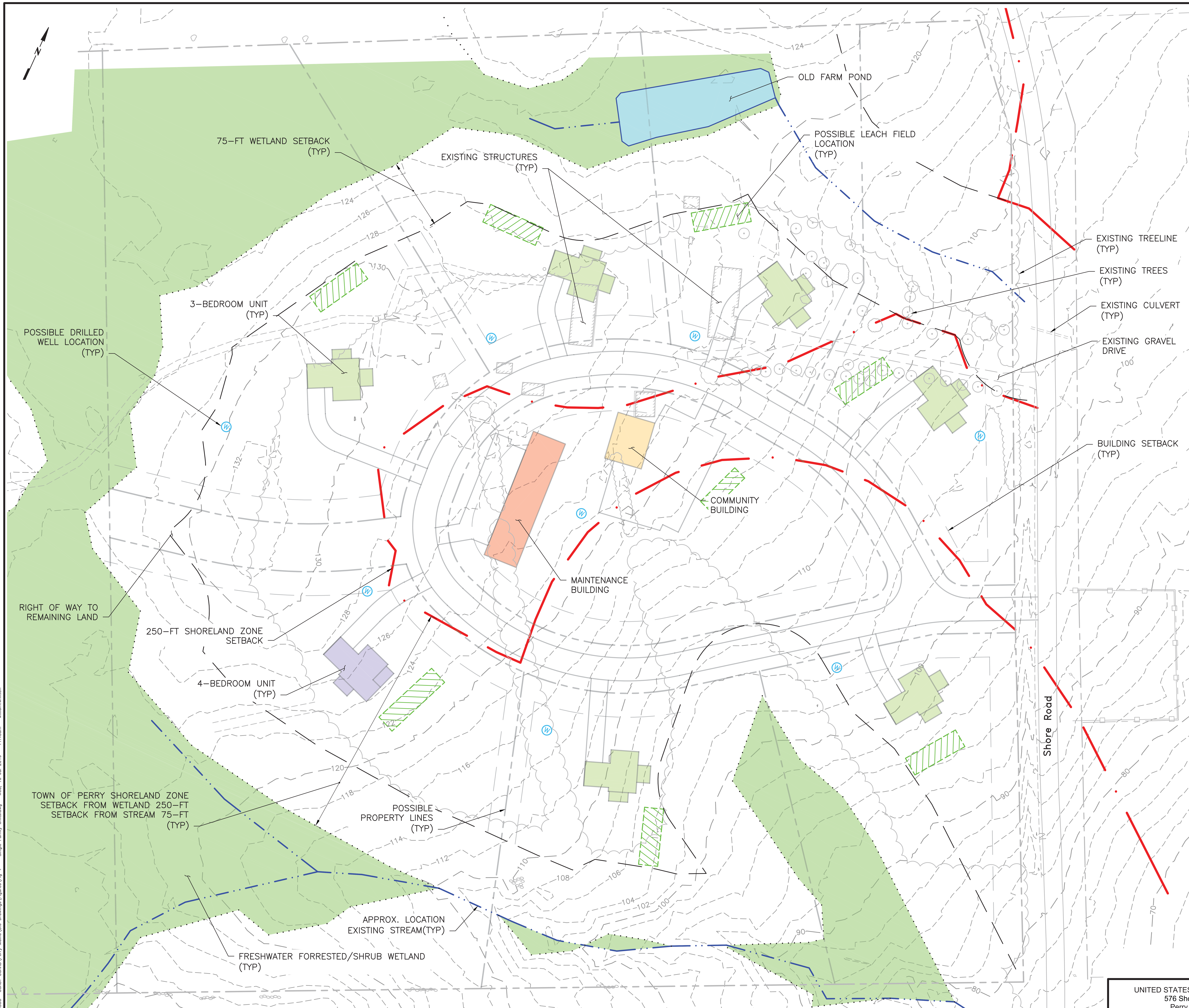
NOTES:

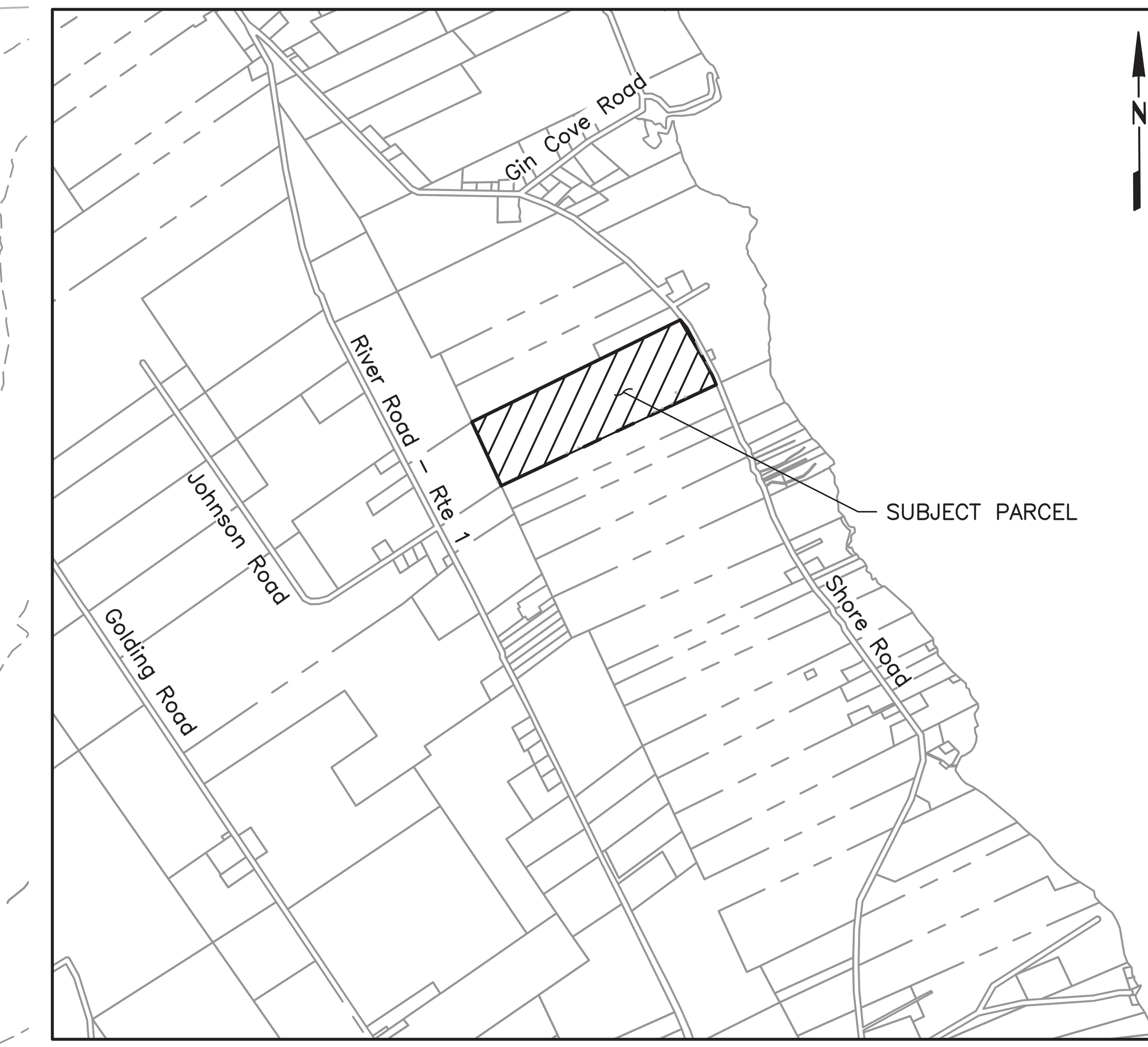
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
   MIN. LOT SIZE = 30,000 SF
   MIN STREET FRONTAGE = 150-FT
   BUILDING FRONT SETBACK = 25-FT
   BUILDING SIDE AND REAR SETBACK = 15-FT

0 25 50 100
SCALE IN FEET

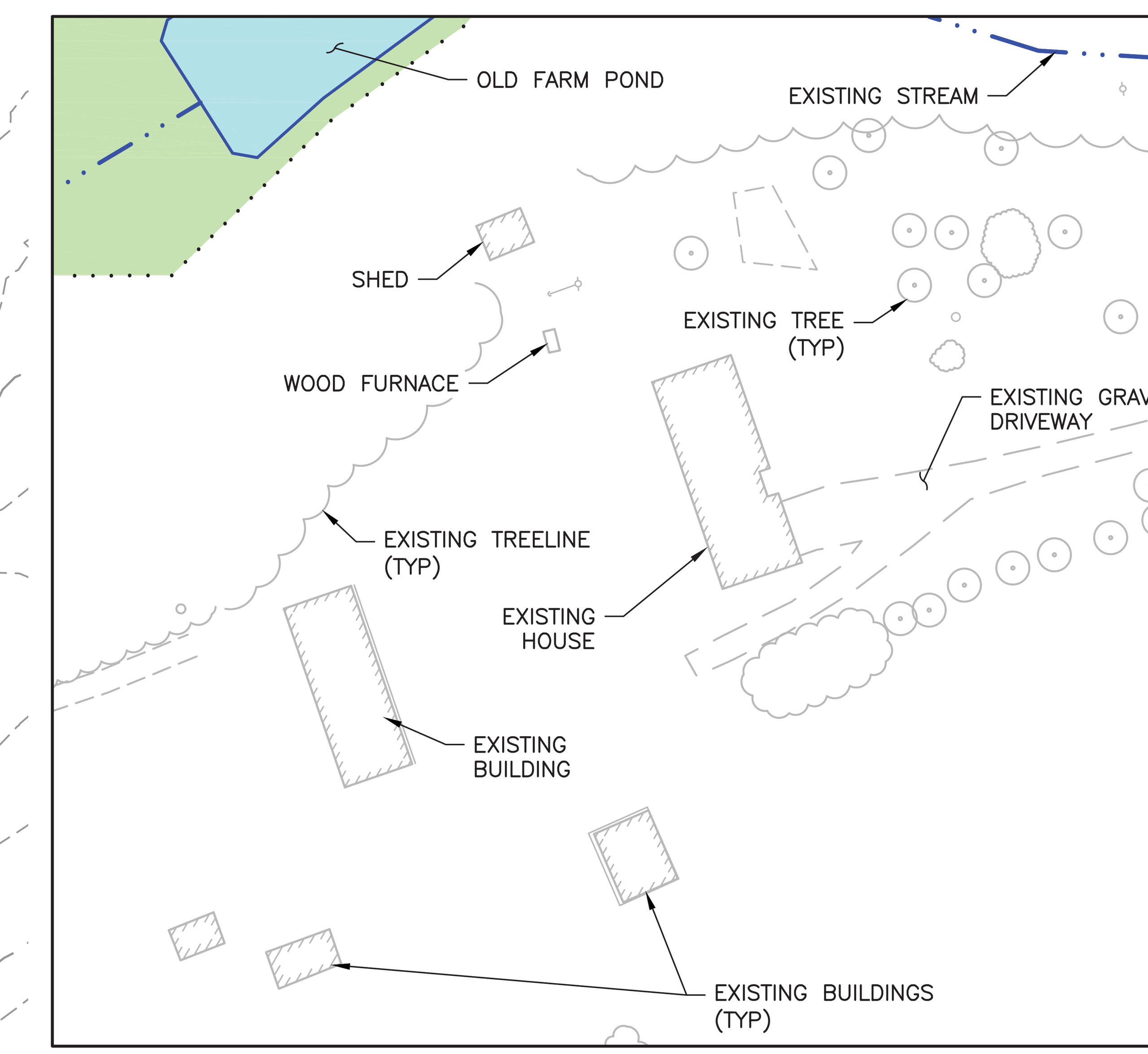
Prepared/Date: WJW 7/12/19
Checked/Date: PSB 7/12/19

UNITED STATES COAST GUARD 576 Shore Road Perry, Maine	Amec Foster Wheeler HDR JOINT VENTURE	Site Development Evaluation and NEPA EA for Housing Project Project 3350-00-007 Figure 3 - Duplex Units





VICINITY MAP



EXISTING STRUCTURES

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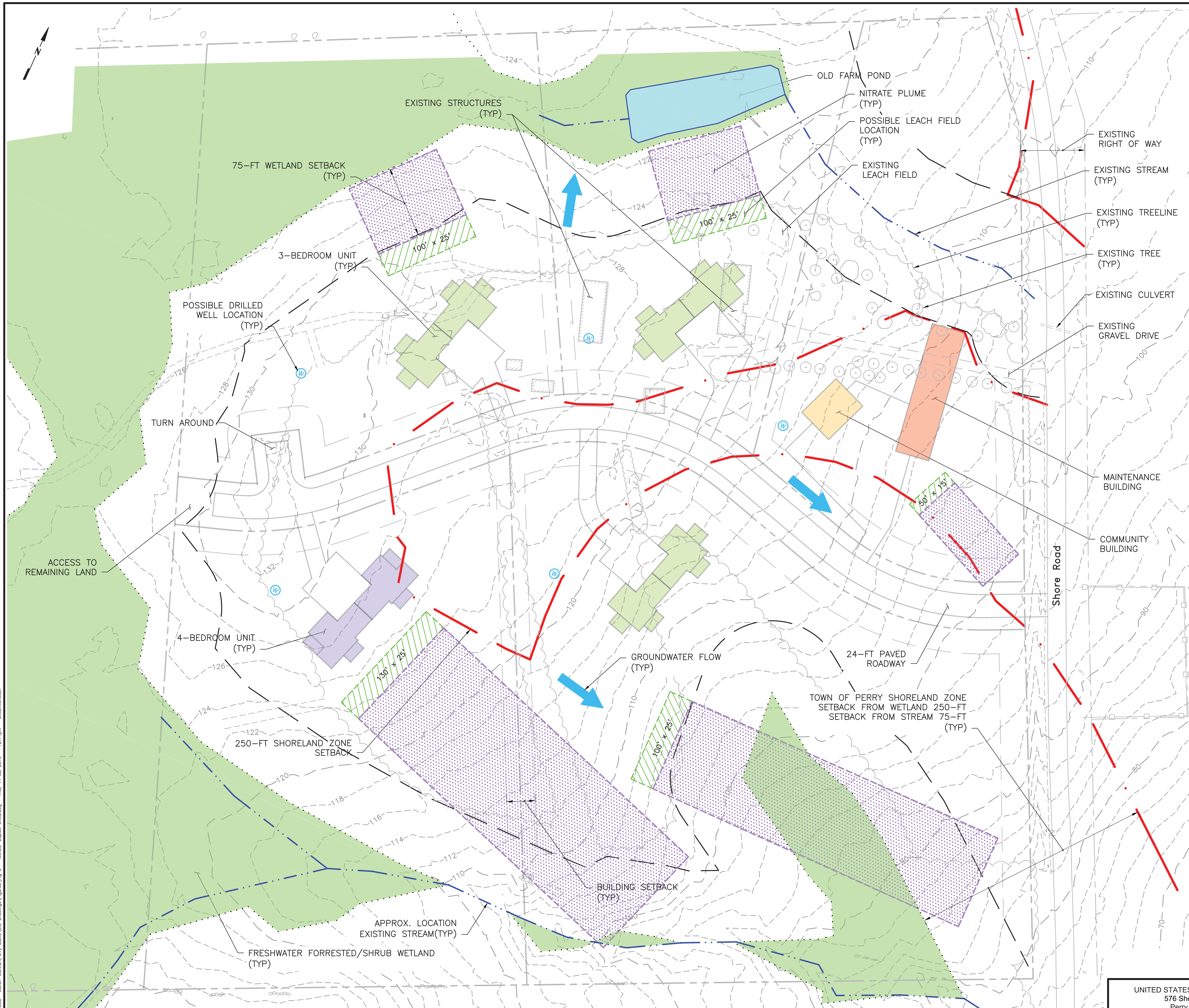
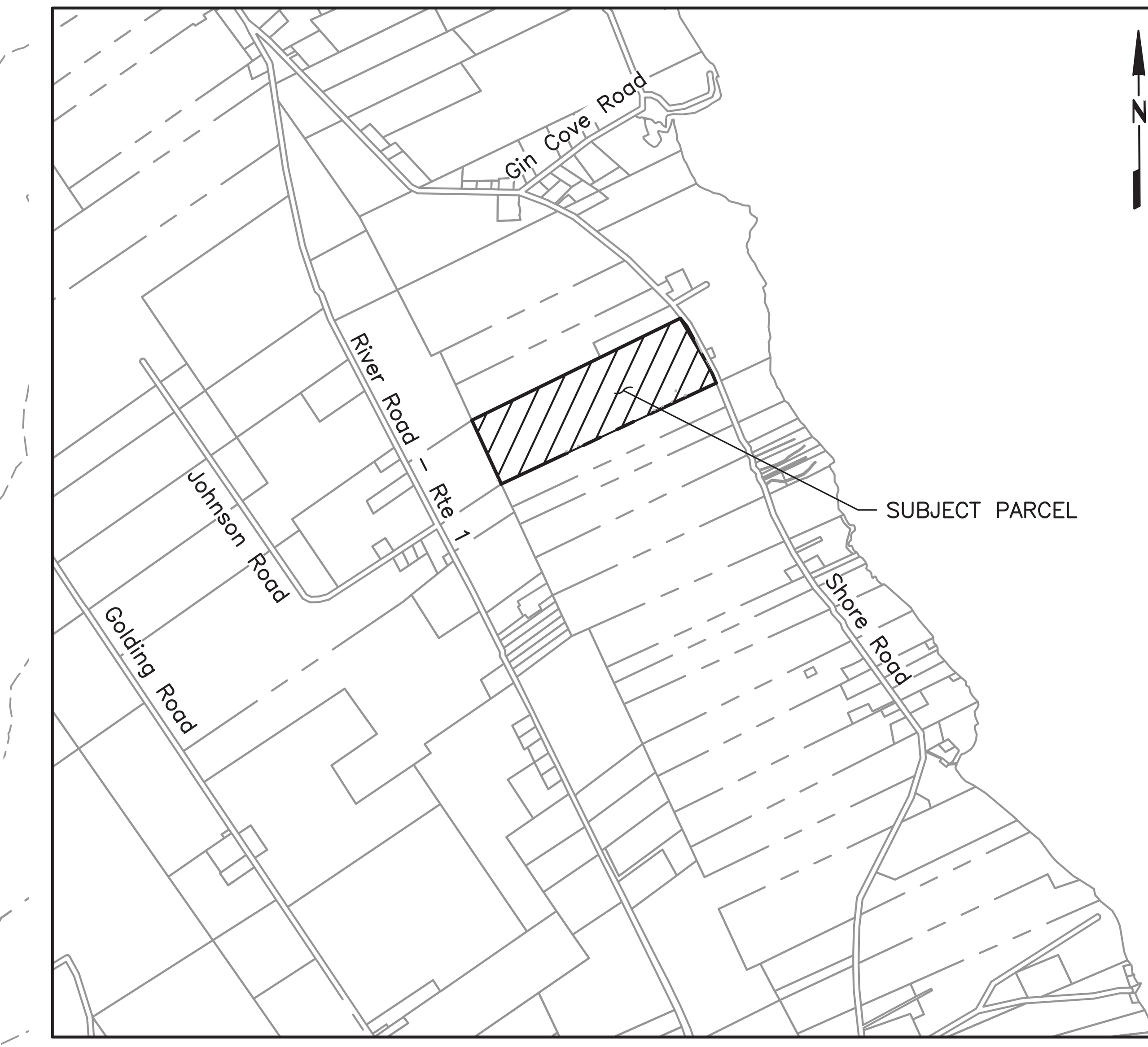
0 25 50 100
SCALE IN FEET

Prepared/Date: WJW 7/12/19
Checked/Date: PSB 7/12/19

UNITED STATES COAST GUARD 576 Shore Road Perry, Maine	Amec Foster Wheeler HDR JOINT VENTURE	Site Development Evaluation and NEPA EA for Housing Project Project 3350-00-007 Figure 4 - Single Family Units





VICINITY MAP

NOTES:

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3. TOTAL DEVELOPMENT AREA = 15.30 AC
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   - MIN STREET FRONTAGE = 150-FT
   - BUILDING FRONT SETBACK = 25-FT
   - BUILDING SIDE AND REAR SETBACK = 15-FT

0 25 50 100
SCALE IN FEET

Prepared/Date: WJW 7/12/19
Checked/Date: PSB 7/12/19

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Site Development Evaluation and NEPA EA
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Project 3350-00-007
Figure 5 - Nitrate Impact Assessment-Duplex Units

NOTES:

1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
   MIN. LOT SIZE = 30,000 SF
   MIN STREET FRONTAGE = 150-FT
   BUILDING FRONT SETBACK = 25-FT
   BUILDING SIDE AND REAR SETBACK = 15-FT

Prepared/Date: WJW 7/12/19
Checked/Date: PSB 7/12/19

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Site Development Evaluation and NEPA EA for Housing Project
Project 3350-00-007
Figure 6 - Nitrate Assessment Single Family Units

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Prepared/Date: WJW 7/12/19
Checked/Date: PSB 7/12/19

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for Housing Project
Project 3350-00-007
Figure 7 - Lead and Asbestos Locations

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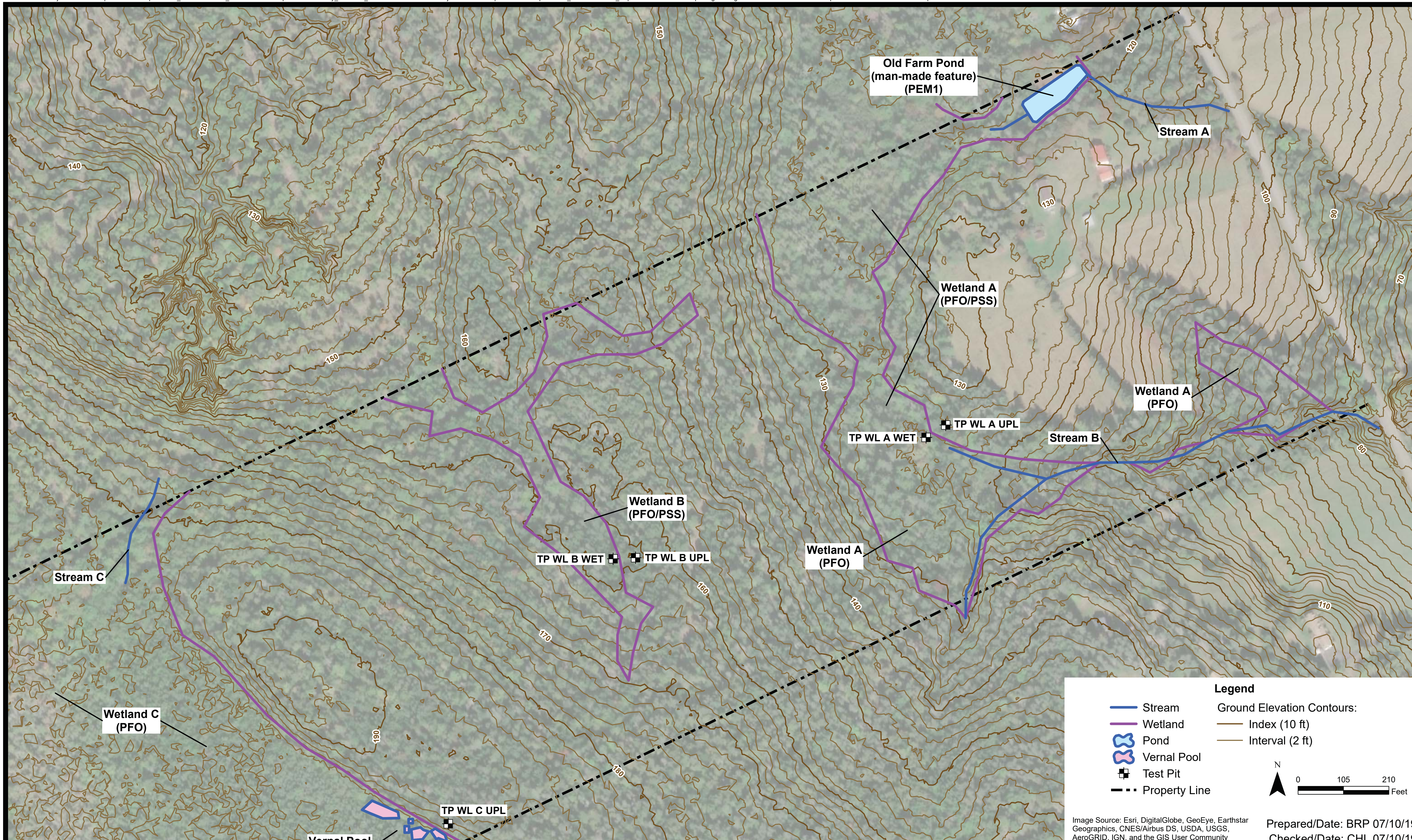

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576 Shore Road
Perry, Maine

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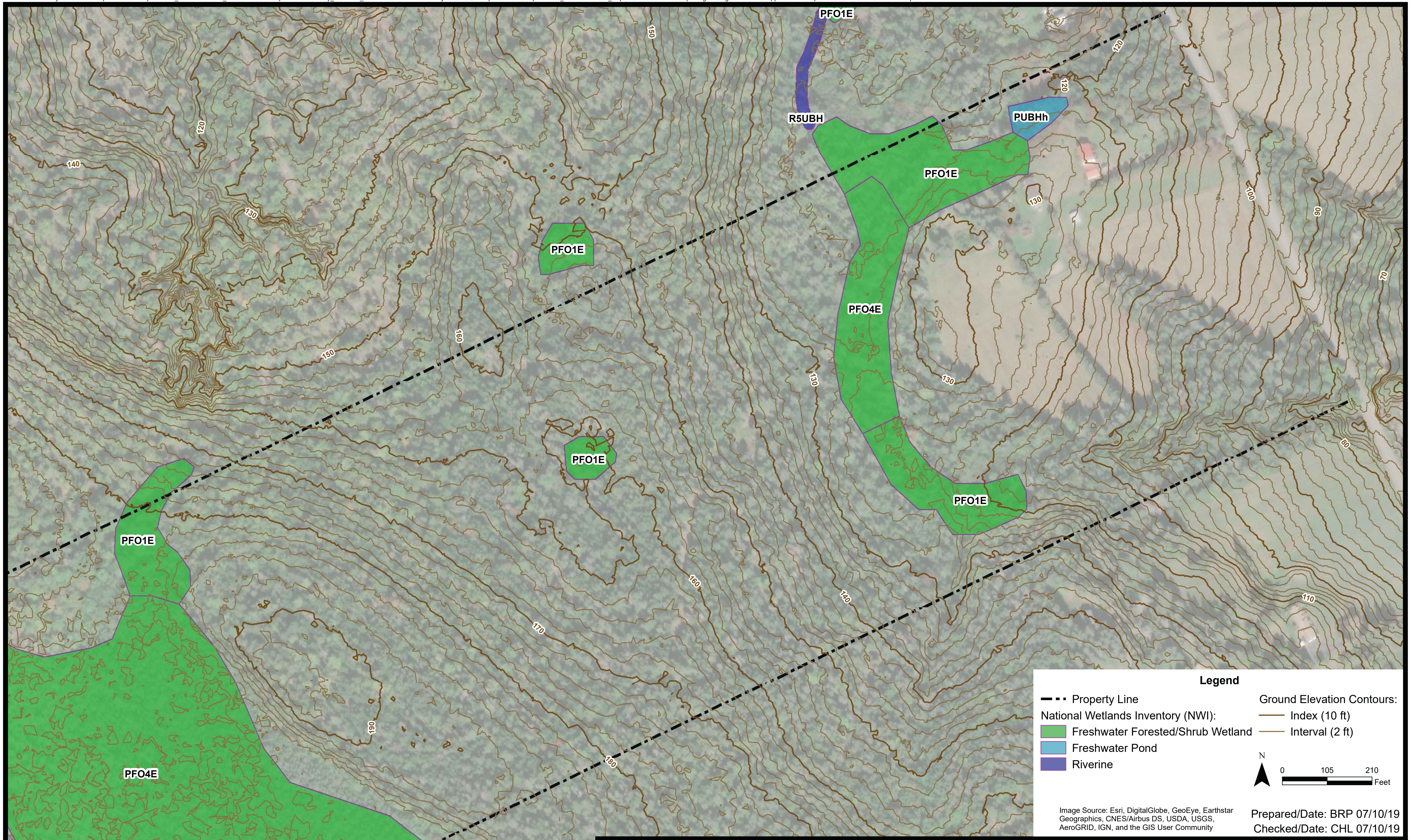
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 8 - Wetland Delineation Plan

Document: P:\Projects\USCG Eastport Site Development\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\Perry_Wetlands_11x17LS.mxd PDF: P:\Projects\USCG Eastport Site Development\4.0_Deliverables\4.1_Reports\Site Evaluation Report\Fgures\Figure 9 - NWI Mapped Wetlands.pdf 07/10/2019 1:46 PM brian.peters



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Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 9 - NWI Mapped Wetlands

TABLES

Table 1
Recommended Minimum Groundwater Recovery Rates

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Well Depth (Feet)	Recovery rates [a] (GPM)
75	5
110	4
160	3
250	2
320	1
420	1/2

Notes:

[a] Recommended minimum recovery rates for a single-family home are based on a static water level of approximately 25 feet below ground surface. (Maine CMR Chapter 232).

Table 2
Summary of Groundwater Sampling and Laboratory Analysis

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Parameter	Method	No of Samples	Sample Locations
Arsenic	EPA 200.5	4	MW-1, 2, 3, & Existing Well 1
Lead	EPA 200.5	4	MW-1, 2, 3, & Existing Well 1
Manganese	EPA 200.5	4	MW-1, 2, 3, & Existing Well 1
Iron	EPA 200.5	4	MW-1, 2, 3, & Existing Well 1
Flouride	EPA 300.0	4	MW-1, 2, 3, & Existing Well 1
Nitrate/Nitrite	EPA 300.0	4	MW-1, 2, 3, & Existing Well 1
Uranium	EPA 200.8	4	MW-1, 2, 3, & Existing Well 1
Radon	Radon	4	MW-1, 2, 3, & Existing Well 1
Baterica Ecoli	SM9233B	4	MW-1, 2, Existing Well 1(house well) and Existing Well 2 (barn well)
Baterica Fecal	Colilert-18	4	MW-1, 2,Existing Well (house well) and Existing Well 2 (barn well)
VOC	8260 C	1	Existing Well 1
EPH	MA EPH Rev.1.1	1	Existing Well 1
VPH	MA VPH Rev. 1.1	1	Existing Well 1

Table 3
Summary of Groundwater Analysis Results

U.S. Coast Guard Eastport Housing
Site Evaluation Report

	Location ID	MW-1		MW-2		MW-3		EW-1		EW-2	
	Sample ID	MW-1		MW-2		MW-3		EW-1		EW-2	
	Sample Date	6/12/2019		6/12/2019		6/12/2019					
	QC Code	NA		NA		NA		NA		NA	
Parameter	**MECDC Groundwater Criteria**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Bacteria Count (CFU/100mL)											
Ecoli *	0	<1		<1				<1		<10	
Fecal Coliform *	0	<1		<1				8		<10	
Total Metals (ug/L)											
ARSENIC	10	**8.4**		**16.5**		**29**		**46**			
IRON	300***	**1000**		**78.9**	J	**2950**		**10800**			
LEAD	15		U		U	**1.4**	J	**7.6**			
MANGANESE	50***	**14.8**		**3.4**	J	**59.9**		**343**			
Dissolved Metals (ug/L)											
ARSENIC	10					**16.3**		**7**	J		
IRON	300***					**484**		**25**	J		
LEAD	15					4	U	5	U		
MANGANESE	50***					**11.3**		**9.8**			
Radiological											
RADON (pCi/L) **	4000	**840**		**1000**		**1200**		**820**			
TOTAL URANIUM (ug/L)	30	**2.71**		**2.19**		**8.52**		**3.25**			
DISSOLVED URANIUM (ug/L)	30					**8.21**		**1.59**			
Inorganics (mg/L)											
FLUORIDE	4	**0.048**	J	**0.086**		**0.12**		**0.061**			
NITRATE AS N	10	**0.55**		**0.43**		**0.14**		**2.2**			
NITRITE AS N	1	**0.13**		**0.14**		**0.13**		**0.12**			

Notes:
MECDC Groundwater Criteria - Adopted USEPA MCL in March 2018
NS = No standard
* Maximum Contaminant Level (MCL) for Total Coliform Bacteria used
** No state standard has been established for radon in groundwater; the current advisory level for radon is 4,000 pCi/L.
*** Secondary Drinking Water Regulation - non-enforceable guidelines for taste, odor, color or aesthetic effects (staining).
Bold Indicates Analyte Detected
Bold and Highlighted cells indicate an exceedance of applicable standards
ug/L = micrograms per liter
mg/L - milligrams per liter
CFU/100mL = Colony forming units per 100 millileters
pCi/L - Picocuries per liter
Qualifier
U = not detected
J = estimated value

Created by: KMS 6/26/19
Checked by:

Table 4
Summary of Asbestos Sample Locations and Results

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Sample Location and Suspect ACM Material	Sample Results
MAIN HOUSE	
Basement; Refractory Cement	None Detected
First Floor - Kitchen; Sheet Flooring	None Detected
First & Second Floor - Bathrooms; Sheet Flooring	Asbestos Identified
First & Second Floor - Sheetrock Wall/Ceiling Systems	None Detected
First Floor - Living Room; Yellow Ceramic Tile Adhesive	None Detected
BARN	
Interior - Sheetrock Wall System	None Detected
Exterior - Corrugated Roof Material	None Detected
Exterior - Asphalt Roof Shingles (orange)	None Detected
Exterior - Asphalt Roof Shingles (gray)	None Detected
SHED #1 (WOOD STORAGE)	
Exterior - Asphalt Roof Shingles (orange)	None Detected
EXTERIOR BOILER	
Boiler Door Gasket Material	None Detected
Debris/Insulation	None Detected
SHED #2 (WORKSHOP)	
Exterior Door and Window Glazing	None Detected
DEBRIS PILE #2	
Corrugated and Asphalt Roof Shingle Debris (from Barn Roof)	None Detected
DOGHOUSE	
Asphalt Roof Shingles (homogeneous to Barn Roof)	None Detected
SHED #3	
Corrugated Roof Material (homogeneous to Barn Roof)	None Detected
SHED #5	
Asphalt Roof Shingles (homogeneous to Barn Roof)	None Detected

Table 5
Summary of Asbestos-Containing Materials

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Room Name	Sample #	Sheet Flooring White w/Pink SF (Square Feet)	Comment
MAIN HOUSE			
First Floor: Bathroom; Second Floor Bathroom	MAIN-003A	100 80	
Sub Total: Main House		**180**	
TOTAL		**180**	

Note:
SF = Square Feet

Table 6
Estimated ACM Abatement Costs

U.S. Coast Guard Eastport Housing
Site Evaluation Report

IDENTIFIED ASBESTOS-CONTAINING MATERIALS	TOTAL ESTIMATED QUANTITY	UNIT COST	ESTIMATED ABATEMENT COST
MAIN HOUSE			
ACM Sheet Flooring	180 SF	$20/SF	$ 3,600
TOTAL			**$ 3,600**

SF = Square Feet

Table 7
Hazardous Materials Inventory

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Identified Hazardous Materials	Quantity (Each)	Quantity Per Unit	Total Estimated Quantity	Unit Cost	Estimated Remediation Cost
MAIN HOUSE					
Fluorescent Light Tubes - 4 foot	20	4 LF/EA	80	$0.20	$ 16
Suspect PCB-Containing Light Ballasts	7	5 lbs/EA	35	$0.50	$ 18
Emergency Light	1	5 lbs/EA	5	$5.00	$ 25
Mercury-containing Thermostats	2	5 lbs/EA	10	$5.00	$ 50
Above-Ground Storage Tank (AST)	1	1 / EA	1	$500.00	$ 500
Sub-Total (Main House)					**$ 609**
BARN					
Fluorescent Light Tubes - 4 foot	11	4 LF/EA	44	$0.20	$ 9
Suspect PCB-Containing Light Ballasts	5	5 lbs/EA	25	$0.50	$ 13
Emergency Lights	1	5 lbs/EA	5	$5.00	$ 25
Sub-Total (Barn)					**$ 46**
SHED #2 (WORKSHOP)					
Fluorescent Light Tubes - 4 foot	16	4 LF/EA	64	$0.20	$ 13
Suspect PCB-Containing Light Ballasts	4	5 lbs/EA	20	$0.50	$ 10
Miscellaneous containers (motor oil)	3	EA	3	$5.00	$ 15
Sub-Total (Shed #2 workshop)					**$ 38**
DEBRIS PILE #3 AND DEBRIS PILE #5					
Propane Tanks	4	EA	4	$5.00	$ 20
Sub-Total (Debris Piles #3 and #5)					**$ 20**
Transportation (per pickup)	1	-	-	$1,000	$ 1,000
Labor (Mandays)	1	-	-	$500	$ 500
Sub-Total					**$ 1,500**
TOTAL					**$ 2,213**

LF = Linear Feet
EA = Each
lb= Pound

Table 8
Summary of Lead-Based Paint and Sample Results

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Suspect Building Components	Sample Results
MAIN HOUSE	
Interior Ceiling and Wall Systems	No LBP Identified
Interior Window, Door, and Miscellaneous Trim (i.e. baseboards)	No LBP Identified
Interior Window and Doors	No LBP Identified
Interior Cabinets	No LBP Identified
Interior Stair System	No LBP Identified
Interior Baseboard Heaters	No LBP Identified
Exterior Clapboard Siding beneath Vinyl	No LBP Identified
Exterior Cornerboard Trim beneath Vinyl	No LBP Identified
Exterior Entry Doors and Trim	No LBP Identified
Exterior Window Systems	No LBP Identified
Exterior Bulkhead	No LBP Identified
BARN	
Interior - Sheetrock Wall System	No LBP Identified
Exterior - Sliding Doors and Trim	No LBP Identified
Exterior - Entry Door and Trim	No LBP Identified
Exterior - Cornerboards	No LBP Identified
Exterior - Soffit	No LBP Identified
SHED #1 (WOOD STORAGE)	
Exterior - Siding (rear of structure)	No LBP Identified
SHED #2 (WORKSHOP)	
Interior - Floor	No LBP Identified
Interior - Window Well and Window Sash	No LBP Identified
Exterior - Siding (rear of structure)	No LBP Identified
Exterior - Double Doors and Frame	LBP Identified
DEBRIS PILE #2	
Wood chip pieces in debris pile (beneath overhang)	LBP Identified
SHED #3	
Exterior Siding and Trim	No LBP Identified
SHED #4	
Exterior Siding and Trim	No LBP Identified
SHED #5	
Exterior Siding	No LBP Identified

Table 9
Summary of Soil Sampling and Analysis

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Parameter	Method	No of Samples	Sample Locations
RCRA 8 metals	6010 C	10	All
Pesticides	8081 B	5	SS-1, SS-5, SS-6, SS-7, SS-10
Herbicides	8051 A	5	SS-1, SS-5, SS-6, SS-7, SS-10
VOCs	8260 C	3	SS-1, SS-6, SS-10
SVOCs	8270 D	3	SS-6, SS-7, SS-10
EPH	MA EPH Rev.1.1	3	SS-1, SS-6, SS-10
VPH	MA VPH Rev. 1.1	3	SS-1, SS-6, SS-10

Table 10
Summary of Soil Analysis Results

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Location ID			SS-1		SS-2		SS-3		SS-4		SS-5	
Sample ID			SS-1		SS-2		SS-3		SS-4		SS-5	
Sample Date			6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
Lab Sample ID			SM5591-001		SM5591-002		SM5591-003		SM5591-004		SM5591-005	
Parameter	**ME-SOIL-RES**	**ME-SOIL-CON**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOCs (mg/kg)												
ACETONE	52000	98000	**0.054**									
CARBON DISULFIDE	690	720	**0.0014**	J								
SVOCs (mg/kg)												
1,1'-BIPHENYL	71	400										
ACENAPHTHYLENE	4900	48000										
ANTHRACENE	25000	100000										
BENZO(A)ANTHRACENE	16	1700										
BENZO(A)PYRENE	1.6	9.9										
BENZO(B)FLUORANTHENE	16	1700										
BENZO(K)FLUORANTHENE	160	17000										
BENZO[G,H,I]PERYLENE	2500	72000										
CHRYSENE	1600	100000										
DIBENZO(A,H)ANTHRACENE	1.6	170										
DIBENZOFURAN	100	1200										
FLUORANTHENE	3300	24000										
FLUORENE	3300	96000										
INDENO(1,2,3-CD)PYRENE	16	1700										
NAPHTHALENE	57	130										
PHENANTHRENE	2500	72000										
PYRENE	2500	72000										
EPH (mg/kg)												
C11-C22 AROMATIC HYDROCARBONS-ADJUSTED	2600	74000	**21**									
C19-C36 ALIPHATIC HYDROCARBONS-ADJUSTED	100000	100000	**40**									
Pesticidess (mg/kg)												
4,4'-DDD	2.6	7.7	0.0038	U							**0.002**	JJ
4,4'-DDT	26	160	0.0038	U							**0.01**	
ALPHA-CHLORDANE	NS	NS	0.002	U							**0.0087**	
DELTA BHC	NS	NS	0.002	U							0.0019	U
GAMMA-CHLORDANE	NS	NS	0.002	U							**0.0079**	
METHOXYCHLOR	430	1300	**0.0068**	J							**0.0024**	J
TOXAPHENE	NS	NS	0.038	U							**0.22**	
Herbicides (mg/kg)												
2,4-DB	NS	NS	36	U							**40**	
DINOSEB	86	260	190	U							180	U
Total Metals (mg/kg)												
ARSENIC***	9.3	54	**10.6**		**13.4**		**13.5**	N*	**16**		**13.6**	
BARIUM	21000	20000	**24.3**		**27**		**31.6**	N*	**35.5**		**42.5**	
CADMIUM	98	42	0.64	U	1	U	0.25	UN	0.52	U	**0.515**	J
CHROMIUM **	100000	27000	**12.8**		**9.62**		**11.1**	N*	**22.1**		**19.2**	
LEAD	140	450	**12.4**		**17.4**		**13.7**	N	**20.9**		**57.5**	
MERCURY	3.1	3.1	**0.014**	J	**0.031**		**0.0656**		**0.0652**		**0.0516**	
SELENIUM	540	1700	1.3	U	2	U	**0.33**	JN	**0.28**	J	1.4	U
SILVER	540	1700	1.3	U	**0.28**	J	**0.361**	J	**0.627**	J	**0.22**	J
Solids (Percent)												
TOTAL SOLIDS	NS	NS	**86**		**76**		**74**		**78**		**90**	

Notes:
ME-SOIL-RES = MEDEP-APP 2-Final RAG (2018) - Soil Residential
ME-SOIL-CON = MEDEP-APP 2-Final RAG (2018) - Soil Construction Work
NS = No standard
** = Trivalent chromium standard used for Total Chromium
*** = "Maine Background" - MEDEP-APP 2-Final RAG (2018) for arsenic = 16 mg/kg
Bold indicates analyte detected
Highlighted cells indicate an exceedance of applicable standards
mg/kg = Milligrams per kilogram
Qualifier
U = not detected
N = Pre-digestion spiked sample recovery is not within control limits
* = Analyte run QC sample not within control limits
J = estimated value

Table 10
Summary of Soil Analysis Results

U.S. Coast Guard Eastport Housing
Site Evaluation Report

		Location ID	SS-6		SS-7		SS-8		SS-9		SS-10	
		Sample ID	SS-6		SS-7		SS-8		SS-9		SS-10	
		Sample Date	6/4/2019		6/4/2019		6/4/2019		6/4/2019		6/4/2019	
		Lab Sample ID	SM5591-006		SM5591-007		SM5591-008		SM5591-009		SM5591-010	
Parameter	**ME-SOIL-RES**	**ME-SOIL-CON**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOCs (mg/kg)												
ACETONE	52000	98000	**0.096**								**0.062**	
CARBON DISULFIDE	690	720	**0.0012**	J							**0.0016**	J
SVOCs (mg/kg)												
1,1'-BIPHENYL	71	400	0.33	U	**0.1**	J					0.4	U
ACENAPHTHYLENE	4900	48000	0.33	U	**0.31**	J					0.4	U
ANTHRACENE	25000	100000	0.33	U	**1.5**	J					0.4	U
BENZO(A)ANTHRACENE	16	1700	0.33	U	**8.2**						0.4	U
BENZO(A)PYRENE	1.6	9.9	0.33	U	**7.2**						0.4	U
BENZO(B)FLUORANTHENE	16	1700	0.33	U	**9.4**						0.4	U
BENZO(K)FLUORANTHENE	160	17000	0.33	U	**3.9**	J					0.4	U
BENZO[G,H,I]PERYLENE	2500	72000	0.33	U	**3.8**						0.4	U
CHRYSENE	1600	100000	0.33	U	**11**						0.4	U
DIBENZO(A,H)ANTHRACENE	1.6	170	0.33	U	**0.77**						0.4	U
DIBENZOFURAN	100	1200	0.33	U	**0.41**	J					0.4	U
FLUORANTHENE	3300	24000	0.33	U	**10**						0.4	U
FLUORENE	3300	96000	0.33	U	**0.39**	J					0.4	U
INDENO(1,2,3-CD)PYRENE	16	1700	0.33	U	**4.2**	J					0.4	U
NAPHTHALENE	57	130	0.33	U	**0.15**	J					0.4	U
PHENANTHRENE	2500	72000	0.33	U	**7.9**						0.4	U
PYRENE	2500	72000	0.33	U	**18**						0.4	U
EPH (mg/kg)												
C11-C22 AROMATIC HYDROCARBONS-ADJUSTED	2600	74000	**140**								**49**	
C19-C36 ALIPHATIC HYDROCARBONS-ADJUSTED	100000	100000	**370**								**85**	
Pesticidess (mg/kg)												
4,4'-DDD	2.6	7.7	0.0034	U	**0.12**						0.004	U
4,4'-DDT	26	160	0.0034	U	**0.067**	J					0.004	U
ALPHA-CHLORDANE	NS	NS	0.0017	U	0.0022	U					0.0021	U
DELTA BHC	NS	NS	0.0017	U	**0.051**	J					0.0021	U
GAMMA-CHLORDANE	NS	NS	0.0017	U	0.0022	U					0.0021	U
METHOXYCHLOR	430	1300	0.017	U	0.022	U					0.021	U
TOXAPHENE	NS	NS	0.034	U	0.043	U					0.04	U
Herbicides (mg/kg)												
2,4-DB	NS	NS	32	U	**720**	J					38	U
DINOSEB	86	260	160	U	**37**	J					200	U
Total Metals (mg/kg)												
ARSENIC***	9.3	54	**6.99**		0.85	U	**18**		**15.3**		**16.5**	
BARIUM	21000	20000	**14**		**368**		**43.1**		**39.6**		**37.2**	
CADMIUM	98	42	0.4	U	**12.6**		0.56	U	0.44	U	0.53	U
CHROMIUM **	100000	27000	**13.8**		**1.14**		**11.7**		**11.1**		**8.36**	
LEAD	140	450	**12.8**		**19.3**		**24.2**		**16.1**		**20.1**	
MERCURY	3.1	3.1	0.027	U	0.035	U	**0.034**	J	**0.03**	J	0.034	U
SELENIUM	540	1700	0.79	U	**0.74**	J	**0.37**	J	**0.25**	J	1.1	U
SILVER	540	1700	**0.295**	J	**0.357**	J	**0.453**	J	**0.574**	J	**0.309**	J
Solids (Percent)												
TOTAL SOLIDS	NS	NS	**96**		**77**		**87**		**80**		**81**	

Notes:
ME-SOIL-RES = MEDEP-APP 2-Final RAG (2018) - Soil Residential
ME-SOIL-CON = MEDEP-APP 2-Final RAG (2018) - Soil Construction Work
NS = No standard
** = Trivalent chromium standard used for Total Chromium
*** = "Maine Background" - MEDEP-APP 2-Final RAG (2018) for arsenic = 16 mg/kg
Bold indicates analyte detected
Highlighted cells indicate an exceedance of applicable standards
mg/kg = Milligrams per kilogram
Qualifier
U = not detected
N = Pre-digestion spiked sample recovery is not within control limits
* = Analyte run QC sample not within control limits
J = estimated value

Table 11
Laboratory Testing Results for Topsoil

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Boring No.	Sample No.	Sample Depth (ft bgs) [4]	Moisture Content[1] (%)[4]	Organic Content[2] (%)[4]	Particle Size Analysis[3]		
					Gravel (%)[4]	Sand (%)[4]	Silt & Clay (%)[4]
B-1	S-1	0.0 – 0.8	19.5	NT[4]	34.4	40.9	24.7
B-2	S-1	0.0 – 0.4	22.0	8.8	NT[4]	NT[4]	NT[4]

Notes: 1. ASTM D2216.
2. ASTM D2974.
3. ASTM D6913.
4. NT = Not Tested. % = percent. ft bgs = feet below existing ground surface.

Table 12
Laboratory Testing Results for Glacial Till

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Boring No.	Sample No.	Sample Depth (ft bgs)[3]	Moisture Content[1] (%)[3]	Particle Size Analysis[2]		
				Gravel (%)[3]	Sand (%)[3]	Silt & Clay (%)[3]
B-2	S-2B	2.4 – 3.3	4.7	51.9	37.3	10.8
B-3	S-1B	0.5 – 1.0	4.3	44.2	48.3	7.5
B-4	S-1B	0.8 – 1.3	5.4	19.6	72.9	7.5
B-4	S-2	2.4 – 3.1	7.7	32.7	46.9	20.4
B-5	S-1	0.6 – 1.0	8.8	41.3	45.0	13.7

Notes: 1. ASTM D2216.
2. ASTM D6913.
3. ft bgs = feet below existing ground surface. % = percent.

Table 13
Bedrock Elevations

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Exploration No.	Northing (ft)	Easting (ft)	Ground Surface Elevation (ft)	Approximate Depth to Bedrock (ft)	Approximate Bedrock Elevation (ft)
B-1	492693.73	1352196.36	112.3	3.7	108.6
B-2	492604.92	1351939.43	126.1	4.0	122.1
B-3	492259.41	1351787.01	127.6	3.0	124.6
B-4	492449.05	1352058.52	117.1	4.0	113.1
B-5	492299.26	1352382.48	95.7	4.0	91.7
TP-1	492633.07	1352278.26	104.6	2.0	102.6
TP-2	492606.57	1352208.04	108.5	2.3	106.2
TP-3	492593.45	1352160.10	112.0	2.3	109.8
TP-4	492561.89	1352065.64	119.0	2.0	117.0
TP-5	492511.72	1352009.38	120.9	1.9	119.0
TP-6	492425.23	1351932.36	125.1	2.3	122.7
TP-7	492289.53	1351866.83	124.7	1.4	123.3
TP-8	492239.26	1351693.50	131.1	1.8	129.2
TP-9	492144.91	1351966.45	116.8	1.8	114.9
TP-10	492063.30	1351880.72	119.3	1.9	117.4
TP-11	492338.18	1351987.58	119.8	2.3	117.4
TP-12	492164.97	1352082.97	110.8	2.7	108.1

Table 13
Bedrock Elevations

U.S. Coast Guard Eastport Housing
Site Evaluation Report

Exploration No.	Northing (ft)	Easting (ft)	Ground Surface Elevation (ft)	Approximate Depth to Bedrock (ft)	Approximate Bedrock Elevation (ft)
TP-13	492508.49	1352322.26	102.0	2.4	99.6
TP-14	492350.44	1352403.74	95.6	2.7	92.9
TP-15	492463.55	1352206.13	109.5	2.0	107.5
TP-16	492296.16	1352319.50	99.0	2.0	97.0
TP-17	492374.68	1351704.47	129.9	1.8	128.0
TP-18	492109.74	1352170.28	103.6	2.0	101.6
TP-19	492255.23	1352161.50	102.8	4.0	98.8
TP-20	492071.95	1352057.07	111.4	2.0	109.4
TP-21	492500.83	1351687.88	130.1	2.3	127.7
TP-22	492719.13	1352228.00	109.6	4.0	105.6
TP-23	492706.37	1352114.68	117.5	3.3	114.1
TP-24	492610.34	1351915.42	127.4	3.0	124.4
MW-1	492426.77	1352208.41	109.4	2.0	107.4
MW-2	492356.82	1351969.09	121.1	3.0	118.1
MW-3	492264.86	1351687.31	131.3	1.5	129.8

Appendix A
Test Pit Logs

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
PERRY, MAINE	576 SHORE RD	USCG - Eastport

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-2 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–10	Silt Loam (SiL) (many fine roots)	Loose	Drk Redish Brown 5YR 3/4	None observed
10–20	gravelly Silt Loam	Friable	yellowish Red 5YR 5/6	None observed
20–27	gravelly Silt Loam	V. Firm	Dk. Red. Brn 2.5YR 3/4	Com. Med Distinct olive gray
27	27" Limit of observation		Red Sandstone Bedrock	

Depth Below Mineral Soil Surface (inches)

Soil Classification	Slope	Limiting Factor	
Profile ___ Condition ___	5-8 %	21 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-1 [ ] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–10	Silt Loam	Loose	5YR 3/4	None observed
10–16	gravelly SiL	Friable	5YR 5/6	
16–21			5YR 4/6	FFP
21–24	Channery	Firm	2.5YR 3/4	CMD
24	24" Limit of Observation		Red Sand stone BR	

Depth Below Mineral Soil Surface (inches)

Soil Classification	Slope	Limiting Factor	
Profile ___ Condition ___	5-8 %	16 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-3 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose (granular)	5YR 3/4	
10–19	gravelly SiL	Friable (granular)	5YR 5/6	
19–27		Firm (platy)	5YR 4/6	CMD
27	27" Limit of observation		RED Sand stone BR	

Depth Below Mineral Soil Surface (inches)

Soil Classification	Slope	Limiting Factor	
Profile ___ Condition ___	5-8 %	19 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-4 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose granular	5YR 3/4	None observed
10–18	gravelly SiL	Friable (granular)	5YR 5/6	
18–24		V. Firm Platy	2.5YR 3/4	CMD
24	24" Limit of observation		Red Sand stone BR	

Depth Below Mineral Soil Surface (inches)

Soil Classification	Slope	Limiting Factor	
Profile ___ Condition ___	5-8 %	18 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date
Charles H Sy[signature]	367	6/7/19

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION		Maine Dept.Health & Human Services Division of Environmental Health (207) 287-5672 Fax: (207) 287-3165
Town, City, Plantation	Street, Road, Subdivision	Owner's Name
Perry	576 SHORE RD	USCG · Eastport.

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-5 ☑ Test Pit ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Friable Granular	5YR 3/4	None observed
10–20	gravelly SiL	Friable	5YR 3/6	
20–23		V. FIRM	2.5YR 3/4	CMP
23	23" Limit of observations		Red Sand Stone BR.	

Soil Classification	Slope	Limiting Factor	
Profile / Condition	5-8 %	18 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-6 ☑ Test Pit ☐ Boring
2 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–5	COARSE SAND	Riding Ring substrate		
5–10	SiL	Friable	5YR 3/4	None observed
10–20	gravelly SiL	Friable	5YR 5/6	
20–28		FIRM	2.5YR 3/4	CMD
28	28" Limit of Observation		Red Sand Stone BR	

Soil Classification	Slope	Limiting Factor	
Profile / Condition	0-3 %	20 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-7 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–8	SiL	Friable	5YR 3/4	None observed
8–14	gravelly SiL		5YR 4/6	
14–17		FIRM	2.5YR 3/4	CMP
17	17" Limit of observation		Red Sand Stone BR.	

Soil Classification	Slope	Limiting Factor	
Profile / Condition	0-3 %	14 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-8 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–9	SiL	Friable	5YR 3/4	None observed
9–18	gravelly SiL		5YR 4/6	
18–22		FIRM	2.5YR 3/4	CMP
22	22" Limit of observation		Red Sand Stone Bedrock	

Soil Classification	Slope	Limiting Factor	
Profile / Condition	0-3 %	18 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Charles H Lyman	367	6/7/19
Site Evaluator Signature	SE #	Date

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
PERRY	576 SHORE RD	USCG - Eastport

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-9 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–~9	SiL (granular)	Loose	5YR 3/4	None observed
~9–~16	gravelly SiL	Friable	5YR 5/6	↓
~16–~22	↓	Firm	2.5YR 3/4	MMP

22" Limit of observations
Red Sandstone BR.

Soil Classification	Slope	Limiting Factor
1 Profile, C Condition	3 %	16 " [ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-10 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–~8	Sil	Loose (gran)	5YR 3/4	None observed
~8–~17	gravelly SiL	Friable (gran)	5YR 5/4	↓
~17–~23	↓	Firm (platy)	2.5YR 3/4	MMP

23" Limit of Observations
Red Sandstone BR

Soil Classification	Slope	Limiting Factor
1 Profile, C Condition	3 %	17 " [ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-11 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–~8	SiL	Loose	5YR 3/4	None observed
~8–~24	gravelly SiL	Friable	5YR 5/6	↓
~24–~28	↓	Firm	2.5YR 3/4	MMP

28" Limit of observations
Red Sandstone BR

Soil Classification	Slope	Limiting Factor
1 Profile, C Condition	3-5 %	24 " [ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-12 ☑ Test Pit ☐ Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth (inches)	Texture	Consistency	Color	Mottling
0–~11	SiL	Loose (Granular)	5YR 3/4	None observed
~11–~19	gravelly SiL	Friable	5YR 5/6	↓
~19–~32	↓	Firm / vFirm	2.5YR 3/4	MMP

32" Limit of Observations
Red Sandstone BR

Soil Classification	Slope	Limiting Factor
1 Profile, C Condition	___ %	19 " [ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date
Charles H [signature]	367	6/7/19

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION	Maine Dept.Health & Human Services Division of Environmental Health (207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
PERRY	576 Shore RD	USCG - EASTPORT

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-13 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose (granular)	5YR 3/4	None observed
10–20	gravelly SiL	Friable	5YR 5/6	
20–29	(Channery)	FIRM	2.5YR 3/4	MMP
29	29" Limit of observations		Red SAND stone BR	

Soil Classification	Slope	Limiting Factor	
1 Profile C Condition	3-5 %	20 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-14 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose	5YR 3/4	None observed
10–24	Gravelly SiL	Friable	5YR 5/6	
24–32		Firm	2.5YR 3/4	MMP
32	32" Limit of observation		Red SAND stone BR	

Soil Classification	Slope	Limiting Factor	
1 Profile C Condition	5-8 %	32 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-15 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose	5YR 3/4	None observed
10–19	gravelly SiL	Friable	5YR 5/6	
19–24		Firm	2.5YR 3/4	MMP
24	24" Limit of observations		Red SAND stone BR	

Soil Classification	Slope	Limiting Factor	
1 Profile C Condition	5-8 %	24 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-16 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	SiL	Loose (granular)	5YR 3/4	None observed
10–18	gravelly SiL	Friable (granular)	5YR 5/6	
18–24		Firm (Natty)	2.5YR 3/4	MMP
24	24" Limit of observations		Red SAND stone BR	

Soil Classification	Slope	Limiting Factor	
1 Profile C Condition	5-8 %	18 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Charles H. [signature]	367	6/7/19	Page __ of __ HHE-200 Rev. 05/08
Site Evaluator Signature	SE #	Date	

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
Perry	576 Shore RD	USCG - EastPort

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-17 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–~7	SiL	Loose (granular)	5YR 3/4	None observed
~7–~15	gravelly SiL	Friable	5YR 5/6	↓
~15–~22	↓	Firm	2.5YR 3/4	MMP
22	22" Limit of observation		Red Sand stone BR.	

Soil Classification	Slope	Limiting Factor	
1 Profile / C Condition	0 %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-18 [x] Test Pit [ ] Boring
2-7 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–~8	SiL	Loose	5YR 3/4	None observed
~8–~15	gravelly SiL	Friable	5YR 5/6	↓
~15–~24	↓	Firm	2.5YR 3/4	MMP
24	24" Limit of observation		Red Sand stone BR	

Soil Classification	Slope	Limiting Factor	
1 Profile / C Condition	3-5 %	16 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-19 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–~12	SiL	Friable	5YR 3/4	None
~12–~32	gravelly SiL	↓	5YR 5/6	
~32–~40	↓	↓		FMP
~40–~50	↓	Firm	2.5YR 3/4	MMP
50	BR (TYP)			

Soil Classification	Slope	Limiting Factor	
1 Profile / C Condition	3-5 %	32" / 42 "	[x] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth 48" Limit of obs.

Observation Hole TP-20 [x] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–~7	SiL	Loose	5YR 3/4	None observed
~7–~19	gravelly SiL	Friable	5YR 5/6	↓
~19–~24	↓	Firm	2.5YR 3/4	MMP
24	24" Limit of Obs.			

Soil Classification	Slope	Limiting Factor	
1 Profile / C Condition	3-5 %	19 "	[ ] Ground Water [x] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date
Charles H. Lyn[illegible]	367	6/7/18

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept.Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
Perry	576 Shore Rd,	USCG - East Port

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-21 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–8	SiL	Loose (granular)	5YR 3/4	None observed
8–20	gravelly SiL	Friable	5yR 5/4	↓
20–28	↓	firm	2.5yr 3/4	MMP
28	28" Limit of Observation		Red SANDSTONE BR	

Soil Classification	Slope	Limiting Factor	
Profile 1, Condition C	0 %	20 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-22 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–17	1.5' fill over Native Soil		Gravelly SiL	None observed
17–24	SiL	Friable	5y 3/4	↓
24–36	gravelly SiL	Friable	5yR 5/6	↓
36–45	↓	firm	2.5yR 3/4	MMP
45	48" Limit of obs.		Red SANDSTONE BR	

Soil Classification	Slope	Limiting Factor	
Profile 1, Condition C	3-5 %	38 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP-23 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–11	1.0' fill over Native Soil			Brick - cobble gravel SiL
11–21	SiL	Friable	5yR 3/4	None observed
21–30	gravelly SiL	↓	5yR 5/6	↓
30–40	↓	firm	2.5yR 3/4	MMP
40	40" Limit of obs.		Red Sand stone BR	

Soil Classification	Slope	Limiting Factor	
Profile 1, Condition C	3-5 %	31 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Observation Hole TP-24 [✓] Test Pit [ ] Boring
2-3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–11	SiL	Friable	5y 3/4	None observed
11–24	gravelly SiL	↓	5yR 5/6	↓
24–36	↓	firm	2.5yR 3/4	MMP
36	36" Limit of Observations		Red SAND STONE BR	

Soil Classification	Slope	Limiting Factor	
Profile 1, Condition C	0 %	26 "	[ ] Ground Water [✓] Restrictive Layer [ ] Bedrock [ ] Pit Depth

Site Evaluator Signature	SE #	Date
Charles A. Lyn[illegible]	367	6/7/9

Appendix B-1

Nitrate Impact Assessment Calculations

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
DUPLEX = 2 - THREE BEDROOM UNITS

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	81756	MG/DAY	
MASS LOADING FROM PRECIPITATION =	1,450	MG/DAY	
MASS LOADING FROM GROUNDWATER =	1982	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**540**	GAL/DAY	WW DISP RULES
=	2044	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**2400**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**100**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**25**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	350	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	37400	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	2901	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	100	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATED FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	3964	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	9.8	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
DUPLEX = 2 - THREE BEDROOM UNITS - WETLAND NITRATE REMOVAL

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	81756	MG/DAY	
MASS LOADING FROM PRECIPITATION =	384	MG/DAY	
MASS LOADING FROM GROUNDWATER =	1982	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**540**	GAL/DAY	WW DISP RULES
=	2044	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**2400**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**100**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**25**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	75	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	9900	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	768	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	100	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATED FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	3964	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	12.7	MG/LITER	
NITRATE REDUCTION FACTOR FOR WETLANDS =	0.40		USEPA/GROUNDWATER JOURNAL - SEE TEXT
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	7.6	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
   (Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
   = NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
DUPLEX = 2 - FOUR BEDROOM UNITS

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	109008	MG/DAY	
MASS LOADING FROM PRECIPITATION =	1,881	MG/DAY	
MASS LOADING FROM GROUNDWATER =	2576	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**720**	GAL/DAY	WW DISP RULES
=	2725	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**3000**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO			
GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**130**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**25**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	350	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	48500	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	3762	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	130	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATED FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	5153	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	9.9	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
MAINTENANCE/COMMUNITY BUILDING

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	22710	MG/DAY	
MASS LOADING FROM PRECIPITATION =	221	MG/DAY	
MASS LOADING FROM GROUNDWATER =	991	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**150**	GAL/DAY	WW DISP RULES
=	568	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**700**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**50**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**15**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	100	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	5700	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	442	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	50	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATED FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	1982	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	8.7	MG/LITER	

NOTES:
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2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
SINGLE FAMILY THREE BEDROOM HOME

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	40878	MG/DAY	
MASS LOADING FROM PRECIPITATION =	628	MG/DAY	
MASS LOADING FROM GROUNDWATER =	1189	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**270**	GAL/DAY	WW DISP RULES
=	1022	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**1200**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**60**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**20**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	250	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	16200	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	1257	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	60	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATE FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	2378	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	9.6	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
SINGLE FAMILY THREE BEDROOM HOME - WETLAND NITRATE REMOVAL

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	40878	MG/DAY	
MASS LOADING FROM PRECIPITATION =	221	MG/DAY	
MASS LOADING FROM GROUNDWATER =	1189	MG/DAY	

WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**270**	GAL/DAY	WW DISP RULES
=	1022	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**1200**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**60**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**20**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	75	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	5700	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	442	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	60	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATE FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	2378	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	11.6	MG/LITER	
NITRATE REDUCTION FACTOR FOR WETLANDS =	0.40		USEPA/GROUNDWATER JOURNAL - SEE TEXT
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	6.9	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

NITRATE-N IN GROUNDWATER
INDIVIDUAL PLUME CALCULATION
FOUR BEDROOM SINGLE FAMILY HOME

USCG SITE DEVELOPMENT EVALUATION
PERRY, MAI NE
7/12/2019

NITRATE-N CONCENTRATIONS AND MASS LOADINGS	VALUE	UNITS	BASIS
WASTE WATER EFFLUENT CONCENTRATION (Cef) =	40	MG/LITER	DEP SITE LAW 7/97
PRECIPITATION CONCENTRATION (Cp) =	0.5	MG/LITER	DEP SITE LAW 7/97
BACKGROUND GROUNDWATER CONCENTRATION (Cbgw) =	0.5	MG/LITER	ON-SITE SAMPLE RESULTS 6/19
MASS OF NITROGEN FERTILIZER PER SQ. FT. LAWN =	102	MG/YEAR/SQ.FT.	DEP SITE LAW 7/97
SQ. FT. OF LAWN FERTILIZED PER YEAR =	7500	SQ. FT.	DEP SITE LAW 7/97
NITRATE-N LEACHED FROM FERTILZER (Mf) =	2099	MG/DAY	
MASS LOADING FROM WASTE WATER EFFLUENT =	54504	MG/DAY	
MASS LOADING FROM PRECIPITATION =	931	MG/DAY	
MASS LOADING FROM GROUNDWATER =	1486	MG/DAY	
WATER FLOWS			
VOLUMETRIC FLOW RATE OF WASTE WATER (Qef) =	**360**	GAL/DAY	WW DISP RULES
=	1363	LITER/DAY	
VOLUMETRIC FLOW RATE OF PRECIPITATION RECHARGE:			
REQUIRED AREA OF LEACH FIELD, Alf =	**1500**	SQ. FT.	ON-SITE EVALUATION
LENGTH OF LEACH FIELD PERPENDICULAR TO GROUNDWATER FLOW (PLUME WIDTH), Wlf =	**75**	FT.	WW DISP RULES
WIDTH OF LEACH FIELD PARALLEL TO FLOW =	**20**	FT.	WW DISP RULES
PLUME LENGTH TO DOWNGRADIENT CONC. LIMIT (L) =	300	FT.	ASSUMED
AREA OF PLUME INCLUDING LEACH FIELD (A) =	24000	SQ. FT.	
PRECIPITATION RECHARGE (P) =	12	INCHES/YEAR	DEP SITE LAW 7/97
VOLUMETRIC FLOW RATE (Qp) =	1862	LITERS/DAY	
VOLUMETRIC FLOW RATE OF GROUNDWATER:			
WIDTH OF MIXING ZONE (Wdg) =	75	FT.	WW DISP RULES
DEPTH OF MIXING ZONE (Dgw) =	20	FT.	UPPER BEDROCK AND SOIL TEST PIT LOGS
HORIZONTAL HYDRAULIC GRADIENT (i) =	0.050	FT./FT.	ON-SITE GROUNDWATER ELEVATIONS
HYDRAULIC CONDUCTIVITY (K) =	1.4	FT./DAY	ESTIMATED FOR BEDROCK (CONGLOMERATE)
VOLUMETRIC FLOW RATE (Qgw) =	2973	LITERS/DAY	
NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME =	9.5	MG/LITER	

NOTES:
1. DEP 1997 = Maine DEP Site Location of Development Permit Application, 7/97.
2. WW DISP RULES = Maine Dept. of Human Services Subsurface Wastewater Disposal Rules, 1996.
3. Equation is as follows:
(Cef*Qef + Cp*Qp + Cbgw*Qgw + Mf)/(Qef + Qp + Qgw)
= NITRATE-N CONCENTRATION IN GROUNDWATER AT DOWNGRADIENT END OF PLUME.

Appendix B-2
Drilling Logs for New Wells

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing Perry Project Location: Perry, ME Project No.: 335000007.002.002	Boring ID: MW-1 ~~IMW~~ Page No. 1 of: 3
Boring Location: 576 Shore Road Perry ME	Refusal Depth: NA / Total Depth: 320' BGS	Bore Hole ID/OD: 5 7/8 / 6.5
Weather: Mostly cloudy, 60-65°F.	Soil Drilled: 2.0' / Method: Air Hammer	Casing Size: 6" ID Steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 6/6/19 / Date Completed: 6/6/19	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe / Checked By:	
Reference Elevation: TBD	Water Level: 2.23' TOC/0.15' BGS Time: 0800 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
0.0				0-0.5' Dark brown loamy topsoil with lots of roots and organic material. 0.5-1.5 Brown to dark reddish brown fine to coarse sand and gravel with some cobbles, silt and organics loose fill 1.5-2.0 Dense till material fine to coarse sand and gravel with some silt. Bedrock at ≈ 2' BGS		
	40			Drilled with large air hammer and reaming bit to ≈ 38' BGS installed 40' of 6" ID steel casing seated at ≈ 38' BGS with air hammer. Rock appears to be reddish brown sandstone based of chips from drill return Perry sandstone/conglomerate.		
	60			Dark reddish brown sandstone with some gray to dark gray interbeds. Perry sandstone/conglomerate	60'	1322
	80			Primarily dark reddish brown sandstone with some dark gray to greenish gray interbeds.	80'	1330
	100			Gray to dark gray sandstone with traces of reddish brown layers/interbeds.	100	1341
	120			Gray to dark gray sandstone	120	No obvious fractures. 1352
	140			Gray to dark gray sandstone Dark reddish brown sandstone with calcite/quartz	140	Change at ≈ 135' BGS 1403

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Perry Project Location: Perry, ME Project No.: 335000007.002.002	Boring ID: ~~MW~~ MW-1 Page No. 2 of: 3
Boring Location: 576 Shore Road Perry ME	Refusal Depth: NA / Total Depth: 320' BGS	Bore Hole ID/OD: 5 7/8/6.5"
Weather: Mostly cloudy 65°F, breeze	Soil Drilled: 2' / Method: Air Hammer	Casing Size: 6" ID Steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 6/6/19 / Date Completed: 6/6/19	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe / Checked By:	
Reference Elevation: TBD	Water Level: 2.23' TOC/0.5' BGS / Time: 0800 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
~~0.0~~ 140				Reddish brown sandstone with some gray interbeds. Perry sandstone/conglomerate.		
160					160	1427
				Becomes primarily gray to dark gray sandstone		Change at ≈175' BGS
180					180	1436
				Dark reddish brown sandstone with some gray to dark gray interbeds.		
200					200	1446
				Primarily dark reddish brown sandstone with significant amount of interbedded gray to dark gray sandstone.		
220					220	1457
240					240	1509
260					260	1519
280					280	1530
				A		
300					300	1540

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Perry		Boring ID: MW-1 ~~MW~~
	Project Location: Perry, ME		Page No. 3
	Project No.: 335000007.002.002		of: 3
Boring Location: 576 Shore Rd Perry ME.	Refusal Depth: NA	Total Depth: 320' BGS	Bore Hole ID/OD: 5 7/8/6.5"
Weather: Partly sunny 70°F, light breeze	Soil Drilled: 2-	Method: Air Hammer	Casing Size: 6" ID Steel
Subcontractor: Shannon Drilling		Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 6/6/19	Date Completed: 6/6/19	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe	Checked By:	
Reference Elevation: TBD	Water Level: 2.23' TOC/0.5' BGS	Time: 0800 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
~~0.0~~ 300				Change to dark reddish brown sandstone Perry sandstone/conglomerate.		
320					320	1551
				Bottom of boring = 320' BGS Checked flow from borehole after blowing for 13 minutes. 1 Gallon/19.1 sec ≈ 3.1 GPM		

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Perry Project Location: Perry, ME Project No.: 335000007.002.002	Boring ID: MW-2 Page No. 1 of: 3

Boring Location: 526 Shore Rd. Perry ME	Refusal Depth: NA	Total Depth: 321' BGS
Weather: Partly sunny 65-70°F	Soil Drilled: 3.0	Method: Air Hammer
Subcontractor: Shannon Drilling		Protection Level: D
Driller: Chris Getchell	Date Started: 6/5/19	Date Completed: 6/6/19
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe	Checked By:
Reference Elevation: TBD	Water Level: 5.24' TOC/3.7' BGS	Time: 0803 6/13/19

Bore Hole ID/OD: 5 7/8/6.5	
Casing Size: 6" ID Steel	
Sampler: —	
Sampler ID/OD: —	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
0.0				0-0.5' Dark brown loamy organic topsoil 0.5-2.6 Dark reddish brown fine to coarse sand and gravel with a little cobbles and silt. Loose till. 2.6-3 Dark reddish brown dense fine to coarse sand and gravel with a little cobbles and silt (Basal Till). Installed 40' of 6" ID steel casing to ≈38' BGS. Rock is primarily reddish brown sandstone		
40					41'	1539
				Dark gray to dark reddish brown sandstone primarily reddish brown. Perry sandstone/conglomerate.		
60					61	1547
				Dark gray to gray sandstone with some dark reddish brown layers.		No detectable fractures or increase in water.
80					81	1556
				Primarily dark gray sandstone very soft 81-88' BGS		
100					101	1608
				Dark gray sandstone to ≈116' BGS then change to reddish brown sandstone		No obvious fractures
120					121	1619
				Dark reddish brown sandstone with some dark gray layers/interbeds.		
140					141	1632

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Perry 1	Boring ID: ~~MW~~ MW-2
	Project Location: Perry, ME	Page No. 2
	Project No.: 3350060007.002.002	of: 3
Boring Location: 576 Shore Rd. Perry ME	Refusal Depth: N/A / Total Depth: 321	Bore Hole ID/OD: 5 7/8/6.5
Weather: Partly sunny 65-70°F,	Soil Drilled: 3.0 / Method: Air Hammer	Casing Size: 6" ID Steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: —
Driller: Chris Getchell	Date Started: 6/5/19 / Date Completed: 6/6/19	Sampler ID/OD: —
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe / Checked By:	
Reference Elevation: TBD	Water Level: 5.24' TOC/3.7' BGS / Time: 0803 6/13/19	

Depth (feet bgs) ~~0.0~~	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
150				Primarily dark reddish brown sandstone with some dark grey layers/interbeds. Perry sandstone/conglomerate.		
160					161	1643
170						
180					181	1654
190						
200					201	Some large fragments near 200' 1704
210						No obvious fractures
220					221	1716
230						
240					241	1727
250				Rock becoming slightly clearer reddish brown than above.		Blew out borehole for 10 minutes Measured flow from borehole at 261' = 1.4 GPM
260					261	1738
270				Primarily dark reddish brown sandstone/conglomerate with some dark grey sandstone and large amounts of calcite/quartz.		6/6/19 1018
280					281	1029
290				Grading to entirely reddish brown sandstone/conglomerate.		
					301	1040

NOTES:

SOIL BORING LOG

SOIL BORING LOG		
wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Perry Project Location: Perry, ME Project No.:	Boring ID: ~~MW~~ MW-2 Page No. 3 of: 3
Boring Location: 576 Shore Rd. Perry ME	Refusal Depth: N/A — Total Depth: 321'	Bore Hole ID/OD: 5 7/8 / 6.5
Weather: Overcast, showers, 55-60°F	Soil Drilled: 3.0 — Method: Air Hammer	Casing Size: 6" ID steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: —
Driller: Chris Getchell	Date Started: 6/5/19 — Date Completed: 6/6/19	Sampler ID/OD: —
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe — Checked By:	
Reference Elevation: TBD	Water Level: 5.24' TOC/3.7' BGS — Time: 0803 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
~~0.0~~	300				301'	1040
				Reddish brown sandstone/conglomerate		
	310					change at ≈ 315' BGS
				Dark gray sandstone/conglomerate		
	320				321	1051
				Bottom of boring = ≈321' BGS Checked flow from borehole after blowing for 13 minutes Rate = 2.6 GPM		

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood.

511 Congress Street, Portland Maine 04101

Project Name: USCG Housing - Perry		Boring ID: MW-3 ~~MW~~
Project Location: Perry, ME		Page No. 1
Project No.: 3350000607.002.002		of: 3
Boring Location: 576 Shore Rd Perry ME	Refusal Depth: — / Total Depth: 401' BGS	Bore Hole ID/OD: 6.5/5.7/8
Weather: Sunny to Partly Cloudy 55-65	Soil Drilled: 1.5' / Method: Air Hammer	Casing Size: 6" steel (ID)
Subcontractor: Shannon Well Drilling	Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 6/3/19 / Date Completed: 6/5/19	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rauch FG / Checked By:	
Reference Elevation: TBD	Water Level: 17.04' TOC/15.6' BGS Time: 0814 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
0.0		NA	NA	0-0.5' Dark brown loamy topsoil 0.5-1.1 Brown to reddish brown fine to coarse sand and gravel with some cobbles, loose till. 1.1-1.5 Dark reddish brown dense fine to coarse sand and gravel with cobbles and a trace of silt (Till)		
1.5'				Top of bedrock = 1.5' BGS Drilled with 6.5" air hammer to 38' BGS and installed 6" ID steel casing. Bedrock is reddish brown sandstone Seated casing in bedrock at ≈38' BGS with air hammer		No water evident 0-38' BGS
40'				Drilled with 5 7/8 inch air hammer to 41' BGS	41'	1325
50				Reddish brown shaly sandstone Perry sandstone/conglomerate.		
60				— — — — — — — — — —	61'	1340
70				65-67 Gray to dark gray sandstone Dark gray to black shaley sandstone with some reddish layers (based on chips) No obvious fractures encountered.		
80					81'	1355
90				81-98 Similar to above. Change to reddish brown sandstone at ≈98'		
100					101'	1405
110				Bedrock appears to be a mix of reddish brown and grey to dark gray sandstone layers		
120				Little to no flow from borehole at 121'	121'	1415
				Drilled to 130' - having problems with drill had to shut down		

NOTES:

SOIL BORING LOG

SOIL BORING LOG

wood.	Project Name: USCG Housing - Perry	Boring ID: MW-3 ~~MW~~
	Project Location: Perry, ME	Page No. 2
511 Congress Street, Portland Maine 04101	Project No.: 335000007.002.002	of: 3
Boring Location: 576 Shore Rd Perry ME	Refusal Depth: — / Total Depth: 401' BGS	Bore Hole ID/OD: 6.5/5 7/8
Weather: Sunny to Partly cloudy 55-65°	Soil Drilled: 1.5' / Method: Air Hammer	Casing Size: 6" ID steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 6/3/19 / Date Completed: 6/5/19	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rauwerdink / Checked By:	
Reference Elevation: TBD	Water Level: 17.04' TOC/15.6' BGS / Time: 0814 6/13/19	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
~~0.0~~				Tues 6/4/19 - Mechanic to check rig, C Getchell driving to Bangor to get parts - down for the day.		
130				Reddish brown sandstone with some dark grey interbeds. Trace calcite		
140					141'	1005
150				Reddish brown sandstone with some dark gray interbeds Perry sandstone/conglomerate		
160					161'	1015
170						
180					181'	1025
190						
200					201'	1041
210						
220					221'	1051
230				Rock becomes primarily reddish brown sandstone		
240					241'	1103
250				No obvious fractures detected No apparent flow from borehole.		
260					261'	1114
270				Very consistent dark reddish gray sandstone.		
					281'	1126

NOTES:

SOIL BORING LOG		
wood. 511 Congress Street, Portland Maine 04101	Project Name: USGG Housing - Perry Project Location: Perry, ME Project No.: 335000007.002.002	Boring ID: ~~IMW~~ MW-3 Page No. 3 of: 3
Boring Location: 576 Shore Rd. Perry ME	Refusal Depth: NA — Total Depth: 401' BGS	Bore Hole ID/OD: 5 7/8 / 6.5
Weather: Sunny to Partly cloudy 55-65°F	Soil Drilled: 1.5' — Method: Air Hammer	Casing Size: 6" ID Steel
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: —
Driller: Chris Getchell	Date Started: 6/3/19 — Date Completed: 6/5/19	Sampler ID/OD: —
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe — Checked By:	
Reference Elevation: TBD	Water Level: 17.04' TOC / 15.6' BGS — Time: 0814 6/13/19	

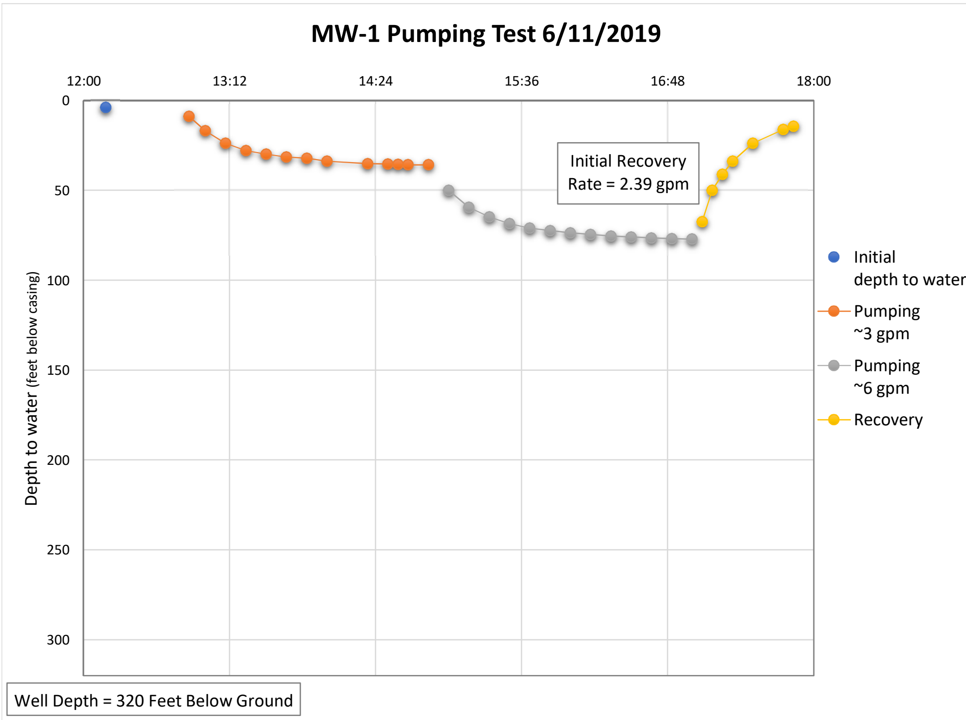
Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	Monitoring	Sample Description and Classification	USCS Group Symbol	Remarks
~~0.0~~ 281						1126
290				Very consistant dark reddish brown sandstone Perry sandstone/conglomerate		
300					301'	1140
310				Primarily Gray to dark gray sandstone		
320					321'	1153
330				Dark reddish brown and dark gray interbedded sandstone Possible small flow from borehole		
340					341'	1204
350				Gray to dark gray sandstone		
360					361'	1219
370						
380					381'	1234
390						
400					401'	1255
				Bottom of boring = ≈401' BGS Checked flow from borehole after blowing for about 10 minutes. Rate = 1.6 GPM		

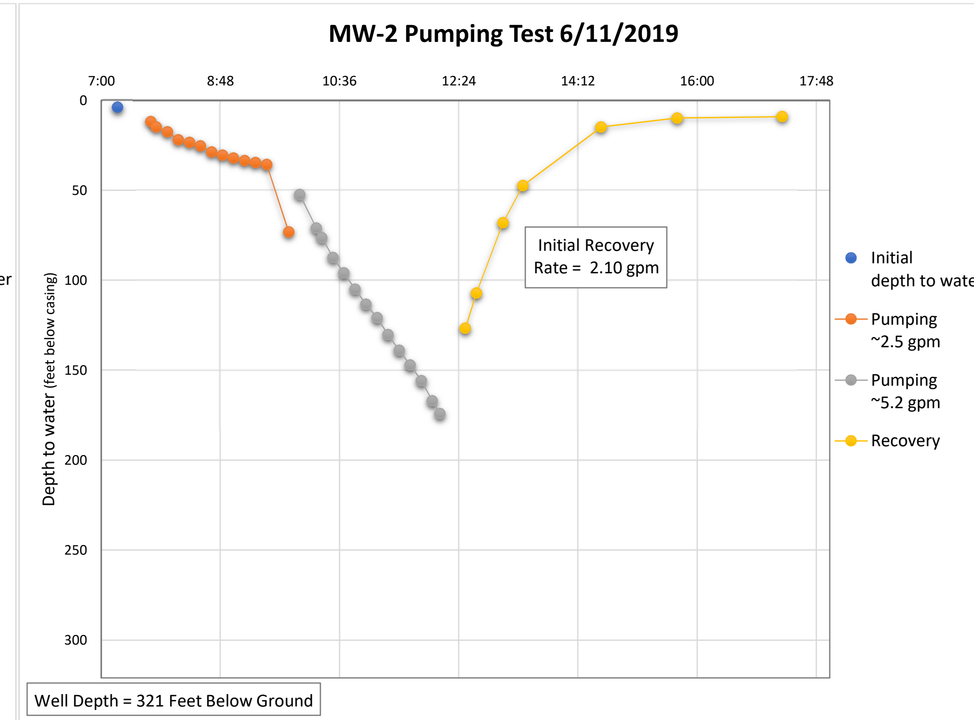
NOTES:

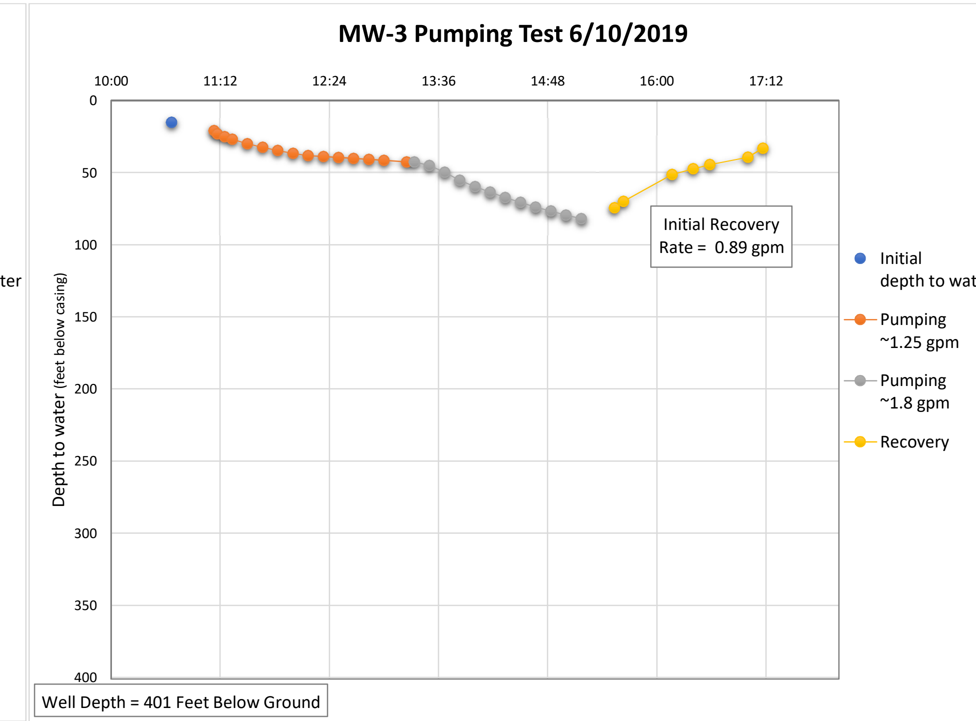
SOIL BORING LOG

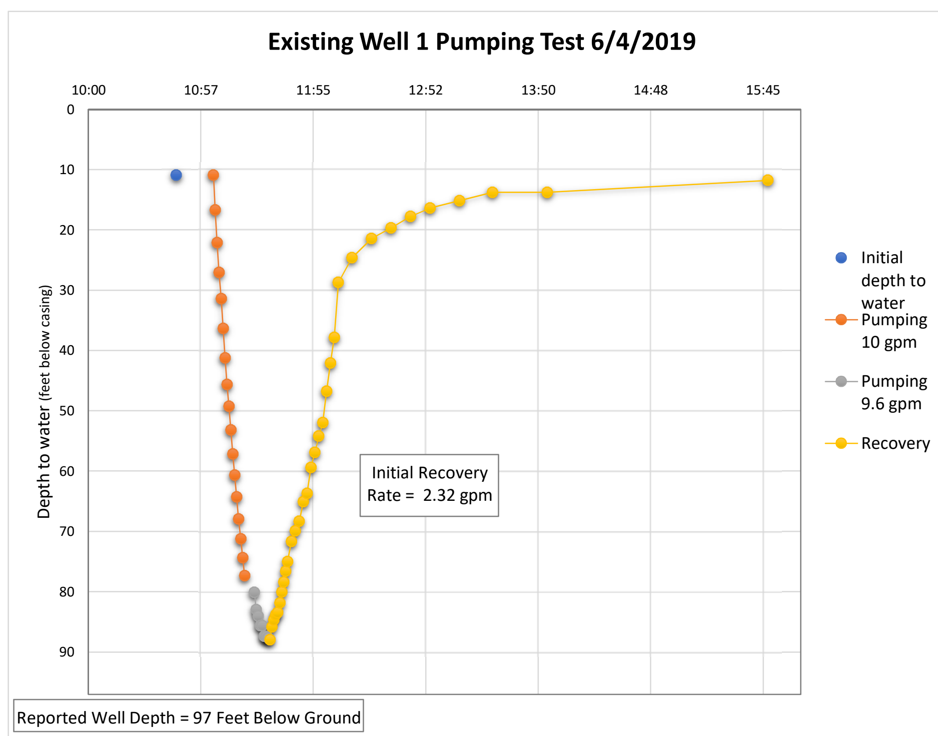
Appendix B-3
Specific Capacity Pumping Test Results

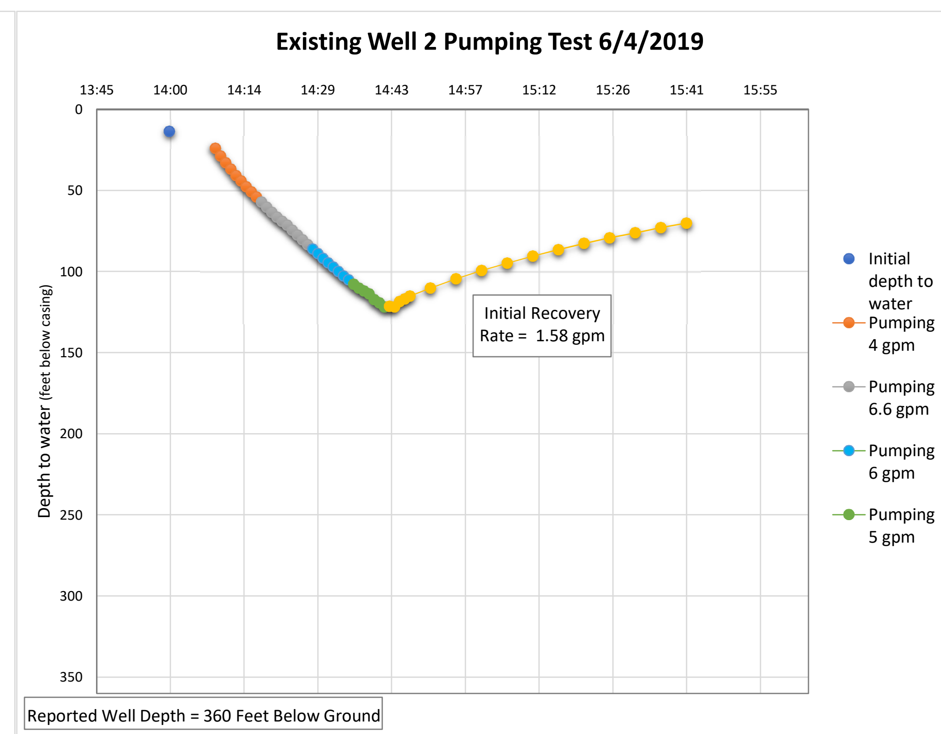
Attachment B
Specific Capacity Pumping Tests
United States Coast Guard
Eastport Housing Site Evaluation











Created by: LMT 7/11/2019
Checked by: JBR 7/11/2019

Appendix B-4
Field Data Records Low Flow Sampling

LOW FLOW GROUNDWATER SAMPLING RECORD

wood.

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: USCG Eastport Housing Site Development		LOCATION ID: MW-1	DATE: 6/12/19
PROJECT NUMBER: 335000007.002.002		START TIME: 1340	END TIME: 1540
SAMPLE ID: MW-1	SAMPLE TIME: 1530	SITE NAME/INSTALLATION: USCG-Perry	PAGE: 2 OF 2

WELL DIAMETER (IN.): [ ] 1 [ ] 2 [ ] 4 [X] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	–		
LOCKED		X	
COLLAR		X	

INITIAL DTW (BMP): 2.49 FT	FINAL DTW (BMP): 2.74 FT	PROT. CASING STICKUP (AGS): 1.7 FT	TOC/TOR DIFFERENCE: NA FT
WELL DEPTH (BMP): ≈ 321.5 FT	SCREEN INTERVAL: 40-321.5 OPEN BOREHOLE FT	PID AMBIENT AIR: NA PPM	REFILL TIMER SETTING: NA SEC
WATER COLUMN: 319.0 FT	DRAWDOWN VOLUME: 0.38 GAL (final DTW- initial DTW X well diam. squared X 0.041)	PID WELL MOUTH: NA PPM	DISCHARGE TIMER SETTING: NA SEC
CALCULATED GAL/VOL: 469 GAL (water column X well diameter^2 X 0.041)	TOTAL VOL. PURGED: 3.6 GAL (mL per minute X total minutes X 0.00026 gal/mL)	DRAWDOWN/ TOTAL PURGED: 0.1	PRESSURE TO PUMP: NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	ORP REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1342	BEGIN PURGING									
1515	2.74	130	10.0	0.176	4.6	8.0	12	27	≈163	
1520	2.74	125	10.1	0.176	4.6	8.0	12	28		Salinity 0.08ppt
1525	2.74	125	10.1	0.176	4.6	8.0	11	27		

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	10	0.18	4.6	8.0	11	27

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] WATTERA [ ] OTHER [ ] OTHER

DECON FLUIDS USED: [X] ~~ALCONOX~~ [ ] DEIONIZED WATER [X] ~~POTABLE WATER~~ [ ] NITRIC ACID [ ] HEXANE [ ] METHANOL [X] OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [X] ~~HDPE TUBING~~ [X] LDPE TUBING [ ] OTHER [ ] OTHER [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] OTHER [ ] OTHER [ ] OTHER

EQUIPMENT USED: [X] WL METER Heron [ ] PID [X] WQ METER YSI 556 MPS [X] TURB. METER HACH 2100 Q [X] PUMP Geopump [ ] OTHER [ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	Metals	200.5	As, Pb, Fe, Mn	N	4°C/HNO3	500ml poly	
✓	Uranium	200.8	U	N	" "	with Metals	
✓	Flouride/Nitrate/Nitrite	300	–	N	4°C	250ml poly	
✓	Radon	–	–	N	4°C	2x40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [X]

NUMBER OF GALLONS GENERATED: 3.6

NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NOTES

DEVIATIONS FROM THE WORK PLAN

Sampler Signature: [signature] Print Name: Jerry Rumcliffe

Checked By: Date:

LOW FLOW GROUNDWATER SAMPLING RECORD

wood.

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: USCG Eastport Housing Site Development		LOCATION ID: MW-1	DATE: 6/12/19
PROJECT NUMBER: 335000007.002.002		START TIME: 1340	END TIME: 1540
SAMPLE ID: MW-1	SAMPLE TIME: 1530	SITE NAME/INSTALLATION: USCG-Perry	PAGE 1 OF 2

WELL DIAMETER (IN.): [ ] 1 [ ] 2 [ ] 4 [✓] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [✓] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [ ] TOP OF RISER (TOR) [✓] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR		X	

INITIAL DTW (BMP)	2.49 FT	FINAL DTW (BMP)	2.74 FT	PROT. CASING STICKUP (AGS)	1.7 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	≈321.5 FT	SCREEN INTERVAL	40-321.5 OPEN HOLE BR FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	319 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.38 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	464 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.6 GAL	DRAWDOWN/ TOTAL PURGED	0.1	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	ORP REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1342	BEGIN PURGING									
1400	2.68	165	9.8	0.176	5.3	8.1	19	31	≈163	
1410	2.72	175	9.7	0.176	4.9	7.6	41	30		
1420	2.73	155	10.1	0.175	4.8	7.7	33	28		Salinity = 0.08 ppt
1430	2.74	150	9.6	0.176	4.8	7.8	25	29		
1435	2.73		9.8	0.175	4.7	7.8	25	26		
	Phone call to/from Pete B.									
1450	2.72	130	10.2	0.176	4.8	8.0	18	30		
1455	2.73	140	10.1	0.176	4.7	8.0	16	29		
1500	2.73	145	9.9	0.176	4.8	8.0	15	30		
1505	2.74	135	9.8	0.176	4.7	8.0	14	30		
1510	2.74	130	10.0	0.176	4.5	8.0	13	27		
FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)										
			10	0.18	4.6	8.0	11	27		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] WATTERA [ ] OTHER [ ] OTHER

DECON FLUIDS USED: [X] ~~ALCONOX~~ [ ] DEIONIZED WATER [X] ~~POTABLE WATER~~ [ ] NITRIC ACID [ ] HEXANE [ ] METHANOL [X] OTHER Dedicated

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [X] ~~HDPE TUBING~~ [X] LDPE TUBING [ ] OTHER [ ] OTHER [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] OTHER [ ] OTHER [ ] OTHER

EQUIPMENT USED: [X] WL METER Heron [ ] PID [X] WQ METER YSI 556 MPS [X] TURB. METER HACH 2100Q [X] PUMP Geopump [ ] OTHER [ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	Metals	200.5	As, Pb, Mn, Fe	N	HNO3/4°C	500ml Poly	
✓	Uranium	200.8		N	HNO3/4°C	w/ metals	
	Flouride/Nitrate/Nitrite	300	–	N	4°C	250ml Poly	
	Radon	–	–	N	4°C	2x40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [✓]

NUMBER OF GALLONS GENERATED: 3.6

NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NOTES

DEVIATIONS FROM THE WORK PLAN

Sampler Signature: [signature] Print Name: Jerry Rawcliffe

Checked By: Date:

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

wood.

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	LOCATION ID	DATE
USCG Eastport Housing Site Development	MW-2	6/12/19
PROJECT NUMBER 335000007.002.002	**START TIME** 1110	**END TIME** 1340
SAMPLE ID MW-2 / **SAMPLE TIME** 1330	**SITE NAME/INSTALLATION** USCG-Perry	**PAGE** 1 OF 2

WELL DIAMETER (IN.) ☐ 1 ☐ 2 ☐ 4 ☒ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES) ☒ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP) ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR		✓	

INITIAL DTW (BMP)	5.38 FT	FINAL DTW (BMP)	6.20 FT	PROT. CASING STICKUP (AGS)	1.5 FT
TOC/TOR DIFFERENCE	N/A FT	WELL DEPTH (BMP)	≈323 FT	SCREEN INTERVAL	30-323' FT OPEN HOLE
PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC	WATER COLUMN	317.6 FT
DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	1.2 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	467 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	4 GAL	DRAWDOWN/ TOTAL PURGED	0.3
PRESSURE TO PUMP	NA PSI				

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1117	BEGIN PURGING									
1125	5.84	160	9.4	0.175	6.6	7.5	18	21	≈165	
1135	5.96	175	9.2	0.177	6.3	7.4	39	4.2		Salinity = 0.08 ppt
1140	6.02	175	9.2	0.179	6.2	7.4	38	3.6		
1145	6.07	135	9.4	0.179	5.9	7.5	36	5.6		
1150	6.04	135	9.5	0.179	6.1	7.5	35	3.0		
1155	6.05	145	9.6	0.180	6.0	7.6	32	4.3		
1205	6.07	125	9.6	0.179	5.8	7.7	28	2.8		
1210	6.07	110	9.9	0.179	5.8	7.7	27	4.6		Sal = 0.09 ppt
1215	6.08	110	10.1	0.180	5.9	7.7	26	3.6		
1220	6.08	110	10.0	0.180	5.8	7.7	24	2.8		
1225	6.09	110	10.1	0.180	5.7	7.7	23	7.3		
FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)			10	0.18	5.8	7.8	14	1.7		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED
☒ PERISTALTIC	~~☒ ALCONOX~~	☒ SILICON TUBING	☐ S. STEEL PUMP MATERIAL	☒ WL METER Heron
☐ SUBMERSIBLE	☐ DEIONIZED WATER	~~☒ HDPE TUBING~~	☐ PVC PUMP MATERIAL	☐ PID
☐ BLADDER	~~☒ POTABLE WATER~~	☒ LDPE TUBING	☐ GEOPROBE SCREEN	☒ WQ METER YSI 556 MPS
☐ WATTERA	☐ NITRIC ACID	☐ OTHER	☐ OTHER	☒ TURB. METER Hach 2100Q
☐ OTHER	☐ HEXANE	☐ OTHER	☐ OTHER	☒ PUMP Geopump
☐ OTHER	☐ METHANOL		☐ OTHER	☐ OTHER
	☒ OTHER Dedicated			☐ FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER Metals	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	As, Pb, Mn, Fe	200.5	As, Pb, Mn, Fe	N	HNO_3	500ml poly	
✓		200.8		N	with metals		
☐							
☐							
☐							
☐							
☐							
☐							

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES ☐ NO ☒

NUMBER OF GALLONS GENERATED: 4

NO-PURGE METHOD UTILIZED: YES ☐ NO ☒

NOTES Drawdown criteria not met.

DEVIATIONS FROM THE WORK PLAN

Sampler Signature: Jerry Rancliffe

Print Name: Jerry Rancliffe

Checked By:

Date:

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

wood.

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: USCG Eastport Housing Site Development		LOCATION ID: MW-2	DATE: 6/12/19
PROJECT NUMBER: 335000007.002.002		START TIME: 1110	END TIME: 1335
SAMPLE ID: MW-2	SAMPLE TIME: 1330	SITE NAME/INSTALLATION: USCG-Perry	PAGE: 2 OF 2

WELL DIAMETER (IN.): [ ] 1 [ ] 2 [ ] 4 [X] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES): [X] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP): [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		L	
COLLAR		✓	

INITIAL DTW (BMP)	5.38 FT	FINAL DTW (BMP)	6.20 FT	PROT. CASING STICKUP (AGS)	1.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	≈323 FT	SCREEN INTERVAL	40-323 OPEN HOLE FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	317.6 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	1.2 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	467 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	4 GAL	DRAWDOWN/ TOTAL PURGED	0.3	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1117	BEGIN PURGING									
1230	6.09	110	10.1	0.180	5.9	7.7	22	7.5	≈165	
1235	6.11	100	10.2	0.180	5.8	7.7	21	2.1		
1240	6.12	100	10.5	0.181	5.9	7.8	17	3.6		
1245	6.12	105	10.4	0.181	5.9	7.9	15	3.3		
1250	6.13	105	10.4	0.180	5.8	7.8	16	3.2		Possibly tidal
1255	6.14	105	10.2	0.181	5.8	7.8	15	2.0		effect on drawdown
1300	6.16	100	10.2	0.180	5.9	7.8	15	6.2		as low tide is
1305	6.18	100	10.2	0.180	5.9	7.8	15	3.6		1320
1310	6.18	105	10.1	0.180	5.8	7.8	14	2.8		
1315	6.19	105	10.0	0.180	5.8	7.8	14	1.7		
1320	6.20	105	10.1	0.180	5.8	7.8	14	1.7		

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

TEMP. (°C)	SP. CONDUCTANCE	DISS. O_2	pH	REDOX	TURBIDITY		
10	0.18	5.8	7.8	14	1.7		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED
[✓] PERISTALTIC	[X] ~~ALCONOX~~	[X] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[X] WL METER Heron
[ ] SUBMERSIBLE	[ ] DEIONIZED WATER	[X] ~~HDPE TUBING~~	[ ] PVC PUMP MATERIAL	[ ] PID
[ ] BLADDER	[X] ~~POTABLE~~ WATER	[X] LDPE TUBING	[ ] GEOPROBE SCREEN	[X] WQ METER YSI MPS 556
[ ] WATTERA	[ ] NITRIC ACID	[ ] OTHER	[ ] OTHER	[X] TURB. METER HACH 2100Q
[ ] OTHER	[ ] HEXANE	[ ] OTHER	[ ] OTHER	[X] PUMP Geopump
[ ] OTHER	[ ] METHANOL		[ ] OTHER	[ ] OTHER
	[X] OTHER Dedicated			[ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	Metals	200.5	As, Pb, Mn, Fe	N	HNO3	500ml poly	
✓	Uranium	200.8	U	N	HNO3	w/metals	
✓	Anions	300	Flouride/Nitrate/Nitrite N		4°C	250ml poly	
✓	Radon	—	—	N	4°C	2x40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [✓]

NUMBER OF GALLONS GENERATED: 4

NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NOTES: Drawdown criteria not met.

Sampler Signature: [signature]

Print Name: Jerry Rawcliffe

DEVIATIONS FROM THE WORK PLAN

Checked By:

Date:

LOW FLOW GROUNDWATER SAMPLING RECORD

wood.

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: USCG Eastport Housing Site Development		LOCATION ID: MW-3	DATE: 6/12/19
PROJECT NUMBER: 335000007.002.002		START TIME: 0945	END TIME: 1650
SAMPLE ID: MW-3	SAMPLE TIME: 1625	SITE NAME/INSTALLATION: USCG-Perry	PAGE 1 OF 1

WELL DIAMETER (IN.): ☐ 1 ☐ 2 ☐ 4 ☑ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☑ 1/8 ☐ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☒ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED		✓	
COLLAR		✓	

INITIAL DTW (BMP)	16.74 FT	FINAL DTW (BMP)	20.48 FT	PROT. CASING STICKUP (AGS)	1.5 FT	TOC/TOR DIFFERENCE	NA FT
WELL DEPTH (BMP)	≈403 FT	SCREEN INTERVAL	38-403 OPEN HOLE FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	386.3 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	5.5 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	568 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	11.5 GAL	DRAWDOWN/ TOTAL PURGED	2.6	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0955	BEGIN PURGING									
1005	17.07	125	9.3	0.175	4.0	8.0	66	250	≈160	
1025	17.40	130	9.2	0.172	3.2	8.1	55	300		
1050	17.70	120	9.5	0.170	3.2	8.4	31	280		Salinity 0.08 ppt
1555	20.42	105	10.8	0.169	3.7	8.5	18	250		
1600	20.41	110	10.6	0.169	3.6	8.4	25	270		
1605	20.46	115	10.6	0.169	3.4	8.3	29	260		
1610	20.44	100	10.6	0.168	3.3	8.3	27	270		
1615	20.46	110	10.6	0.168	3.3	8.4	25	270		
1620	20.48	110	10.6	0.169	3.3	8.4	21	260		
FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)			11	0.17	3.3	8.4	21	260		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS	EQUIPMENT USED
✓ PERISTALTIC	X ALCONOX	X SILICON TUBING	S. STEEL PUMP MATERIAL	X WL METER Heron
SUBMERSIBLE	DEIONIZED WATER	X HDPE TUBING	PVC PUMP MATERIAL	PID
BLADDER	X POTABLE WATER	X LDPE TUBING	GEOPROBE SCREEN	X WQ METER YSI
WATTERA	NITRIC ACID	OTHER	OTHER	X TURB. METER Hach
OTHER	HEXANE	OTHER	OTHER	X PUMP Geopump
OTHER	METHANOL		OTHER	OTHER
	OTHER Dedicated			FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	Metals (Dissolved)	200.8	As, Pb, Mn, Fe	Yes	4°C/HNO3	1x500ml poly	
✓	Uranium	200.8	U	Yes	" "	with metals.	
✓	Flouride/Nitrate/Nitrite	300	—	N	4°C	1x250ml Poly	
✓	Radon	—	—	N	4°C	2x40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES ☐ NO ☑

NUMBER OF GALLONS GENERATED: 11.5

NO-PURGE METHOD UTILIZED: YES ☐ NO ☑

NOTES: Parameters stable except for drawdown. Turbidity high - filtered metals sample. No unfiltered bottle.

DEVIATIONS FROM THE WORK PLAN

Sampler Signature: Jerry Rawcliffe

Print Name: Jerry Rawcliffe

Checked By:

Date:

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: USCG Eastport Housing Site Development
PROJECT NUMBER: 335000007.002.002
INSTALLATION: Eastport Housing Site, Perry, ME.
WEATHER CONDITIONS (AM): Sunny, 60°F, light breeze
WEATHER CONDITIONS (PM): Mostly sunny 65-70°F light breeze

DATE: 6/12/19 WED3
SAMPLER NAME: Jerry Rawcliffe
SAMPLER SIGNATURE: Jerry Rawcliffe
CHECKED BY: DATE:

MULTI-PARAMETER WATER QUALITY METER

METER TYPE YSI
MODEL NO. 556 MPS
UNIT ID NO. M015-07

AM CALIBRATION Start Time 0815 /End Time 0845

PM BUMP CHECK Start Time /End Time

Parameter	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4.0	4.00	+/- 20% of standard			
pH (7)	SU	7.0	7.00	+/- 20% of standard	7.0		+/- 20% of standard
pH (10)	SU	10.0	—	+/- 20% of standard			
Redox	+/- mV	240	236.7	+/- 20% of standard	240		+/- 20% of standard
Conductivity	mS/cm	1.413	1.413	+/- 0.5% of standard	1.413		+/- 20% of standard
DO (saturated)	%	100	101.3	+/- 20% of standard			
DO (saturated)	mg/L[1] (see Chart 1)	10.1	10.15	+/- 20% of standard			+/- 20% of standard
DO (<0.1)	mg/L	<0.1	—	+/- 20% of standard			
Temperature	°C		15.26				
Baro. Press.	mmHg		760.6				

TURBIDITY METER

METER TYPE HACH
MODEL NO. 2100Q
UNIT ID NO. M024-41

	Units	Standard Value	Meter Value	Standard Value	Meter Value	*Acceptance Criteria (PM)
10 Standard	NTU	10	9.89	10		+/- 20% of standard
20 Standard	NTU	20	20.5	20		+/- 20% of standard
100 Standard	NTU	100	101	100		+/- 20% of standard
800 Standard	NTU	800	789	800		+/- 20% of standard

PHOTOIONIZATION DETECTOR

METER TYPE
MODEL NO.
UNIT ID NO.

	Units	Standard Value	Meter Value	Standard Value	Meter Value	Acceptance Criteria (PM)
Background	ppmv	<0.1		<0.1		within 5 ppmv of BG
Span Gas	ppmv	100		100		+/- 10% of standard

O_2-LEL 4 GAS METER

METER TYPE
MODEL NO.
UNIT ID NO.

	Units	Standard Value	Meter Value	Standard Value	Meter Value	Acceptance Criteria (PM)
Methane	%	50		50		+/- 10% of standard
O_2	%	20.9		20.9		+/- 10% of standard
H_2S	ppmv	25		25		+/- 10% of standard
CO	ppmv	50		50		+/- 10% of standard

OTHER METER

METER TYPE
MODEL NO.
UNIT ID NO.

See Notes Below for Additional Information

- [x] Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- [ ] Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source:	NA
Lot#/Date Produced:	NA
Trip Blank Source:	NA
Sample Preservatives Source:	NA
Disposable Filter Type:	NA
Calibration Fluids / Standard Source:	
- DO Calibration Fluid (<0.1 mg/L)	NA
- Other	
- Other	
- Other	

	Cal. Standard Lot Number	Exp. Date
pH (4)	8GA602	1/21
pH (7)	8GK167	1/21
pH (10)	—	
ORP	3086	6/23
Conductivity	8GK308	6/19
10 Turb. Stan.	A8135	8/19
20 Turb. Stan.	A8141	9/19
100 Turb. Stan.	A8142A	9/19
800 Turb. Stan.	A8143	9/19
PID Span Gas	-	-
O_2-LEL Span Gas	-	-
Other		

NOTES:

wood. 511 Congress Street, Portland Maine 04101

QPP States that a PM post calibration check is not required for any field instruments

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCalibrat) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.

** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.

1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-FieldCalibrat), dated 1/19/2010.

Katahdin
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CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: [illegible]	Contact: [illegible]	Phone #: (207) [illegible]	Fax #: (207) [illegible]
Address: [illegible] St	City: Portland	State: ME	Zip Code: [illegible]
Purchase Order #:	Proj. Name / No.: USCG Housing Ferry	Katahdin Quote #:	
Bill (if different than above):	Address:		
Sampler (Print / Sign): [illegible]	Copies To:		

LAB USE ONLY

WORK ORDER #:

KATAHDIN PROJECT NUMBER ______

REMARKS: ______

SHIPPING INFO: ☐ FED EX ☐ UPS ☒ CLIENT

AIRBILL NO: ______

TEMP°C ______ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ☐Y ☒N [illegible] / As, Pb, Mn, Fe, U	Filt. ☐Y ☒N EPA 300 / Total Mn/[illegible]	Filt. ☐Y ☒N [illegible]	Filt. ☒Y ☐N EPA 6020 [illegible] / As/Pb/Mn/Fe/U	Filt. ☐Y ☐N Fe [illegible]	Filt. ☐Y ☐N E. coli	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	MW-2	6/12/[illegible] / 1330	GW	4	1	1	2							
	MW-1	↓ / [illegible]	↓	4	1	1	2							
	MW-3	↓ / [illegible]	↓	4		1	2	1						
	MW-1	6/13/[illegible] / [illegible]	↓	2					1	1				
	MW-2	↓ / [illegible]	↓	2					1	1				
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												
		/												

COMMENTS MW-3: [illegible] sampled [illegible] field filtered – please get total [illegible] excess water [illegible]

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[illegible signature]	[illegible] / 1325	[signature]		/	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	/			/	

Appendix C
Hazardous Materials Assessment
CD

SENSIBLE SOLUTIONS

CES INC

HAZARDOUS MATERIALS ASSESSMENT REPORT

576 SHORE ROAD
PERRY, MAINE

Prepared for: **Wood Environment and Infrastructure, Inc.**
511 Congress Street, Suite 200
Portland, Maine 04101

July 9, 2019
JN: 10520.008

Report Prepared By:
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Engineers ◆ Environmental Scientists ◆ Surveyors

EXECUTIVE SUMMARY

CES, Inc. (CES) completed a Hazardous Materials Assessment (HMA) of the structures associated with the residential property, located at 576 Shore Road, in Perry, Maine (the Site) to identify the presence of hazardous materials on or within each of the Site structures, as well as eight identified debris piles on the Site. A hazardous materials assessment was completed for each of the following structures and debris piles associated with the Site:

- Main House: a two-story wood-framed structure with a connecting mud room and an attached two-car garage and a metal roof system, built in 1968;
- Barn: a single-story wood-framed structure with a loft, built in 1968;
- Shed #1 (wood storage) – a single story wood-framed structure;
- Exterior Wood Boiler;
- Shed #2 (workshop) – a single-story metal-framed structure;
- Shed #3 – a single-story wood-framed structure;
- Shed #4 – a single-story wood-framed structure;
- Shed #5 – a single-story wood-framed structure; and
- Eight identified debris piles.

This HMA was completed to identify Asbestos-Containing Materials (ACM), Lead-Based Paint (LBP), and potential hazardous materials/wastes and universal wastes that would require special handling and disposal or would be regulated prior to/during renovations or demolition of the structures. Assessment of the structures and debris piles was conducted on June 4, 2019.

The HMA revealed the following relevant information:

1. ACM present on the interior and exterior of the Site structures, as identified by CES, includes the following:

   <u>Main House</u>:
   - Bathroom sheet flooring (Sample MAIN-003A).

   Laboratory analytical results did not identify asbestos-containing materials in Shed #1, Shed #2, Wood Boiler, and the Barn.

   The following homogenous suspect materials and associated samples, were identified on multiple buildings. The referenced samples and associated laboratory analytical results are representative of the homogeneous materials on each identified building:
   - Shed #3 and Barn – corrugated roof material (refer to Sample Barn-002ABC);
   - Shed #5 and Barn – asphalt roof shingles (refer to Sample Barn-004ABC); and
   - Doghouse (located between the barn and shed #3) and Barn – asphalt roof shingles (refer to Sample Barn 003ABC).

   Suspect materials were not identified in Shed #5 and Debris Piles #1 through 8.

2. Potential hazardous materials/wastes and universal wastes including fluorescent light bulbs and associated light ballasts, mercury-containing thermostats, an emergency light battery and an above-ground storage tank (AST) were present in the Main House; fluorescent light bulbs and associated light ballasts were present in the barn; fluorescent light bulbs and associated light ballasts, and two gallons of motor oil were present in Shed #2 (workshop); and propane tanks were identified in both Debris Pile #3 and Debris Pile #4. Potential hazardous materials/wastes and universal wastes were not identified in Sheds #1, 3, 4, and 5 and in the remaining debris piles.

3. LBP was identified on the following surfaces, using a portable X-Ray Fluorescence (XRF) Lead Paint Analyzer;

   - Shed #2 (workshop) – double wood doors and the frame. LBP debris is present on the ground adjacent to this door system; and
   - Debris Pile #2 - miscellaneous pieces of wood chips in the debris pile (origin unknown).

   LBP was not identified on the interior and/or the exterior of the remaining structures and/or debris piles.

Should the materials identified above be impacted by planned renovations/demolition or site cleanup, removal or remediation is required prior to disturbance, in accordance with applicable State of Maine and federal rules and regulations.

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FIGURES

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Table 2 – Summary of Asbestos-Containing Materials
Table 3 – Estimated ACM Abatement Costs
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APPENDICES

Appendix A – Asbestos and Lead-Based Paint Risk Assessor Certifications
Appendix B – Asbestos Analytical Laboratory Certifications
Appendix C – Asbestos Laboratory Analytical Results
Appendix D – LBP Determination Reports
Appendix E – Photographic Log

1.0 INTRODUCTION

CES, Inc. (CES) completed a Hazardous Materials Assessment of the structures associated with the residential property, located at 576 Shore Road, in Perry, Maine (the Site) to identify the presence of hazardous materials on or within each of the structures/areas. A hazardous materials assessment was completed for each of the following structures associated with the Site:

- Main House: a two-story wood-framed structure with a connecting mud room and an attached two-car garage, built in 1968;
- Barn: a single-story wood-framed structure with a loft, built in 1968;
- Shed #1 (wood storage) – a single story wood-framed structure;
- Exterior Wood Boiler;
- Shed #2 (workshop) – a single-story wood-framed structure;
- Shed #3 – a single-story wood-framed structure;
- Shed #4 – a single-story wood-framed structure;
- Shed #5 – a single-story wood-framed structure; and
- Eight identified debris piles. (General descriptions of the debris piles are included in Appendix E, Photographic Log)

This assessment was completed to identify Asbestos-Containing Materials (ACM), Lead-Based Paint (LBP), and potential hazardous materials/wastes and universal wastes that would require special handling and disposal or would be regulated prior to/during renovations or demolition of the structures or Site cleanup. Assessment of the structures and debris piles, identified in Figure H-AA, was conducted on June 4, 2019.

2.0 ASBESTOS CONTAINING MATERIALS

2.1 Asbestos Identification Survey

The Asbestos Identification Survey was conducted in accordance with the Maine Department of Environmental Protection (MDEP) Chapter 425 Asbestos Management Regulations (April 3, 2011 revision) to provide information regarding the presence of interior and exterior ACM associated with each of the Site structures. Ms. Deborah Kasik (CES), an asbestos inspector licensed in the State of Maine, performed the field survey on June 4, 2019. A copy of Ms. Kasik's Asbestos Inspector certification is included in **Appendix A**. As part of the asbestos identification survey and in accordance with Chapter 425.

Completion of the Asbestos Identification Surveys included:

- Visual identification of suspect ACM on the interior and exterior of each of the Site structures;
- Collection of bulk samples of identified suspect ACM in accordance with MDEP regulations; and
- Quantification of ACM identified by laboratory analysis in each building.

As with any scientific study, an asbestos identification survey is subject to a variety of limitations. Limitations to be considered when interpreting the results of the survey performed on this structure include the following:

- An asbestos identification survey may not be able to identify all ACM present throughout a facility;
- Variations in building materials used during construction and subsequent renovations; and
- Inaccessible areas within wall cavities, under floors, and above solid ceilings.

Bulk samples of suspect ACM collected during the survey were submitted to EMSL Analytical, Inc. (EMSL) of South Portland, Maine for analysis. Bulk samples collected during this survey were analyzed using the MDEP required analytical methods: "PLM-EPA 600/R-93/116" (for surfacing, thermal system insulation and cementitious materials), and "PLM NOB-EPA 600/R-93/116" (for non-friable organically bound materials (NOBs)) (e.g., floor tile, adhesives, and roofing) with "gravimetric reduction". Samples were analyzed at the EMSL laboratory which is certified to perform asbestos analysis by both the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA). EMSL is a MDEP licensed Asbestos Analytical Laboratory. Copies of EMSL's laboratory certifications are included in **Appendix B**. Laboratory analytical results and chain of custodies are **Appendix C**.

The following is a summary of field findings and laboratory analytical results of the survey:

The property located at 576 Shore Road in Perry, Maine includes the main house, barn, 5 sheds, a wood boiler, and eight debris piles located on the property. A total of 37 samples of identified suspect ACM were collected from the interior and exterior of the Site structures, includes the following:

Main House:
- Refractory cement;
- Two types of sheet flooring;
- Sheetrock wall and ceiling board material; and
- One type of flooring adhesive.

Barn:
- Sheetrock wall board;
- Corrugated roof material; and
- Two types of asphalt roofing shingles.

Shed #1 (wood storage):
- Asphalt roofing shingles.

Exterior Wood Boiler:
- Door gasket; and
- Miscellaneous debris/insulation.

Shed #2 (workshop):
- Window and door glazing.

The following homogenous suspect materials and associated samples, were identified on multiple buildings. The referenced samples and associated laboratory analytical results are representative of the homogeneous materials on each identified building:
- Shed #3 and Barn – corrugated roof material (refer to Sample Barn-002ABC);
- Shed #5 and Barn – asphalt roof shingles (refer to Sample Barn-004ABC); and
- Doghouse (located between the barn and shed #3) and Barn – asphalt roof shingles (refer to Sample Barn 003ABC).

Suspect materials were not identified in Shed #5 and Debris Piles #1 through 8.

A summary of the asbestos sample locations and results is included in **Table 1**. Sample locations and identified ACM are included on Figures **H101 and H103**. The number of samples collected at each structure was determined by the number of homogeneous sampling areas identified by the inspector. A homogeneous area is an area that based on the inspector's judgment, contains materials that are uniform in color and texture and are present on similar building or utility components. Photographs of the site are included as **Appendix E.**

2.2 Asbestos Sampling Results

According to MDEP regulations, locations and occurrences of materials that tested positive and are homogenous (similar in color and texture) in nature are considered as ACM, provided the material contains greater than or equal to (≥) one percent (1%) asbestos based on laboratory analysis. A material can only be considered negative for asbestos if analytical results from all bulk samples in a group of samples representing that material indicate an asbestos content of less than (<) 1%.

ACM identified by laboratory analysis consisted of:

<u>Main House</u>:
- Bathroom sheet flooring (Sample MAIN-003A).

An inventory and associated budgetary cost estimates for removal of identified ACM for each building are included in **Table 2 and Table 3,** respectively. Budgetary cost estimates have been prepared to provide a budget for removal of identified ACM. These estimates do not include material replacement costs, regulatory agency notification fees, or a contingency. Estimates assume the contractor will be responsible to prepare the asbestos abatement design(s). Regulatory agency notification fees associated with this project will vary depending phasing and project schedule. Actual abatement costs may vary depending upon the quantity of ACM abated and abatement methods utilized.

3.0 POTENTIAL HAZARDOUS MATERIALS ASSESSMENT

CES conducted a visual assessment of the interior and exterior of each structure to identify potential hazardous material and potential hazardous wastes, including both universal waste and potential universal wastes, used or stored at the structures, or remaining in the debris piles. A summary of identified materials and associated estimates for removal and disposal of the materials identified in each respective building is included as **Table 4**.

4.0 LEAD-BASED PAINT DETERMINATION

Lead-Based Paint determinations were conducted for each Site structure, by Ms. Deborah A. Kasik (CES), a MDEP certified Lead Risk Assessor. A copy of Ms. Kasik's Lead Risk Assessor certification is included in **Appendix A**. The purpose of the determinations was to identify LBP, if present, on the interior and exterior surfaces of each of structures. The LBP determinations were performed in accordance with the established protocols outlined in the MDEP Lead Management Regulations, Chapter 424, Section 7, and as applicable to this project. The testing provides information on the LBP content and assessment of condition for the surfaces tested.

The LBP testing was conducted utilizing a portable X-Ray Fluorescence (XRF) Lead Paint Analyzer (RMD LPA-1), which non-destructively tests for the presence of LBP. The XRF analyzer is licensed with the Maine Department of Human Services Radiation Control Program and operated in accordance with all applicable regulations and conditions of licensure. The determination as to whether or not a component contains LBP is based upon the MDEP Lead Management Regulations (Chapter 424). The MDEP defines a component as lead-containing if the XRF result is greater than or equal to (≥) 1.0 milligrams per square centimeter (mg/cm^2). A visual assessment of the existing condition of the identified LBP was also completed at the time of the determination.

A summary report of building components tested, and the results are included in **Table 5**. Testing locations are presented on Figures H102 and H104. The detailed LBP determination report for the Site structures is included as **Appendix D**. Refer to the report for specific type, location, and condition of materials tested for LBP.

LBP was identified on the following surfaces, using a portable X-Ray Fluorescence (XRF) Lead Paint Analyzer;

- Shed #2 (workshop) – double wood doors and the frame. LBP debris is present on the ground adjacent to this door system; and

- Debris Pile #2 - miscellaneous pieces of wood chips in the debris pile (origin unknown).

LBP was not identified on the interior and/or the exterior of the remaining structures and debris piles.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This investigation revealed the following relevant information:

Asbestos-Containing Materials
Asbestos-Containing Materials were identified as follows:

Main House:
- Bathroom sheet flooring (Sample MAIN-003A).

Current State regulations require that identified ACM which may be impacted by planned renovation/demolition activity be removed by a MDEP licensed asbestos abatement contractor in accordance with applicable state and federal regulations prior to disturbance by such planned activities. In accordance with 40 CFR 61, *National Emissions Standards for Hazardous Air Pollutants* (NESHAP), and 06-096 State of Maine, Department of Environmental Protection, Chapter 425, Asbestos Management Regulations (effective date: May 29, 2004), a contractor conducting any renovation and/or demolition activity that would disturb regulated ACM must: (1) notify the U.S. Environmental Protection Agency (USEPA) Administrator and the MDEP of such activities, (2) use proper removal procedures, (3) use proper engineering controls to limit emissions of asbestos fibers, and (4) utilize proper waste disposal. If any hidden suspect ACM (behind walls, in chases, above permanent ceilings, etc.) is uncovered during renovation or demolition activities, work must be stopped, and the material tested for asbestos content. All ACM must be disposed of in accordance with all applicable state and federal requirements.

Additionally, notification requirements, as required by OSHA 29 CFR Parts 1910.1001 and 1926.1101, must be adhered to as part of routine communication with employees and outside contractors. Potential contractors bidding on the renovation work must first be informed of the results of this survey. Notification regarding the presence of the ACM must also be provided to employees who occupy an area containing ACM.

Potential Hazardous Materials/Wastes and Universal Wastes

Potential Hazardous Materials/Wastes and Universal Wastes identified within the Site structures or debris piles included:

- Fluorescent light bulbs and associated light ballasts;
- Mercury–containing thermostat;
- Emergency Light Battery;
- Above-ground storage tank (AST);

- Motor oil containers; and
- Propane tanks (Debris Piles #3 and #4).

When removed for disposal, fluorescent light bulbs are considered a Universal Waste and must be properly handled, packaged, and disposed. Fluorescent light ballasts contain capacitors that may be filled with PCB-containing dielectric fluid; however, it is unknown whether PCB ballasts (a Universal Waste) are present in the building. The recommended best management practice (BMP) is to individually remove each light fixture and individual ballasts evaluated to confirm the presence or absence of PCBs. Non-PCB light ballasts will be clearly labeled as not containing PCBs and may be disposed of as solid waste. If no such labeling is present, the ballast should be treated as PCB-containing and be segregated and handled as Universal Waste. Thermostats should be segregated and handled as Universal Waste. The contents of the heating oil above-ground storage tank (AST), located in the basement of the main house, should be removed for re-use or recycling prior to moving, re-use, or recycling of the AST. Mercury-containing thermostats, emergency light battery, motor oil containers, and propane tanks should be removed and recycled or disposed of properly.

Lead-Based Paint

LBP was identified on the following surfaces, using a portable XRF Lead Paint Analyzer;

- Shed #2 (workshop) – double wood doors and the frame. LBP debris is present on the ground adjacent to this door system; and
- Debris Pile #2 - miscellaneous pieces of wood in the debris pile (origin unknown).

6.0 REPORT CERTIFICATION

This report was prepared and reviewed by CES, Inc. for the use of Wood PLC and its constituents and should not be reproduced without Wood's full, written authorization.

Deborah A. Kasik
Project Scientist
MDEP Certified Asbestos Inspector License No. AI-0177
MDEP Certified Lead Risk Assessor License No. LR-0003

David S. Hopkins, Jr. P.E., P.F.
Senior Project Engineer

DAK/DSH/cmc
Attachments

FIGURES

FIGURE H-AA – SITE PHOTOGRAPH WITH BUILDING AND DEBRIS PILE IDENTIFICATION

FIGURE H101 – ASBESTOS IDENTIFICATION SURVEY SAMPLE LOCATONS – SITE

FIGURE H102 – LEAD-BASED PAINT DETERMINATION SAMPLE LOCATIONS – SITE

FIGURE H103 – ASBESTOS IDENTIFICATION SURVEY SAMPLE LOCATIONS – MAIN HOUSE (3 LEVELS)

FIGURE H104 – LEAD-BASED PAINT DETERMINATION SAMPLE LOCATIONS – MAIN HOUSE (3 LEVELS)

PLAN REFERENCE:

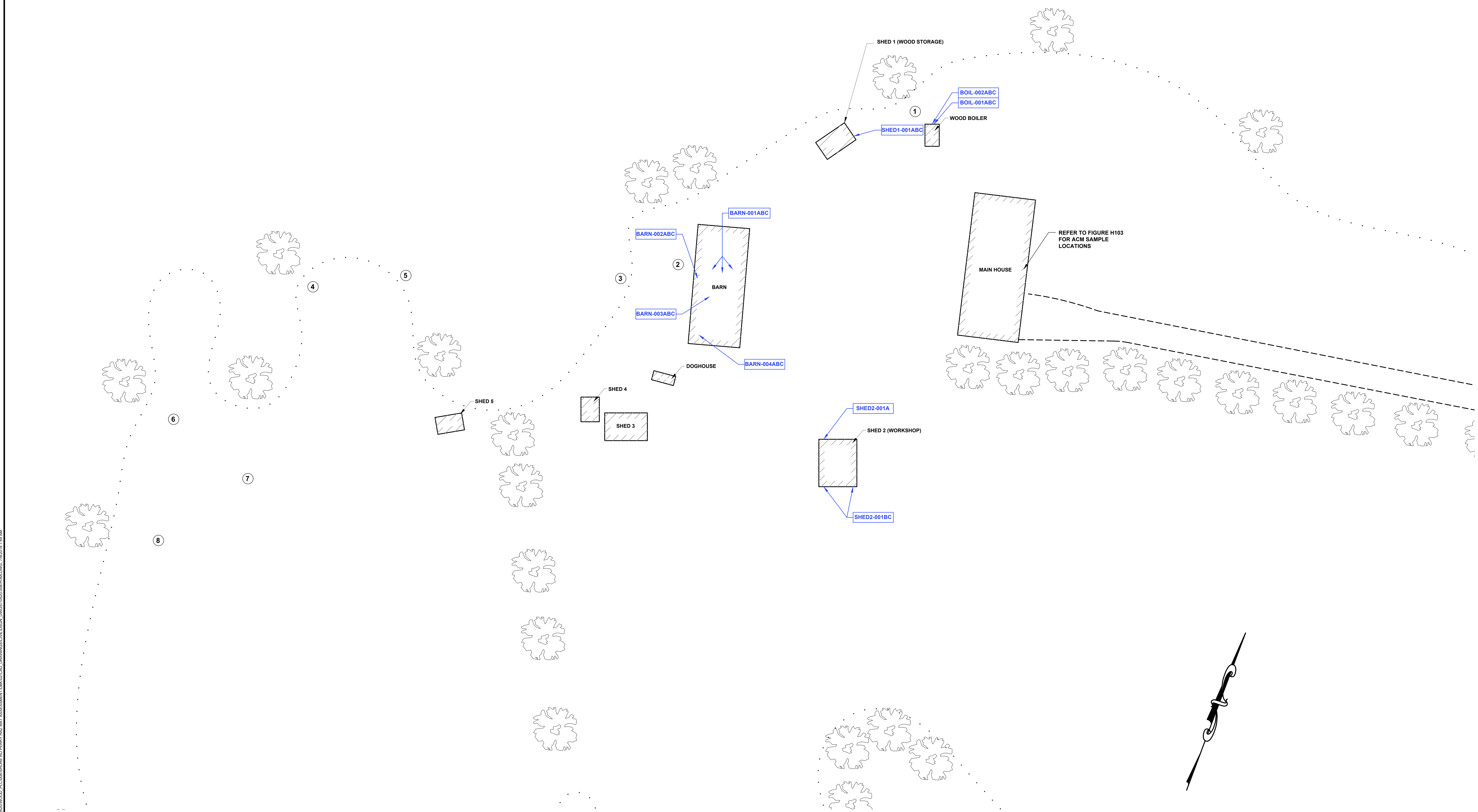
SITE PLAN IS NOT WARRANTED AS TO ACCURACY AND ARE INTENDED TO BE SCHEMATIC.

ASBESTOS LEGEND

BARN-002A	ASBESTOS SAMPLE NUMBER AND LOCATION TESTING NEGATIVE FOR ASBESTOS

SITE LEGEND:

DESCRIPTION	EXISTING
TREES	
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
TREELINE	
DEBRIS PILE	#



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F.207-795-6128

576 SHORE ROAD
PERRY, MAINE

ASBESTOS IDENTIFICATION SURVEY - SITE

NOT FOR CONSTRUCTION

SCALE	NTS
DATE	2019-07-09
DRAWN BY	JNB
CHECKED BY	DBK
DESIGNED BY	
APPROVED BY	
JOB NUMBER	10520.008
DRAWING NUMBER	H101

PLAN REFERENCE:

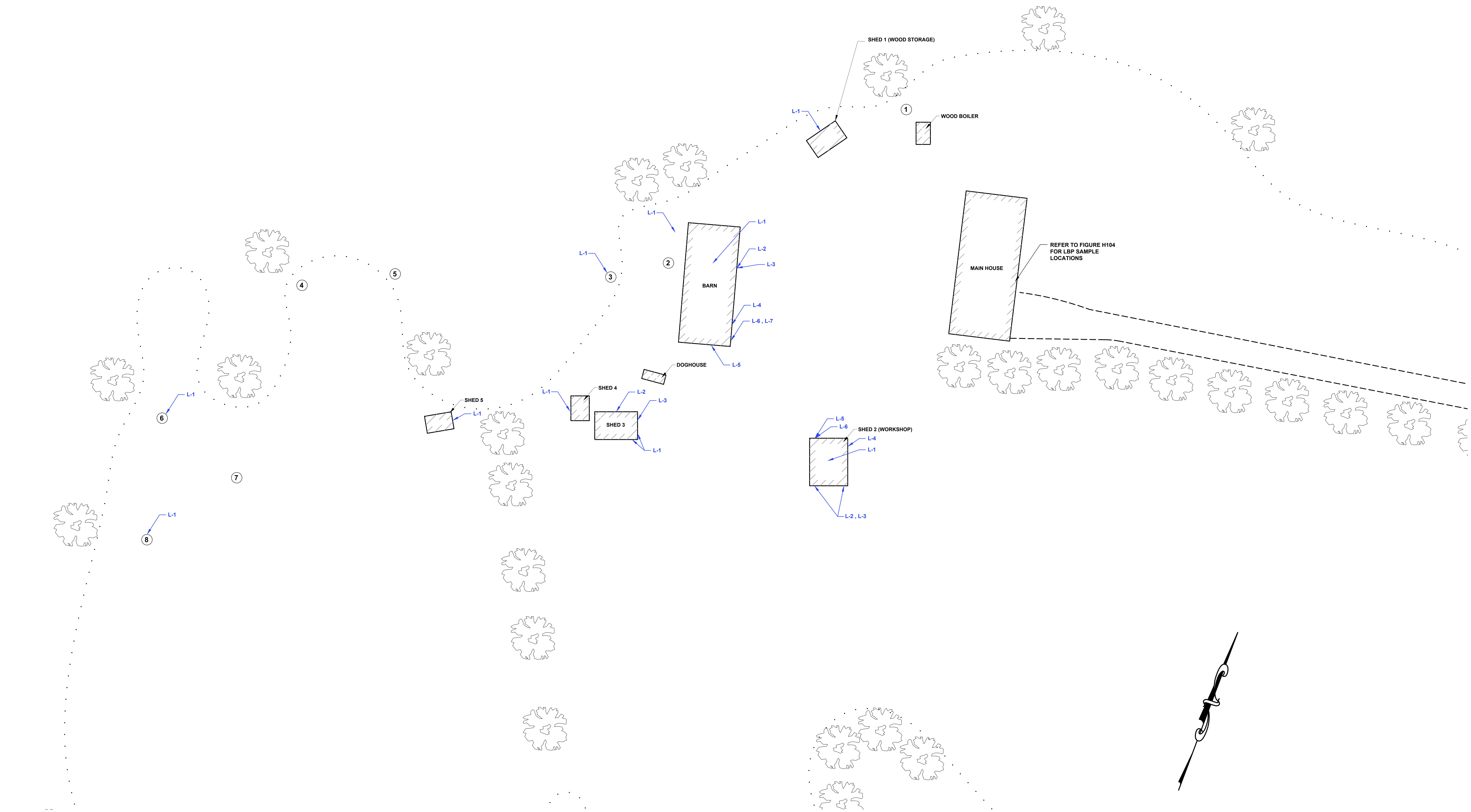
SITE PLAN IS NOT WARRANTED AS TO ACCURACY AND ARE INTENDED TO BE SCHEMATIC.

LEAD BASED PAINT LEGEND

L-01 — LEAD BASED PAINT SAMPLE NUMBER AND LOCATION TESTING NEGATIVE FOR LEAD

SITE LEGEND:

DESCRIPTION	EXISTING
TREES	
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
TREELINE	
DEBRIS PILE	#



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F.207-795-6128

PROJECT TITLE: 576 SHORE ROAD PERRY, MAINE

SHEET TITLE: LEAD BASED PAINT DETERMINATION SURVEY SITE PLAN

ISSUE STATUS: NOT FOR CONSTRUCTION

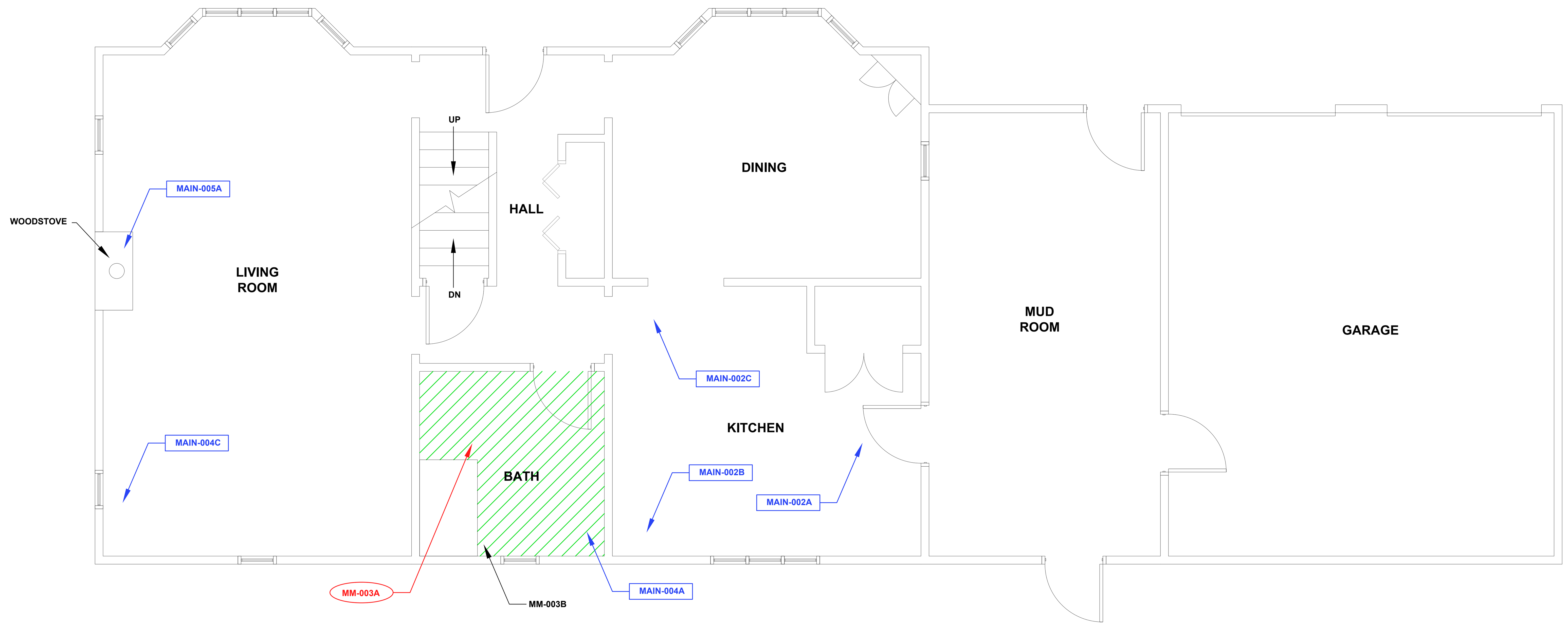
SCALE	NTS
DATE	2019-07-09
DRAWN BY	JNB
CHECKED BY	DBK
DESIGNED BY	
APPROVED BY	
JOB NUMBER	10520.008
DRAWING NUMBER	H102

PLAN REFERENCE:

FLOOR PLAN IS NOT WARRANTED AS TO ACCURACY AND ARE INTENDED TO BE SCHEMATIC.

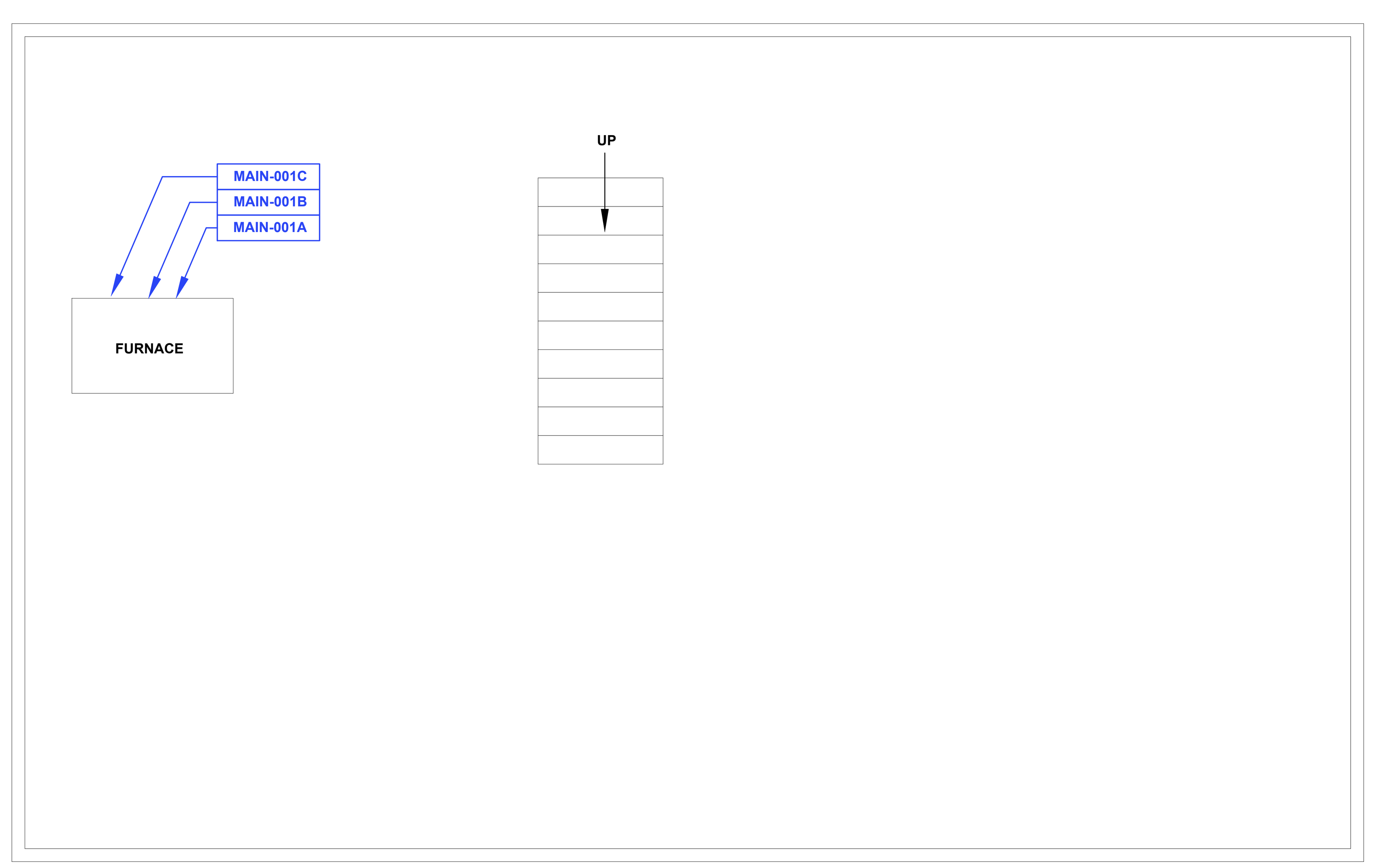
ASBESTOS LEGEND

MAIN-001A	SAMPLE NUMBER AND LOCATION TESTING POSITIVE FOR ASBESTOS
MAIN-002A	SAMPLE NUMBER AND LOCATION TESTING NEGATIVE FOR ASBESTOS
MAIN-001B	SAMPLE NUMBER AND LOCATION NOT ANALYZED (POSITIVE STOP)
	ACM SHEET FLOORING



FIRST FLOOR PLAN

SCALE 1/4"=1'-0"



BASEMENT PLAN

SCALE 1/4"=1'-0"

SECOND FLOOR PLAN

SCALE 1/4"=1'-0"

Brewer
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Presque Isle
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F.207-764-8414

Waterville
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Waterville, ME
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F.207-680-2204

Machias
61 Dublin Street
PO Box 587
Machias, ME
T.207-255-3270
F.207-255-8367

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F.207-288-0588

Lewiston
640 Main Street
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F.207-795-6128

CES INC
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PROJECT TITLE: 576 SHORE ROAD
PERRY, MAINE

SHEET TITLE: ASBESTOS IDENTIFICATION SURVEY
MAIN HOUSE

NOT FOR CONSTRUCTION

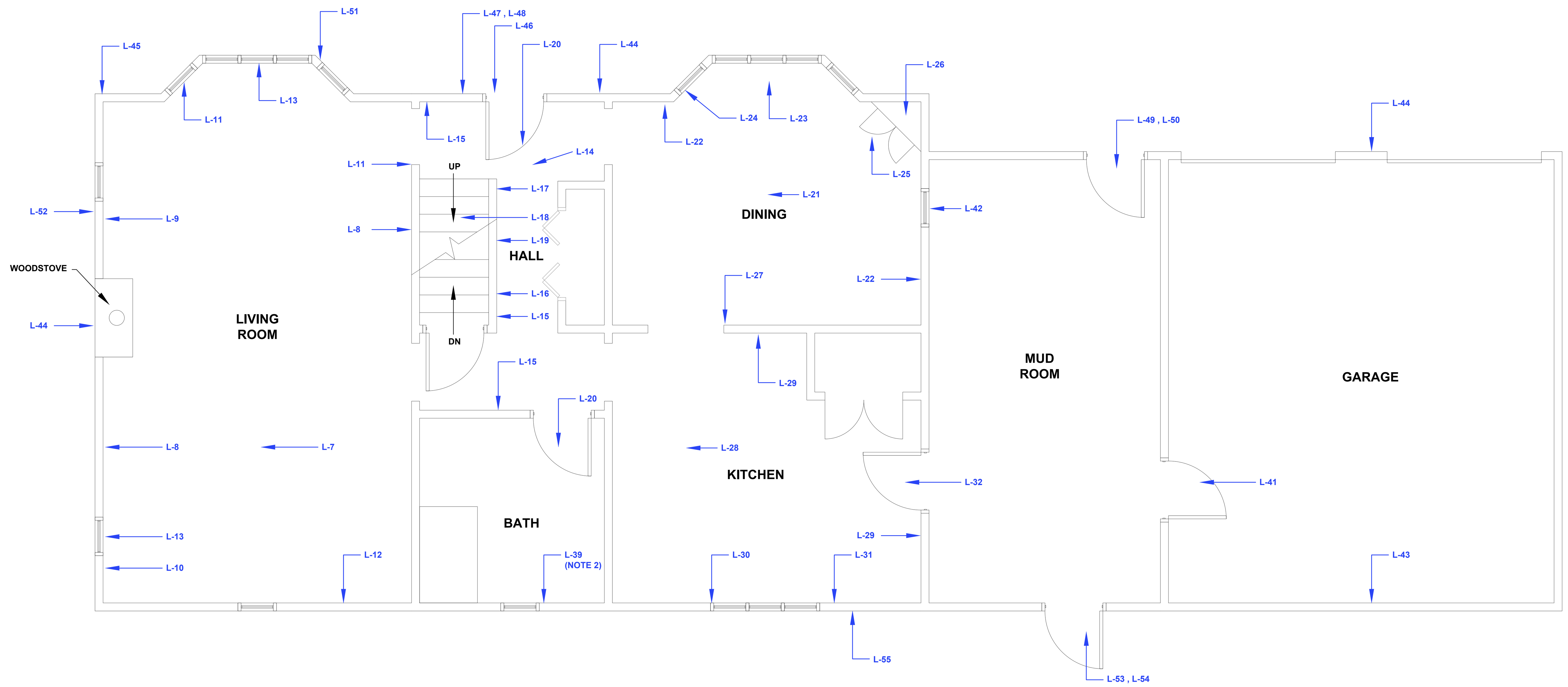
SCALE	1/4"=1'-0"
DATE	2019-07-09
DRAWN BY	JNB
CHECKED BY	DBK
DESIGNED BY	
APPROVED BY	
JOB NUMBER	10520.008
DRAWING NUMBER	H103

PLAN REFERENCE:

FLOOR PLAN IS NOT WARRANTED AS TO ACCURACY AND ARE INTENDED TO BE SCHEMATIC.

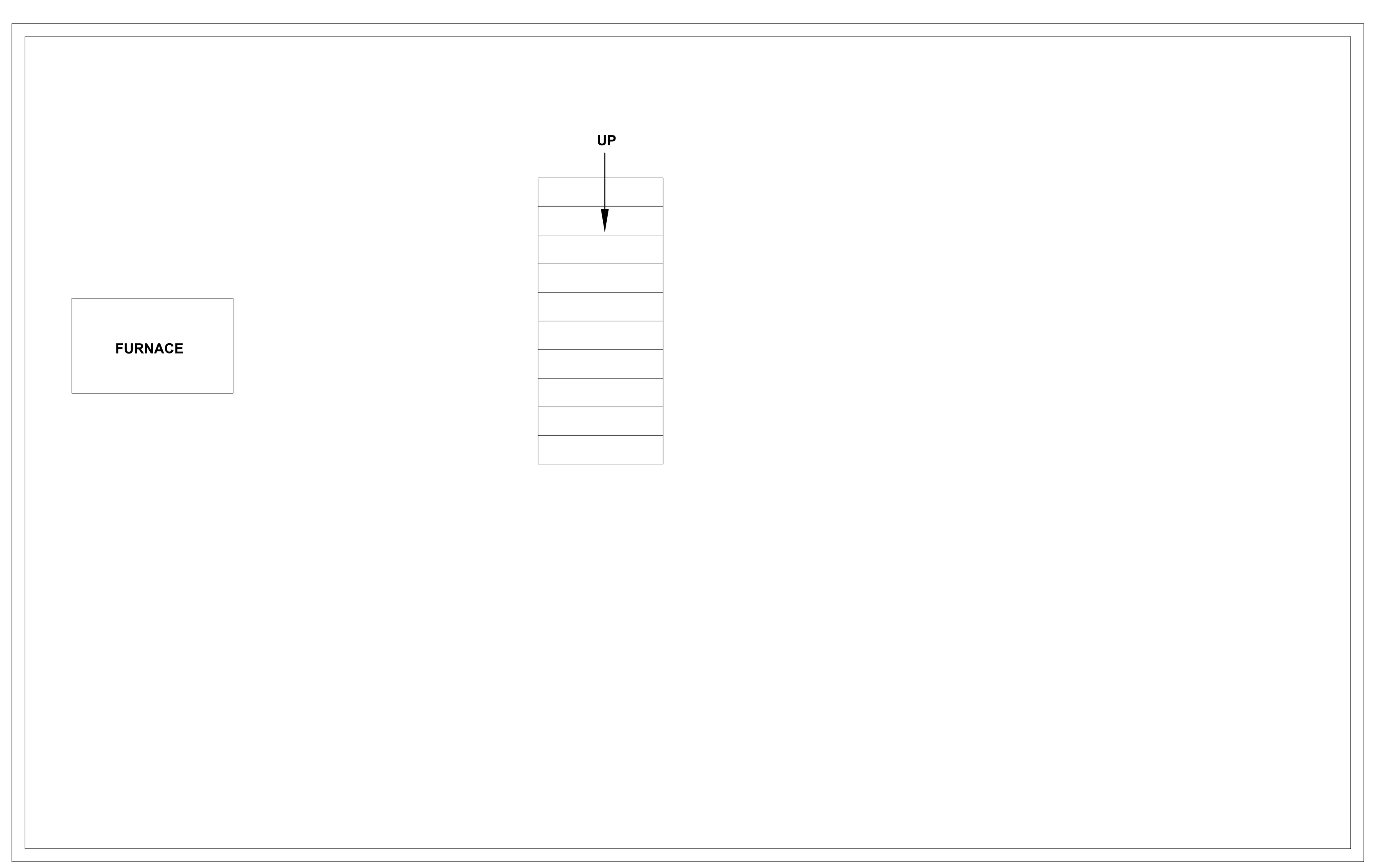
LEAD BASED PAINT LEGEND

L-01 — LEAD BASED PAINT SAMPLE NUMBER AND LOCATION TESTING NEGATIVE FOR LEAD



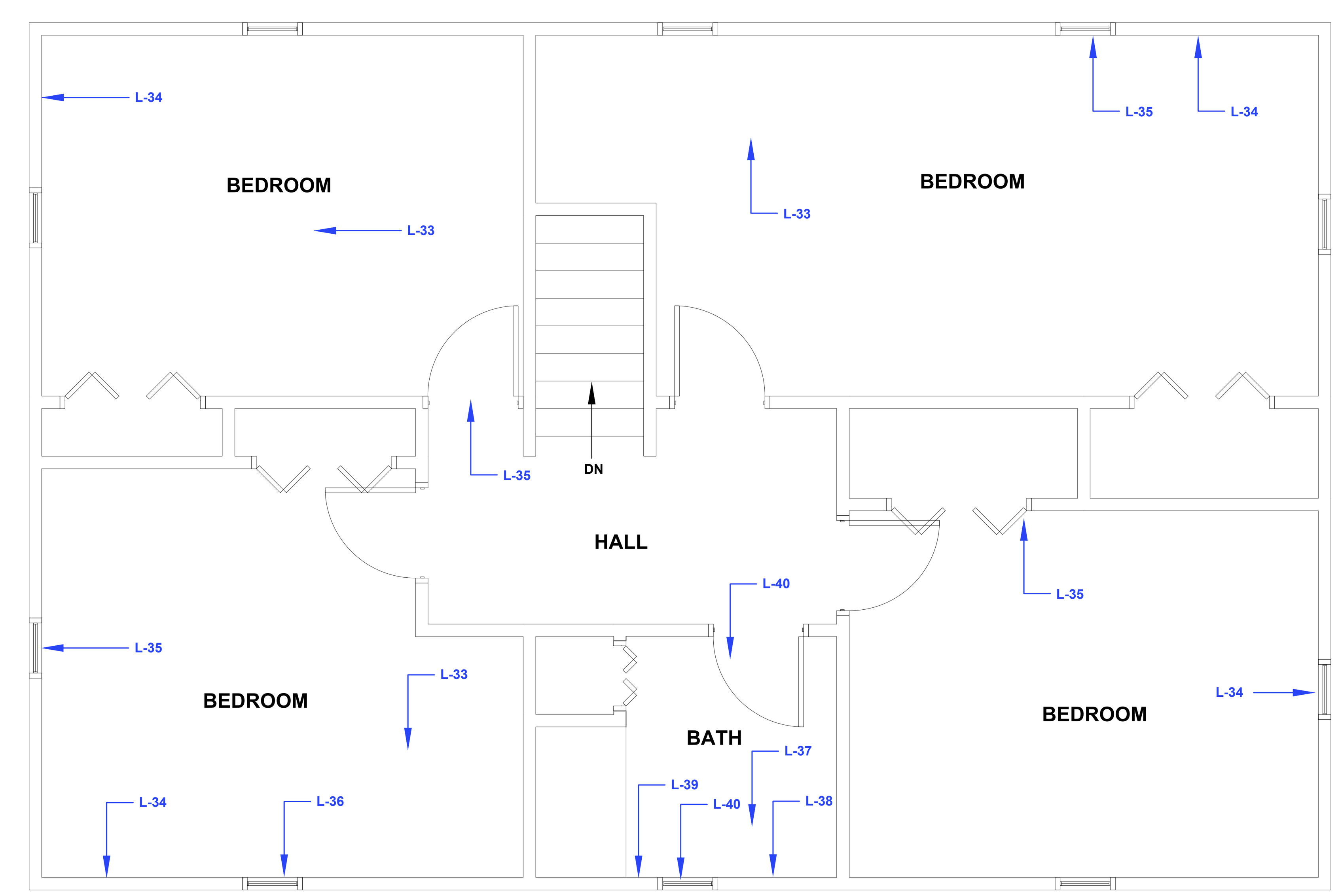
FIRST FLOOR PLAN

SCALE 1/4"=1'-0"



BASEMENT PLAN

SCALE 1/4"=1'-0"



SECOND FLOOR PLAN

SCALE 1/4"=1'-0"

Waterville
44 Main Street
Suite 204
Waterville, ME
T.207-680-2202
F.207-680-2204

Presque Isle
549 Main Street
PO Box 827
Presque Isle, ME
T.207-764-8412
F.207-764-8414

Brewer
465 South Main Street
PO Box 639
Brewer, ME
T.207-989-4824
F.207-989-4881

Lewiston
640 Main Street
Lewiston, ME
T.207-795-6009
F.207-795-6128

Bar Harbor
1366 State Hwy 102
Bar Harbor, ME
T.207-288-0587
F.207-288-0588

Machias
61 Dublin Street
PO Box 587
Machias, ME
T.207-255-3270
F.207-255-8367

CES INC
Engineers • Environmental Scientists • Surveyors

PROJECT TITLE: 576 SHORE ROAD PERRY, MAINE

SHEET TITLE: LEAD BASED PAINT DETERMINATION SURVEY MAIN HOUSE

NOT FOR CONSTRUCTION

SCALE	1/4"=1'-0"
DATE	2019-07-09
DRAWN BY	JNB
CHECKED BY	DBK
DESIGNED BY	
APPROVED BY	
JOB NUMBER	10520.008
DRAWING NUMBER	H104

LEGEND

(#) DEBRIS PILE

CES INC
Engineers • Environmental Scientists • Surveyors

Brewer
465 South Main Street
PO Box 639
Brewer, ME
T.207-989-4824
F.207-989-4881

Presque Isle
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PO Box 827
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T.207-764-8412
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F.207-255-8367

Bar Harbor
1366 State Hwy 102
Bar Harbor, ME
T.207-288-0587
F.207-288-0588

Lewiston
640 Main Street
Lewiston, ME
T.207-795-6009
F.207-795-6128

576 SHORE ROAD
PERRY, MAINE

HAZARDOUS MATERIALS SURVEY

SCALE	NTS
DATE	2019-07-09
DRAWN BY: JNB	CHECKED BY: DBK
DESIGNED BY	APPROVED BY
JOB NUMBER	10520.008
DRAWING NUMBER	H-AA

TABLES

TABLE 1 - SUMMARY OF ASBESTOS SAMPLE LOCATIONS AND RESULTS
TABLE 2 – SUMMARY OF ASBESTOS CONTAINING MATERIALS
TABLE 3 – ESTIMATED ACM ABATEMENT COSTS
TABLE 4 – HAZARDOUS MATERIALS INVENTORY
TABLE 5 – SUMMARY OF LEAD BASED PAINT SAMPLE AND RESULTS

TABLE 1
SUMMARY OF ASBESTOS SAMPLE LOCATIONS AND RESULTS
576 SHORE ROAD
PERRY, MAINE

Sample Location and Suspect ACM Material	Sample Results
MAIN HOUSE	
Basement; Refractory Cement	None Detected
First Floor - Kitchen; Sheet Flooring	None Detected
First & Second Floor - Bathrooms; Sheet Flooring	Asbestos Identified
First & Second Floor - Sheetrock Wall/Ceiling Systems	None Detected
First Floor - Living Room; Yellow Ceramic Tile Adhesive	None Detected
BARN	
Interior - Sheetrock Wall System	None Detected
Exterior - Corrugated Roof Material	None Detected
Exterior - Asphalt Roof Shingles (orange)	None Detected
Exterior - Asphalt Roof Shingles (gray)	None Detected
SHED #1 (WOOD STORAGE)	
Exterior - Asphalt Roof Shingles (orange)	None Detected
EXTERIOR BOILER	
Boiler Door Gasket Material	None Detected
Debris/Insulation	None Detected
SHED #2 (WORKSHOP)	
Exterior Door and Window Glazing	None Detected
DEBRIS PILE #2	
Corrugated and Asphalt Roof Shingle Debris (from Barn Roof)	None Detected
DOGHOUSE	
Asphalt Roof Shingles (homogeneous to Barn Roof)	None Detected
SHED #3	
Corrugated Roof Material (homogeneous to Barn Roof)	None Detected
SHED #5	
Asphalt Roof Shingles (homogeneous to Barn Roof)	None Detected

TABLE 2
SUMMARY OF ASBESTOS-CONTAINING MATERIALS
576 SHORE ROAD
PERRY, MAINE

Room Name	Sample #	Sheet Flooring White w/Pink SF (Square Foot)	Comment
MAIN HOUSE			
First Floor: Bathroom; Second Floor Bathroom	MAIN-003A	100 80	
Sub Total: Main House		**180**	
TOTAL		**180**	

Note:
SF = Square Feet
LF = Linear Feet
EA = Each

TABLE 3
ESTIMATED ACM ABATEMENT COSTS
576 SHORE ROAD
PERRY, MAINE

IDENTIFIED ASBESTOS-CONTAINING MATERIALS	TOTAL ESTIMATED QUANTITY	UNIT COST	ESTIMATED ABATEMENT COST
MAIN HOUSE			
ACM Sheet Flooring	180 SF	$20/SF	$ 3,600
TOTAL			**$ 3,600**

SF = Square Feet
LF = Linear Feet
EA = Each

TABLE 4
HAZARDOUS MATERIALS INVENTORY
576 SHORE ROAD
PERRY, MAINE

Identified Hazardous Materials	Quantity (Each)	Quantity Per Unit	Total Estimated Quantity	Unit Cost	Estimated Remediation Cost
MAIN HOUSE					
Fluorescent Light Tubes - 4 foot	20	4 LF/EA	80	$0.20	$ 16
Suspect PCB-Containing Light Ballasts	7	5 lbs/EA	35	$0.50	$ 18
Emergency Light	1	5 lbs/EA	5	$5.00	$ 25
Mercury-containing Thermostats	2	5 lbs/EA	10	$5.00	$ 50
Above-Ground Storage Tank (AST)	1	1 / EA	1	$500.00	$ 500
Sub-Total (Main House)					**$ 609**
BARN					
Fluorescent Light Tubes - 4 foot	11	4 LF/EA	44	$0.20	$ 9
Suspect PCB-Containing Light Ballasts	5	5 lbs/EA	25	$0.50	$ 13
Emergency Lights	1	5 lbs/EA	5	$5.00	$ 25
Sub-Total (Barn)					**$ 46**
SHED #2 (WORKSHOP)					
Fluorescent Light Tubes - 4 foot	16	4 LF/EA	64	$0.20	$ 13
Suspect PCB-Containing Light Ballasts	4	5 lbs/EA	20	$0.50	$ 10
Miscellaneous containers (motor oil)	3	EA	3	$5.00	$ 15
Sub-Total (Shed #2 workshop)					**$ 38**
DEBRIS PILE #3 AND DEBRIS PILE #5					
Propane Tanks	4	EA	4	$5.00	$ 20
Sub-Total (Debris Piles #3 and #5)					**$ 20**
Transportation (per pickup)	1	-	-	$1,000	$ 1,000
Labor (Mandays)	1	-	-	$500	$ 500
Sub-Total					**$ 1,500**
TOTAL					**$ 2,213**

LF = Linear Feet
EA = Each
lb= Pound

TABLE 5
SUMMARY OF LEAD-BASED PAINT AND SAMPLE RESULTS
576 SHORE ROAD
PERRY, MAINE

Suspect Building Components	Sample Results
MAIN HOUSE	
Interior Ceiling and Wall Systems	No LBP Identified
Interior Window, Door, and Miscellaneous Trim (i.e. baseboards)	No LBP Identified
Interior Window and Doors	No LBP Identified
Interior Cabinets	No LBP Identified
Interior Stair System	No LBP Identified
Interior Baseboard Heaters	No LBP Identified
Exterior Clapboard Siding beneath Vinyl	No LBP Identified
Exterior Cornerboard Trim beneath Vinyl	No LBP Identified
Exterior Entry Doors and Trim	No LBP Identified
Exterior Window Systems	No LBP Identified
Exterior Bulkhead	No LBP Identified
BARN	
Interior - Sheetrock Wall System	No LBP Identified
Exterior - Sliding Doors and Trim	No LBP Identified
Exterior - Entry Door and Trim	No LBP Identified
Exterior - Cornerboards	No LBP Identified
Exterior - Soffit	No LBP Identified
SHED #1 (WOOD STORAGE)	
Exterior - Siding (rear of structure)	No LBP Identified
SHED #2 (WORKSHOP)	
Interior - Floor	No LBP Identified
Interior - Window Well and Window Sash	No LBP Identified
Exterior - Siding (rear of structure)	No LBP Identified
Exterior - Double Doors and Frame	LBP Identified
DEBRIS PILE #2	
Wood chip pieces in debris pile (beneath overhang)	LBP Identified
SHED #3	
Exterior Siding and Trim	No LBP Identified
SHED #4	
Exterior Siding and Trim	No LBP Identified
SHED #5	
Exterior Siding	No LBP Identified

APPENDIX A

ASBESTOS INSPECTOR CERTIFICATION
LEAD RISK ASSESSOR CERTIFICATION

R.J. Enterprises, Inc.

This is to certify that:

Deborah Kasik

has completed the requisite 4 -hour refresher training, and has passed an examination for the

Asbestos Inspector Refresher

course pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646
and Maine State Regulations 06-096 CMR 425.5 (E)

11/02/18	**11/02/19**	
Date(s) of Training	*Expiration Date*	*Elizabeth Storer, Director of Training*
11/02/18	100%	
Exam Date	*Exam Score*	*Elizabeth Storer, Training Instructor*
AIR-18-11-1-4		**TP-0031**
Certificate Number		*Training Provider ID #*

51 River Road, Brunswick, ME 0401

email info@rjenterprisesinc.net

State of Maine
Asbestos Abatement Program

Deborah A. Kasik

Inspector
Cert No. AI-0177
Trn.Exp.Date 11/02/2019
Expiration Date 11/30/2019
This is not a legal form of official identification

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

May 8, 2019

Attn: Deborah A. Kasik
CES, Inc.
PO Box 639
Brewer, Maine 04412

Dear Ms. Kasik,

Your lead application for certification has been received and **approved**. You have been granted certification as a **Lead Risk Assessor LR-0003**. Enclosed is your wallet card, with an expiration date of **May 31, 2020**. All employees working on a lead abatement project must carry this photo ID wallet card. The card is property of the individual to whom it is issued. Your responsibility as a licensee is to ensure delivery of the card to person in your employment. This letter should be retained for your company files as record of certification. Please attach 1 updated passport size photo with every application.

Thank you for your cooperation and your completed application(s). Applications can now be found on our DEP webpage at the following:
http://www.maine.gov/dep/rwm/lead/forms/index.htm

If you have any questions on this certification or on any other aspect of DEP's lead abatement licensing program, please call Sandy Moody (207) 287-7751 or email sandy.j.moody@maine.gov

Sincerely,

Sandra J. Moody

Sandra J. Moody, Environmental Specialist
Division of Remediation
Bureau of Remediation and Waste Management

Enclosure

State of Maine
Lead Abatement Program

Deborah A. Kasik

Risk Assessor
Cert No. LR-0003
Trn.Exp.Date 05/08/2020
Expiration Date 05/31/2020
This is not a legal form of official identification

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04679-2094
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

APPENDIX B

ASBESTOS ANALYTICAL LABORATORY CERTIFICATIONS

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: November 01, 2020
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: November 01, 2020
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: November 01, 2020
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Beth Bair

Elizabeth Bair
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 17 – 09/11/2018

Date Issued: 11/30/2018

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc. Laboratory ID: **100194**
200 Route 130 North, Cinnaminson, NJ 08077 Issue Date: 02/19/2019

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	**Field of Testing (FoT)** (FoTs cover all relevant IH matrices)	**Technology sub-type/ Detector**	**Published Reference Method/Title of In-house Method**	**Method Description or Analyte** *(for internal methods only)*
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	
			NIOSH 1005 Modified	
			NIOSH 1400 Modified	
			NIOSH 1500 Modified	
			NIOSH 1501 Modified	
			NIOSH 1550 Modified	
			NIOSH 1603 Modified	
			NIOSH 2000 Modified	
		GC/ECD	NIOSH 5502 Modified	
			NIOSH 5503 Modified	
			NIOSH 5510 Modified	
			OSHA 1010 Modified	
	GC/MS		EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501 Modified	
	Ion Chromatography (IC)		NIOSH 6004 Modified	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-214	
			OSHA ID-215 Modified Version 2	
	Liquid Chromatography	HPLC/FL	NIOSH 2016 Modified	
		HPLC/UV	NIOSH 5506 Modified	
		LC/MS	NIOSH 9111 Modified	

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009 Modified	
			OSHA ID-140 Modified	
			OSHA ID-145	
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300 Modified	
	X-ray Diffraction (XRD)		NIOSH 7500 Modified	
			OSHA ID-142 Modified	
	UV/VIS (Colorimetric)		NIOSH 6010 Modified	
Asbestos/Fiber Microscopy Core	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	EPA AHERA Method (40 CFR 763, Subpart E, Appendix A, Mandatory Method
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	
Beryllium Testing	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300	
			NIOSH 7303	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

October 31, 2018

Laboratory ID: 100194

Nicholas Straccione
EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

Dear Mr. Straccione:

AIHA Laboratory Accreditation Programs, LLC (AIHA-LAP, LLC) has approved an extension to your laboratory's current certificate of accreditation in the Industrial Hygiene, Environmental Lead and Environmental Microbiology. This extension will expire on December 01, 2018. Remember that your laboratory must maintain proficiency per Policy Module 6 in order for the new certificate to be issued.

Your laboratory remains an accredited laboratory in IHLAP, ELLAP and EMLAP. Please keep a copy of this letter with your expired certificate. If you have questions or concerns, please feel free to contact Olena Bulgakova, Accreditation Manager at (703) 846-0792.

Sincerely,

Cheryl O. Morton

Cheryl O. Morton
Managing Director
AIHA Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042 USA
main +1 703-846-0736 *fax* +1 703-207-8558
Twitter: *@AIHA_LAP_LLC*

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 500094-0

EMSL Analytical, Inc.
South Portland, ME

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

2018-10-01 through 2019-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
Ms. Christina Lentz
Phone: 603-898-7074 Fax: 603-898-6797
Email: clentz@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 500094-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

State of Maine
Department of Environmental Protection

LICENSE

EMSL Analytical, Inc.

Asbestos Analytical Laboratory
(Bulk)

License Number: LB-0039 **Expiration Date: 10/31/2019**

State of Maine

Department of Environmental Protection

LICENSE

EMSL Analytical, Inc.

Asbestos Analytical Laboratory

(Air)

License Number: LA-0038 **Expiration Date: 10/31/2019**

PORTLAND - INDIVIDUAL ANALYST CERTIFICATIONS

State of Maine

March 13, 2019

Employee Name	*Lab Location*	*State Certified*	*Certification No.*	*Type of Cert.*	*Exp. Date*
Zachary Carbee	S. Portland	Maine	BA-0174	Asbestos PLM Analyst	10/31/2019
Stephen Severn	S. Portland	Maine	AA-0497	Asbestos PCM Analyst	1/31/2020
Stephen Severn	S. Portland	Maine	BA-0178	Asbestos PLM Analyst	1/31/2020
Thomas Stegerman	S. Portland	Maine	BA-0197	Asbestos PLM Analyst	1/31/2020
Christina Lentz	S. Portland	Maine	BA-0142	Asbestos PLM Analyst	1/31/2020
Christina Lentz	S. Portland	Maine	AA-0439	Asbestos PCM Analyst	1/31/2020
Samantha Voigt	S. Portland	Maine	BA-0188	Asbestos PLM Analyst	10/31/2019

APPENDIX C

ASBESTOS LABORATORY ANALYTICAL RESULTS

MAIN HOUSE

EMSL Analytical, Inc.
161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID: 621900803
Customer ID: CESI62
Customer PO:
Project ID:

Attn: Deb Kasik
CES/Summit Environmental Consultants
465 S. Main Street
PO Box 639
Brewer, ME 04412

Phone: (207) 989-4824
Fax: (207) 989-4881
Collected: 6/ 4/2019
Received: 6/06/2019
Analyzed: 6/11/2019

Proj: 10520.008-02 / Main House

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: MAIN-001A — ***Lab Sample ID:*** **621900803-0001**
Sample Description: Basement/Refractory Cement

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: MAIN-001B — ***Lab Sample ID:*** **621900803-0002**
Sample Description: Basement/Refractory Cement

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: MAIN-001C — ***Lab Sample ID:*** **621900803-0003**
Sample Description: Basement/Refractory Cement

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: MAIN-002A — ***Lab Sample ID:*** **621900803-0004**
Sample Description: First Floor - Kitchen/S.F. Cream w/ Squares

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Beige	6.4%	93.6%	None Detected	

Client Sample ID: MAIN-002B — ***Lab Sample ID:*** **621900803-0005**
Sample Description: First Floor - Kitchen/S.F. Cream w/ Squares

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Beige	6.1%	93.9%	None Detected	

Client Sample ID: MAIN-002C — ***Lab Sample ID:*** **621900803-0006**
Sample Description: First Floor - Kitchen/S.F. Cream w/ Squares

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Beige	4.7%	95.3%	None Detected	

Client Sample ID: MAIN-003A — ***Lab Sample ID:*** **621900803-0007**
Sample Description: First Floor - Bathroom/S.F. White w/ Pink

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	White/Pink	0.93%	98.0%	**1.1% Chrysotile**	

EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID:	621900803
Customer ID:	CESI62
Customer PO:	
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: MAIN-003B **Lab Sample ID:** 621900803-0008
Sample Description: First Floor - Bathroom/S.F. White w/ Pink

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019			Positive Stop (Not Analyzed)		

Client Sample ID: MAIN-003C **Lab Sample ID:** 621900803-0009
Sample Description: Second Floor - Bathroom/S.F. White w/ Pink

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019			Positive Stop (Not Analyzed)		

Client Sample ID: MAIN-004A **Lab Sample ID:** 621900803-0010
Sample Description: Second Floor - Bathroom/Sheetrock (Ceiling)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	4.0%	96.0%	None Detected	

Client Sample ID: MAIN-004B **Lab Sample ID:** 621900803-0011
Sample Description: Second Floor - Rear Bedroom/Sheetrock (Wall)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	4.0%	96.0%	None Detected	

Client Sample ID: MAIN-004C **Lab Sample ID:** 621900803-0012
Sample Description: First Floor - Living Rm/Sheetrock (Wall)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	7.0%	93.0%	None Detected	

Client Sample ID: MAIN-005A **Lab Sample ID:** 621900803-0013
Sample Description: First Floor - Living Rm/Yellow Adhesive (Ceil. Tile)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Yellow	0.0%	100%	None Detected	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

PLM: ME CERT # BA-0188, BA-0197

PLM EPA NOB: ME CERT # BA-0197

Analyst(s):

Samantha Voigt	PLM (2) PLM Grav. Reduction (1)
Thomas Stegeman	PLM (4) PLM Grav. Reduction (4)

Reviewed and approved by:

Zackary Carbee, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. This test report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. EMSL bears no responsibility for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples. PLM alone is not consistently reliable in detecting asbestos in floor coverings and similar NOBs

Samples analyzed by EMSL Analytical, Inc. South Portland, ME

Initial report from: 06/12/201909:31:19

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900803

Company : CES, INC	**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments**
Street: 465 S MAIN STREET	*Third Party Billing requires written authorization from third party*
City: BREWER **State/Province:** ME	**Zip/Postal Code:** 04412 **Country:** US
Report To (Name): DEB KASIK	**Telephone #:** 207989-4824
Email Address: dkasik@cesincusa.com	**Fax #:** 207 989-4881 **Purchase Order:**
Project Name/Number: 10520.008-02	**Please Provide Results:** ☐ Fax ✓ Email ☐ Mail
U.S. State Samples Taken: ME MAIN HOUSE	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ■ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	**TEM – Bulk**
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 6/4/19

Samplers Name: Deb Kasik **Samplers Signature:** Deborah A Kasik

Sample #	HA #	Sample Location	Material Description
MAIN-001A		Basement	Refractory Cement
B		"	" "
C		"	" "
MAIN-002A		First Floor - Kitchen *5	SF cream w/ squares
B		" " *4	"
C		" " *3	"
MAIN-003A		First Floor - Bathroom *4	SF- white w/ pink
B		" "	"
C		Second Floor "	"
MAIN-004A		Second Floor - Bathroom	Sheetrock (ceiling)

Client Sample # (s): - **Total # of Samples:** 13

Relinquished (Client): Deborah A Kasik **Date:** 6/4/19 **Time:** 5:00pm

Received (Lab): Steph S **Date:** 6/6/19 **Time:** 10:30AM

Comments/Special Instructions: *1 near perimeter wall S.F. Sheet Flooring
*2 near closet *4 near fridge
*3 near cabinets *5 near door

NOB PER MAINE DEP
BillTo: CES, INC,

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Page 1 of 2 pages

E. Fedex (1 of 5) 7757 2926 2582

OrderID: 621900803

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material
Chain of Custody

EMSL Order Number (*Lab Use Only*):

621900803

EMSL Analytical, Inc.
161 John Roberts Road

South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
MAIN-004B		Second Floor Rear bedroom	Sheetrock - (Wall)
C		First floor - Living Rm	" "
MAIN-005A		First Floor - Living Rm	Yellow Adhesive (cer. tile)

***Comments/Special Instructions:**

NOB PER MAINE DEP
BillTo: CES, INC,

MAIN HOUSE

Page 2 of 2 pages

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BARN

EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID:	621900804
Customer ID:	CESI62
Customer PO:	
Project ID:	

Attn: Deb Kasik
CES/Summit Environmental Consultants
465 S. Main Street
PO Box 639
Brewer, ME 04412

Proj: 10520.008-02 / Barn

Phone:	(207) 989-4824
Fax:	(207) 989-4881
Collected:	6/ 4/2019
Received:	6/06/2019
Analyzed:	6/11/2019

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: BARN-001A — ***Lab Sample ID:*** **621900804-0001**
Sample Description: Interior/Sheetrock

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: BARN-001B — ***Lab Sample ID:*** **621900804-0002**
Sample Description: Interior/Sheetrock

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: BARN-001C — ***Lab Sample ID:*** **621900804-0003**
Sample Description: Interior/Sheetrock

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: BARN-002A — ***Lab Sample ID:*** **621900804-0004**
Sample Description: Exterior/Corrugated Roof Material

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

Client Sample ID: BARN-002B — ***Lab Sample ID:*** **621900804-0005**
Sample Description: Exterior/Corrugated Roof Material

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

Client Sample ID: BARN-002C — ***Lab Sample ID:*** **621900804-0006**
Sample Description: Exterior/Corrugated Roof Material

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

Client Sample ID: BARN-003A — ***Lab Sample ID:*** **621900804-0007**
Sample Description: Exterior/Asphalt Roof Shingles (Orange)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Orange	0.0%	100%	None Detected	

EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID:	621900804
Customer ID:	CESI62
Customer PO:	
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: BARN-003B ***Lab Sample ID:*** **621900804-0008**

Sample Description: Exterior/Asphalt Roof Shingles (Orange)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Orange	0.0%	100%	None Detected	

Client Sample ID: BARN-003C ***Lab Sample ID:*** **621900804-0009**

Sample Description: Exterior/Asphalt Roof Shingles (Orange)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Orange	0.0%	100%	None Detected	

Client Sample ID: BARN-004A ***Lab Sample ID:*** **621900804-0010**

Sample Description: Exterior/Asphalt Roof Shingles (Gray)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

Client Sample ID: BARN-004B ***Lab Sample ID:*** **621900804-0011**

Sample Description: Exterior/Asphalt Roof Shingles (Gray)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

Client Sample ID: BARN-004C ***Lab Sample ID:*** **621900804-0012**

Sample Description: Exterior/Asphalt Roof Shingles (Gray)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Gray	0.0%	100%	None Detected	

PLM: ME CERT # BA-0188, BA-0197

PLM EPA NOB: ME CERT # BA-0188, BA-0197

Analyst(s):

Samantha Voigt	PLM (1) PLM Grav. Reduction (3)
Thomas Stegeman	PLM (2) PLM Grav. Reduction (6)

Reviewed and approved by:

Zackary Carbee, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. South Portland, ME

Initial report from: 06/12/201909:40:08

OrderID: 621900804

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900804

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Company : CES, INC		**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*	
Street: 465 S MAIN STREET			
City: BREWER	**State/Province:** ME	**Zip/Postal Code:** 04412	**Country:** US
Report To (Name): DEB KASIK		**Telephone #:** 207989-4824	
Email Address: dkasik@cesincusa.com		**Fax #:** 207 989-4881	**Purchase Order:**
Project Name/Number: 10520.008-02 Barn		**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail	
U.S. State Samples Taken: ME		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ■ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 6/4/19

Samplers Name: Deb Kasik **Samplers Signature:** Deborah J Kasik

Sample #	HA #	Sample Location	Material Description
BARN-001A		Interior	Sheetrock
B		"	"
C		"	"
BARN-002A		Exterior	Corrugated Roof Material
B		"	"
C		"	"
BARN-003A		Exterior	Asphalt Roof Shingles*
B		"	" (orange)
C		"	"
BARN-004A		Exterior	Asphalt Roof Shingles (gray)**

Client Sample # (s): - **Total # of Samples:** 12

Relinquished (Client): Deborah J Kasik **Date:** 6/4/19 **Time:** 5:00pm

Received (Lab): Steph S **Date:** 6/6/19 **Time:** 10AM

Comments/Special Instructions:
NOB PER MAINE DEP
BillTo: CES, INC,

*front + ½ of back
** Rear ½

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Page 1 of 2 pages
(2 of 5)
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1Z ... 2926 2582

OrderID: 621900804

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900804

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
BARN-004B		Exterior	Asphalt Roof Shingles
C		"	" (gray)

***Comments/Special Instructions:**

NOB PER MAINE DEP
BillTo: CES, INC,

BARN

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SHED #1
WOOD STORAGE

EMSL Analytical, Inc.
161 John Roberts Road South Portland, ME 04106
Tel/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order: 621900807
Customer ID: CESI62
Customer PO:
Project ID:

Attention: Deb Kasik
CES/Summit Environmental Consultants
465 S. Main Street
PO Box 639
Brewer, ME 04412
Project: 10520.008-02 / Shed #1

Phone: (207) 989-4824
Fax: (207) 989-4881
Received Date: 06/06/2019 10:00 AM
Analysis Date: 06/11/2019
Collected Date: 06/04/2019

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
SHED1-001A *621900807-0001*	Exterior - Asphalt Roof Shingles (Orange)	Orange Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected
SHED1-001B *621900807-0002*	Exterior - Asphalt Roof Shingles (Orange)	Orange Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected
SHED1-001C *621900807-0003*	Exterior - Asphalt Roof Shingles (Orange)	Orange Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected

ME CERT # BA-0188, BA-0197

Analyst(s)

Samantha Voigt (1)
Thomas Stegeman (2)

Zackary Carbee, Laboratory Manager
or other approved signatory

Initial report from: 06/12/2019 09:43:13

OrderID: 621900807

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900807

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Company : CES, INC		**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments**	
Street: 465 S MAIN STREET		*Third Party Billing requires written authorization from third party*	
City: BREWER	**State/Province:** ME	**Zip/Postal Code:** 04412	**Country:** US
Report To (Name): DEB KASIK		**Telephone #:** 207989-4824	
Email Address: dkasik@cesincusa.com		**Fax #:** 207 989-4881	**Purchase Order:**
Project Name/Number: 10520.008-02		**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail	
U.S. State Samples Taken: ME SHED #1		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ■ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 6/4/19

Samplers Name: Deb Kasik **Samplers Signature:** Deborah J Kasik

Sample #	HA #	Sample Location	Material Description
SHED1-001A		Exterior	Asphalt Roof Shingles
B		"	" (orange)
C		"	"

Client Sample # (s): - **Total # of Samples:** 3

Relinquished (Client): Deborah J Kasik **Date:** 6/4/19 **Time:** 5:00pm

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
NOB PER MAINE DEP
BillTo: CES, INC,

Page 1 of 1 pages

E. Fedex (SOFS)

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2582

EXTERIOR
BOILER

EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID: 621900805
Customer ID: CESI62
Customer PO:
Project ID:

Attn: Deb Kasik
CES/Summit Environmental Consultants
465 S. Main Street
PO Box 639
Brewer, ME 04412

Phone: (207) 989-4824
Fax: (207) 989-4881
Collected: 6/ 4/2019
Received: 6/06/2019
Analyzed: 6/11/2019

Proj: 10520.008-02 / Ext. Boiler

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: BOIL-001A — ***Lab Sample ID:*** **621900805-0001**

Sample Description: Door (Boiler)/Gasket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Brown	74.5%	25.5%	None Detected	

Client Sample ID: BOIL-001B — ***Lab Sample ID:*** **621900805-0002**

Sample Description: Door (Boiler)/Gasket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Brown	0.0%	100%	None Detected	

Client Sample ID: BOIL-001C — ***Lab Sample ID:*** **621900805-0003**

Sample Description: Door (Boiler)/Gasket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	6/11/2019	Brown	58.2%	41.8%	None Detected	

Client Sample ID: BOIL-002A — ***Lab Sample ID:*** **621900805-0004**

Sample Description: Door (Boiler)/Debris/Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BOIL-002B — ***Lab Sample ID:*** **621900805-0005**

Sample Description: Door (Boiler)/Debris/Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: BOIL-002C — ***Lab Sample ID:*** **621900805-0006**

Sample Description: Door (Boiler)/Debris/Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/06/2019	Gray	0.0%	100.0%	None Detected	

EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106

Phone/Fax: (207) 517-6921 / (207) 517-6922

http://www.EMSL.com / portlandlab@emsl.com

EMSL Order ID:	621900805
Customer ID:	CESI62
Customer PO:	
Project ID:	

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

PLM: ME CERT # BA-0188, BA-0197

PLM EPA NOB: ME CERT # BA-0188, BA-0197

Analyst(s):

Samantha Voigt	PLM (1) PLM Grav. Reduction (1)
Thomas Stegeman	PLM (2) PLM Grav. Reduction (2)

Reviewed and approved by:

Zackary Carbee, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. South Portland, ME

Initial report from: 06/12/201909:37:56

OrderID: 621900805

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900805

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Company : CES, INC	**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 465 S MAIN STREET	
City: BREWER **State/Province:** ME	**Zip/Postal Code:** 04412 **Country:** US
Report To (Name): DEB KASIK	**Telephone #:** 207989-4824
Email Address: dkasik@cesincusa.com	**Fax #:** 207 989-4881 **Purchase Order:**
Project Name/Number: 10520.008-02 EXT. BOILER	**Please Provide Results:** ☐ Fax ✓ Email ☐ Mail
U.S. State Samples Taken: ME	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ■ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 6/4/19

Samplers Name: Deb Kasik **Samplers Signature:** Deborah J Kasik

Sample #	HA #	Sample Location	Material Description
BOIL-001A		Door (Boiler)	Gasket
B		"	"
C		"	"
BOIL-002A		Door (Boiler)	Debris/Insulation
B		"	"
C		"	"

Client Sample # (s): - **Total # of Samples:** 6

Relinquished (Client): Deborah J Kasik **Date:** 6/4/19 **Time:** 5:00pm

Received (Lab): Steph S. **Date:** 6/6/19 **Time:** 10AM

Comments/Special Instructions:

NOB PER MAINE DEP
BillTo: CES, INC,

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JUN 06 2019
By SRS

Page 1 of 1 pages

E. Fedex
(3 of 5)
1751 0726 2582

SHED #2
WORKSHOP

EMSL Analytical, Inc.
161 John Roberts Road South Portland, ME 04106
Tel/Fax: (207) 517-6921 / (207) 517-6922
http://www.EMSL.com / portlandlab@emsl.com

EMSL Order: 621900806
Customer ID: CESI62
Customer PO:
Project ID:

Attention: Deb Kasik
CES/Summit Environmental Consultants
465 S. Main Street
PO Box 639
Brewer, ME 04412
Project: 10520.008-02 / Shed #2

Phone: (207) 989-4824
Fax: (207) 989-4881
Received Date: 06/06/2019 10:00 AM
Analysis Date: 06/11/2019
Collected Date: 06/04/2019

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
SHED2-001A *621900806-0001*	Exterior - Glazing - Door Window	Gray Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected
SHED2-001B *621900806-0002*	Exterior - Glazing - Window (Left)	Gray Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected
SHED2-001C *621900806-0003*	Exterior - Glazing - Window (Rt)	Gray Non-Fibrous Homogeneous	100 Other	None	No Asbestos Detected

ME CERT # BA-0188, BA-0197

Analyst(s)

Samantha Voigt (2)
Thomas Stegeman (1)

Zackary Carbee, Laboratory Manager
or other approved signatory

Initial report from: 06/12/2019 09:36:14

OrderID: 621900806

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 621900806

EMSL Analytical, Inc.
161 John Roberts Road
South Portland, ME 04106
PHONE: (207) 517-6921
FAX: (207) 517-6922

Company : CES, INC	**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 465 S MAIN STREET	
City: BREWER **State/Province:** ME	**Zip/Postal Code:** 04412 **Country:** US
Report To (Name): DEB KASIK	**Telephone #:** 207989-4824
Email Address: dkasik@cesincusa.com	**Fax #:** 207 989-4881 **Purchase Order:**
Project Name/Number: 10520.008-02	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: ME SHED #2	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ■ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 6/4/19

Samplers Name: Deb Kasik **Samplers Signature:** Deborah J Kasik

Sample #	HA #	Sample Location	Material Description
SHED2-001A		Exterior	Glazing - door window
B		"	" window (left)
C		"	" window (rt)

Client Sample # (s): - **Total # of Samples:** 3

Relinquished (Client): Deborah J Kasik **Date:** 6/4/19 **Time:** 5:00pm

Received (Lab): Steph 8 **Date:** 6/6/19 **Time:** 10AM

Comments/Special Instructions:
NOB PER MAINE DEP
BillTo: CES, INC,

RECEIVED
JUN 06 2019
By SRS

E. Fedex
(4085)
1457 29262582

Page 1 of 1 pages

APPENDIX D

LEAD-BASED PAINT DETERMINATION REPORT

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**MAIN HOUSE - INTERIOR**	Page:	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** *Inspector Signature:* Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-1	PRE-CALIBRATION		NIST		WOOD	1.0		
L-2	PRE-CALIBRATION		NIST		WOOD	1.0		
L-3	PRE-CALIBRATION		NIST		WOOD	1.0		
L-4	PRE-CALIBRATION				WOOD	0.0		
L-5	PRE-CALIBRATION				WOOD	0.0		
L-6	PRE-CALIBRATION				WOOD	0.0		
L-7	FIRST FLOOR; LIVING ROOM		CEILING	WHITE	DRYWALL	0.0		
L-8			WALLS	WLLPPR	DRYWALL	0.0		
L-9			CEILING TRIM	STAIN	WOOD	0.0		
L-10			BASEBOARD HEATERS	WHITE	METAL	0.0		
L-11			WINDOW AND DOOR TRIM	STAIN	WOOD	0.0		
L-12			BUILT-IN BOOKCASES	STAIN	WOOD	0.0		
L-13			WINDOW SASHES	WHITE	VINYL	0.0/0.0		DOUBLE-HUNG AND CASEMENTS
L-14	FRONT ENTRY, HALL, STAIRS		CEILING	WHITE	DRYWALL	0.0		
L-15			WALLS	WLLPPR	DRYWALL	0.0		
L-16			BASEBOARDS	STAIN	WOOD	0.0		
L-17			STAIR HANDRAIL AND BALUSTERS	STAIN	WOOD	0.0		
L-18			STAIR TREADS AND RISERS	STAIN	WOOD	0.0		
L-19			STAIR STRINGER	STAIN	WOOD	0.0		
L-20			DOORS AND DOOR TRIM	STAIN	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT: SITE: BLDG:	WOOD PLC 576 SHORE ROAD, PERRY, MAINE **MAIN HOUSE - INTERIOR**	DATE: CES, INC #: Page:	6/4/2019 10520.008-02A 2

XRF # RMD LPA-1 #3305; ME Radiation License #31223 — *Inspector Signature:* Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm ^{2}	CONDITION	NOTES:
L-21	DINING ROOM		CEILING	WHITE	DRYWALL	0.0		
L-22			WALLS	WLLPPR	DRYWALL	0.0		
L-23			BASEBOARD HEATER	WHITE	METAL	0.0		
L-24			WINDOW TRIM	STAIN	WOOD	0.0		
L-25			BUILT-IN CABINET - TRIM	STAIN	WOOD	0.0		
L-26			BUILT-IN CABINET - INNER WALLS	WHITE	DRYWALL	0.0		
L-27			DOOR TRIM	STAIN	WOOD	0.0		
L-28	KITCHEN		CEILING	WHITE	DRYWALL	0.0		
L-29			WALLS	WLLPPR	DRYWALL	0.0		
L-30			WINDOW TRIM	STAIN	WOOD	0.0		
L-31			CABINETS	STAIN	WOOD	0.0		
L-32			DOOR TRIM	STAIN	WOOD	0.0		
L-33	SECOND FLOOR; BEDROOMS		CEILINGS	WHITE	DRYWALL	0.0/0.0/0.0		
L-34			WALLS	WLLPPR	DRYWALL	0.0/0.0/0.0		
L-35			WINDOW & DOOR TRIM	STAIN	WOOD	0.0/0.0/0.0		
L-36			BASEBOARD HEATERS	WHITE	METAL	0.0/0.0/0.0		
L-37	BATHROOMS		CEILING	WHITE	DRYWALL	0.0		
L-38			WALLS - UPPER	WLLPPR	DRYWALL	0.0		
L-39			WALLS - LOWER	PINK	CERAMIC TILE	0.0		TAN IN FIIRST FLOOR BATHROOM (0.0)
L-40			WINDOW & DOOR TRIM	STAIN	WOOD	0.0/0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CESINC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**MAIN HOUSE - INTERIOR / EXTERIOR**	Page:	3

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-41	MUD ROOM		DOOR TO GARAGE	GREEN	WOOD	0.0		
L42			WINDOW SASH (EXT. SIDE)	WHITE	WOOD	0.0		
L-43	GARAGE		PEGBOARD	WHITE	WOOD	0.0		
L-44	EXTERIOR (HOUSE AND GARAGE)		CLAPBOARDS	TAN	WOOD	0.3/0.0		BENEATH VINYL SIDING
L-45			CORNERBOARDS	TAN	WOOD	0.0/0.0		BENEATH VINYL SIDING
L-46			FRONT ENTRY DOOR	GREEN	WOOD	0.0		
L-47			FRONT ENTRY SIDELITE PANELS	WHITE	WOOD	0.0		
L-48			FRONT DOOR THRESHOLD	WHITE	WOOD	0.0/0.0		
L-49			MUD ROOM DOOR	GRAY	METAL	0.0		
L-50			MUD ROOM DOOR CASING AND JAMB	WHITE	WOOD	0.0/0.0		
L-51			BOW WINDOW SASH AND TRIM	WHITE	WOOD	0.0/0.0/0.0		
L-52			BASEMENT WINDOW SASH AND TRIM	WHITE	WOOD	0.0/0.0		
L-53			REAR MUD ROOM DOOR	NO ID	METAL	0.0		
L-54			REAR MUD ROOM DOOR CASING &	WHITE	WOOD	0.0/0.0		
L-55			BULKHEAD	RED	METAL	0.1/0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

	CLIENT:	WOOD PLC	*DATE:*	6/4/2019
CES INC	*SITE:*	576 SHORE ROAD, PERRY, MAINE	*CES, INC #:*	10520.008-02A
	BLDG:	**BARN - INTERIOR / EXTERIOR**	*Page:*	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	*SAMPLE LOCATION*	*SIDE*	*COMPONENT(S)*	*COLOR*	*SUBSTRATE TYPE:*	*RESULTS mg/cm ^{2}*	*CONDITION*	*NOTES:*
L-1	INTERIOR		WALL	WHITE	DRYWALL	0.0		
L-2	EXTERIOR		FRONT SLIDING DOOR	GREEN	WOOD	0.0/0.0		FACING MAIN HOUSE
L-3			FRONT SLIDING DOOR TRIM	WHITE	WOOD	0.0/0.0		
L-4			FRONT DOOR	WHITE	METAL	0.0		MURAL
L-5			SIDE SLIDING DOOR	MIX	WOOD	0.0/0.1		MURAL
L-6			CORNERBOARDS	WHITE	WOOD	0.0		
L-7			SOFFIT	WHITE	WOOD	0.2/0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**SHED #1 - WOOD STORAGE; EXTERIOR**	Page:	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-1	EXTERIOR		REAR STAINED SIDING	ORANGE	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**SHED #2 - WORKSHOP; INTERIOR AND EXTERIOR**	Page:	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	*SAMPLE LOCATION*	*SIDE*	*COMPONENT(S)*	*COLOR*	*SUBSTRATE TYPE:*	*RESULTS mg/cm²*	*CONDITION*	*NOTES:*
L-1	INTERIOR		FLOOR	TAN	CONCRETE	0.0		
L-2			WINDOW WELL	BLUE	WOOD	0.0		
L-3			WINDOW SASH	BLUE	WOOD	0.0		
L-4	EXTERIOR		SIDING	BLUE	METAL	0.0		
L-5			**DOUBLE DOORS**	**WHITE**	**WOOD**	**1.2/1.5**	**POOR**	**DEBRIS ON GROUND**
L-6			**DOUBLE DOOR - FRAME**	**WHITE**	**WOOD**	**3.7**	**POOR**	**DEBRIS ON GROUND**

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm² (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	*CLIENT:*	WOOD PLC	*DATE:*	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	*CES, INC #:*	10520.008-02A
	BLDG:	**SHED #3 - EXTERIOR**	*Page:*	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm ^{2}	CONDITION	NOTES:
L-1	EXTERIOR		SIDING	RED	WOOD	0.0		
L-2			SIDING - REAR	WHITE	WOOD	0.0		
L-3			TRIM	RED	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT: SITE: BLDG:	WOOD PLC 576 SHORE ROAD, PERRY, MAINE **SHED #4 - EXTERIOR**	DATE: CES, INC #: Page:	6/4/2019 10520.008-02A 1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** *Deborah A. Kasik/LR#0003*

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm ^{2}	CONDITION	NOTES:
L-1	EXTERIOR		SIDING	NO ID	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**SHED #5 - EXTERIOR**	Page:	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-1	EXTERIOR		SIDING	RED	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT: SITE: BLDG:	WOOD PLC 576 SHORE ROAD, PERRY, MAINE **DEBRIS PILE #2**	DATE: CES, INC #: Page:	6/4/2019 10520.008-02A 1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm ^{2}	CONDITION	NOTES:
L-1	EXTERIOR		MISCELLANEOUS WOOD CHIPS	WHITE	WOOD	1.0/1.2	POOR	

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC

CLIENT:	WOOD PLC	*DATE:*	6/4/2019
SITE:	576 SHORE ROAD, PERRY, MAINE	*CES, INC #:*	10520.008-02A
BLDG:	**DEBRIS PILE #3**	*Page:*	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-1	EXTERIOR		MISCELLANEOUS WOOD	GRAY	WOOD	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	*CLIENT:* *SITE:* *BLDG:*	WOOD PLC 576 SHORE ROAD, PERRY, MAINE **DEBRIS PILE #6**	*DATE:* *CES, INC #:* *Page:*	6/4/2019 10520.008-02A 1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** Deborah A. Kasik/LR#0003

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm ^{2}	CONDITION	NOTES:
L-1	EXTERIOR		RUSTY BUCKET	BLUE	METAL	0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm ^{2} (milligrams per square centimeter)

ENVIRONMENTAL LEAD-BASED PAINT XRF RESULTS

CES INC	CLIENT:	WOOD PLC	DATE:	6/4/2019
	SITE:	576 SHORE ROAD, PERRY, MAINE	CES, INC #:	10520.008-02A
	BLDG:	**DEBRIS PILE #7**	Page:	1

XRF # **RMD LPA-1 #3305; ME Radiation License #31223** ***Inspector Signature:*** *Deborah A. Kasik/LR#0003*

FIELD ID #	SAMPLE LOCATION	SIDE	COMPONENT(S)	COLOR	SUBSTRATE TYPE:	RESULTS mg/cm^2	CONDITION	NOTES:
L-1	EXTERIOR		RUSTY TRAILER	RUST	METAL	0.2/0.0		

D = Drywall; P = Plaster; W = Wood; M = Metal; C = Concrete; B = Brick; V = Vinyl; CER = Ceramic; O = Other (indicate material). Results expressed as mg/cm^2 (milligrams per square centimeter)

APPENDIX E

PHOTOGRAPHIC LOG

WOOD PLC
576 SHORE ROAD, PERRY, MAINE

Photo No. 1

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Main House with attached 2-car garage.

Photo By: DAK

Photo No. 2

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Main House and Garage – Rear View

Photo By: DAK

Photo No. 3	
Photo Date: June 4, 2019	
Site Location: 576 Shore Road Perry, Maine	
Description: Main House; Basement – Refractory Cement on furnace (Sample #'s: Main – 001ABC)	
Photo By: DAK	

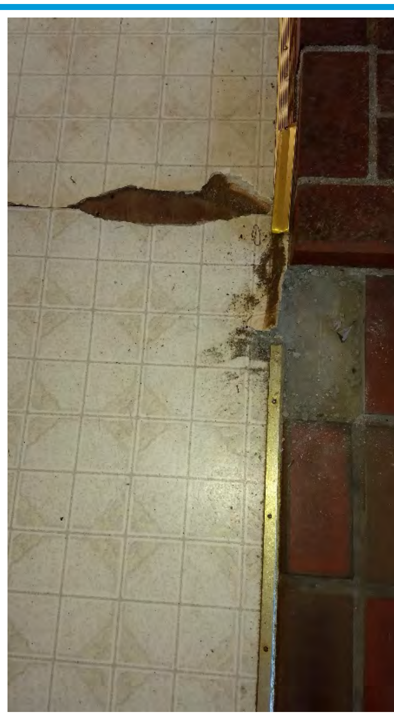

Photo No. 4	
Photo Date: June 4, 2019	
Site Location: 576 Shore Road Perry, Maine	
Description: Main House; First Floor Kitchen – Sheet flooring (Sample #: Main-002ABC)	
Photo By: DAK	

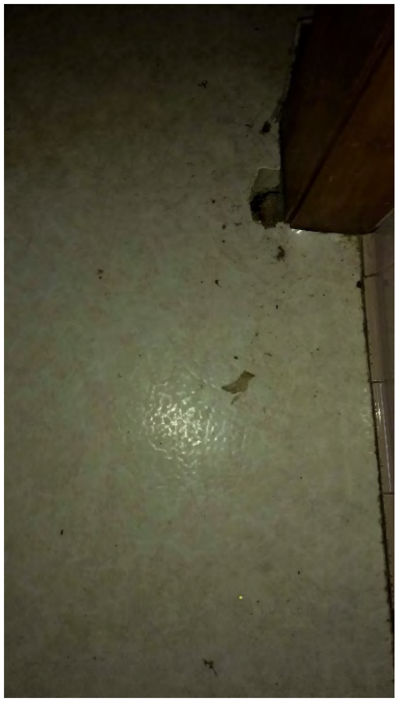

Photo No.	5
Photo Date:	June 4, 2019
Site Location:	576 Shore Road Perry, Maine
Description:	**Main House; First and Second Floor Bathrooms – ACM Sheet Flooring (Sample #: Main-003A)**
Photo By:	DAK

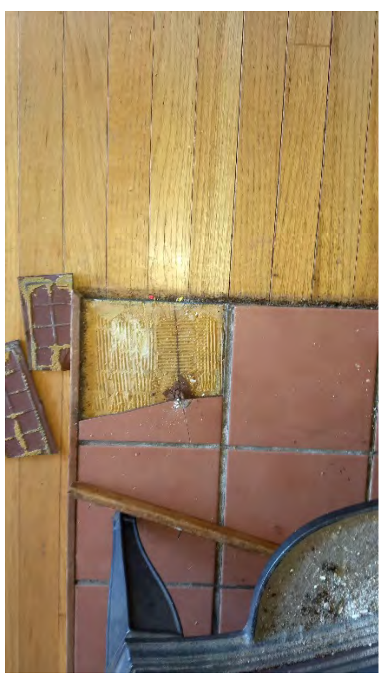

Photo No.	6
Photo Date:	June 4, 2019
Site Location:	576 Shore Road Perry, Maine
Description:	Main House; First Floor – Yellow Tile Adhesive (Sample #: Main-005A)
Photo By:	DAK

WOOD PLC
576 SHORE ROAD, PERRY, MAINE

	**Photo No.** 7 **Photo Date:** June 4, 2019 **Site Location:** 576 Shore Road Perry, Maine **Description:** Barn **Photo By:** DAK

	**Photo No.** 8 **Photo Date:** June 4, 2019 **Site Location:** 576 Shore Road Perry, Maine **Description:** Barn – Interior Sheetrock Wall System (Sample #'s: Barn 001ABC) **Photo By:** DAK

Photo No. 9

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Barn; Exterior – Corrugated and Asphalt Shingle Roof System (Sample #'s: Barn 002ABC and Barn 003ABC.

Photo By: DAK

Photo No. 10

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #1 (Wood Shed) – Asphalt Roof Shingles (Sample #: Shed1-001ABC)

Photo By: DAK

Photo No. 11

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Exterior Wood Boiler – Door Gasket (Sample #: Boil-001ABC) and Insulation/Debris (Sample #: Boil-002ABC)

Photo By: DAK

Photo No. 12

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #2 (Workshop)

Photo By: DAK

Photo No. 13

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #2 (Workshop) – Door and Window Glazing (Sample #'s: Shed2-001ABC)

Photo By: DAK

Photo No. 14

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #2 (Workshop) – LBP identified on doors and frame. Debris on ground near the doors.

Photo By: DAK

Photo No. 15

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #3 (Red) and #4 (White) – no suspect materials identified. Shed #3 has similar corrugated roof as barn.

Photo By: DAK

Photo No. 16

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Shed #5 – no suspect materials on interior; similar roof system as barn.

Photo By: DAK

Photo No. 17

Photo Date:
June 4, 2019

Site Location:
576 Shore Road, Perry, Maine

Description:
Debris Pile #1 located behind Shed #1 – miscellaneous, unpainted wood.

Photo By: DAK

Photo No. 18

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #2 located immediately adjacent to the rear of the Barn, beneath the overhang – miscellaneous wood, rusty cans in plastic tote and aluminum.

Photo By: DAK

Photo No. 19

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #2 located immediately adjacent to the rear of the Barn – includes wood, metal, hosing, glass, plastic and non-ACM roof material

Photo By: DAK

Photo No. 20

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #3 located behind the barn and concealed by vegetation – includes a truck cap, 3 empty propane tanks, hoses, cushions and a barrel filled with tubing

Photo By: DAK

Photo No. 21

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #3 – close-up view

Photo By: DAK

Photo No. 22

Photo Date:
June 4, 2019

Site Location:
576 Shore Road, Perry, Maine

Description:
Debris Pile #3

Photo By: DAK

Photo No. 23

Photo Date:
June 4, 2019

Site Location:
576 Shore Road, Perry, Maine

Description:
Doghouse located between the Barn and Shed #3 with non-ACM roof shingles and miscellaneous unpainted wood debris.

Photo By: DAK

Photo No. 24

Photo Date:
June 4, 2019

Site Location:
576 Shore Road, Perry, Maine

Description:
Debris Pile #4 – consists of 8 tires, 2 empty propane tanks, miscellaneous, unpainted wood, concrete, fencing, and a couch.

Photo By: DAK

Photo No. 25	
Photo Date: June 4, 2019	
Site Location: 576 Shore Road Perry, Maine	
Description: Debris Pile #4	
Photo By: DAK	

Photo No. 26	
Photo Date: June 4, 2019	
Site Location: 576 Shore Road Perry, Maine	
Description: Debris Pile #4	
Photo By: DAK	

Photo No. 27

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #5 – consists of unpainted wood and tarps.

Photo By: DAK

Photo No. 28

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #6 – miscellaneous items at entrance to dirt path.

Photo By: DAK

Photo No. 29

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #7 – consists of a rusted trailer and target-practice deer.

Photo By: DAK

Photo No. 30

Photo Date:
June 4, 2019

Site Location:
576 Shore Road
Perry, Maine

Description:
Debris Pile #8 – consists of a pool lining and filter.

Photo By: DAK

Appendix D-1
Wetland Delineation Supporting Documentation

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer: Charles Lyman

Date: May 13, 2019

Photograph: 1

Direction: East

Description: View of Stream A at Shore Road.

Photographer: Charles Lyman

Date: May 2019

Photograph: 2

Direction: Northwest

Description: View of Stream A, lower section above Shore Rd.

Site Photographs – USCG Perry			
Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer: Charles Lyman ***Date:*** May 13, 2019 ***Photograph:*** 3 ***Direction:*** NA ***Description:*** View of plastic tile drain, discharging to stream (positive drain from existing house basement).	
Photographer: Charles Lyman ***Date:*** May 13, 2019 ***Photograph:*** 4 ***Direction:*** Northwest ***Description:*** View of Stream A, below man-made pond.	

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 5

Direction: Northwest

Description:
View of man-made pond.

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 6

Direction: Southeast

Description:
View of Stream A above man-made pond.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:

Charles Lyman

Date: May 13, 2019

Photograph: 7

Direction: West

Description:

View of woods road bisecting Wetland A.

Photographer:

Charles Lyman

Date: May 13, 2019

Photograph: 8

Direction: West

Description:

View of woods road as it transitions out of Wetland A, and up slope.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer: Charles Lyman ***Date:*** May 13, 2019 ***Photograph:*** 9 ***Direction:*** South ***Description:*** View of upland/wetland boundary, Wetland A.	
Photographer: Charles Lyman ***Date:*** May 13, 2019 ***Photograph:*** 10 ***Direction:*** South ***Description:*** View of Stream B, where it enters the property.	

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 11

Direction: East

Description:
View of Stream A, within Wetland A (PSS).

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 12

Direction: East

Description:
View of Stream B, bottom, Note Shore Road can be seen through trees..

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 13

Direction: NA

Description:
View of Wetland A (eroded) PFO area between fields.

Photographer:
Charles Lyman

Date: May 13, 2019

Photograph: 14

Direction: North

Description:
View of Wetland A (eroded) PFO area.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 1

Direction:
Northeast

Description:
View of Wetland A, typical PSS dominated.

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 2

Direction:
West

Description:
View of woods road, eroded.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 3

Direction:
Southwest

Description:
View of woods road through upland.

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 4

Direction:
Northeast

Description:
View of Wetland A from upland, note dense scrub shrub growth

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 5

Direction:
West

Description:
View of upland west of Wetland B, note open understory and white birch trees and lack of scrub shrub understory.

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 6

Direction:
NA

Description:
View of wind throw in Wetland B.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 7

Direction:
Northwest

Description:
View of Wetland B, note mound and pool microtopography.

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 8

Direction:
West

Description:
View of vernal pool complex, Wetland C.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 9

Direction:
South

Description:
View of vernal pool complex, Wetland C.

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 10

Direction:
Northwest

Description:
View of vernal pool complex, Wetland C.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 11

Direction:
NA

Description:
Typical view of spotted salamander eggs observed in vernal pool complex

Photographer:
Charles Lyman

Date:
May 14, 2019

Photograph: 12

Direction:
Southeast

Description:
Typical view of spotted salamander eggs observed in vernal pool complex.

Site Photographs – USCG Perry			
Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer: Charles Lyman ***Date:*** May 15, 2018 ***Photograph:*** 1 ***Direction:*** West ***Description:*** View of Wetland C.	
Photographer: Charles Lyman ***Date:*** May 15, 2018 ***Photograph:*** 2 ***Direction:*** NA ***Description:*** View of mucky peat material at TP WL C Wet.	

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 3

Direction:
South

Description:
View of Stream C.

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 4

Direction:
Northeast

Description:
View of Stream C

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 5

Direction:
NA

Description:
View of organic soil, TP WL B Wet.

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 6

Direction:
West

Description:
View of Wetland B

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer: Charles Lyman ***Date:*** May 15, 2018 ***Photograph:*** 7 ***Direction:*** NA ***Description:*** View of upland test pit, TP WL B UPL	
Photographer: Charles Lyman ***Date:*** May 15, 2018 ***Photograph:*** 8 ***Direction:*** Southeast ***Description:*** View of upland adjacent to Wetland B.	

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 9

Direction:
NA

Description:
View of upland soil (29 inches bgs) TP WL A UPL

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 10

Direction:
South

Description:
View of upland adjacent to Wetland A, TP WL A UPL.

Site Photographs – USCG Perry

Client:	USCG	***Project Number:***	**335000007.005.003**
Site Name:	USCG Perry	***Site Location:***	576 Shore Road

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 11

Direction:
NA

Description:
View of auger from Wetland A, TP WL A Wet. Bottom of organic lay/top of mineral layer.

Photographer:
Charles Lyman

Date:
May 15, 2018

Photograph: 12

Direction:
West

Description:
View of Wetland A, TP WL A Wet.

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: PVP -WL C. **MDIFW Pool ID:**

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Charles Lyman

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ● Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ● same as observer ○ other ____

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ○ Yes

c. Project Name: USCG - Perry

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ● No If no, was landowner permission obtained for survey? ● Yes ○ No

b. Landowner's contact information (required)

Name: USCG Phone: ____

Street Address: ____ City: ____ State: ____ Zip: ____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Perry

Brief site directions to the pool (using mapped landmarks):

-See attached figure w/ VP location shown - Located using sub-meter accurate Global Positioning System.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked. (SEE attached.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: ____ Latitude/Northing: ____

Coordinate system: ____

Check one: ● GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

● The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

○ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately ____ m ○ ft ○ in the compass direction of ____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): ______________

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ● Pool associated with larger wetland complex
- ○ Floodplain depression
- ○ Other: ______________

■ Check all wetland types that best apply to this pool:

☐ Forested swamp	☐ Wet meadow	☐ Slow stream	☒ Dug pond or borrow pit (PEAT HARVEST)
☐ Shrub swamp	☐ Lake or pond cove	☐ Floodplain	☐ Roadside ditch
☒ Peatland (fen or bog)	☐ Abandoned beaver flowage	☐ Mostly unvegetated pool	☐ Other: ______
☐ Emergent marsh	☐ Active beaver flowage	☐ ATV or skidder rut	

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ○ Natural ○ Natural-Modified ● Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

Historic PEAT EXCAVATIONS, NOT NATURAL FEATURES, Could Also Have been excavated for ICE ~~and~~ OR water supply.

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ● Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ○ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

W/IN BOG / LARGE Wetland Complex.

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ● 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: _____ ○ m ○ ft Length: _____ ○ m ○ ft (SEE Attached)

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ○ Organic matter (peat/muck) shallow or restricted to deepest portion
- ● Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☐ No vegetation in pool

■ Faunal indicators (check all that apply):

☐ Fish ☐ Bullfrog or Green Frog tadpoles ☐ Other: ______________

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ● No inlet or outlet
- ○ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): ______________

Maine State Vernal Pool Assessment Form

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 5/15/19 & 6/5/19

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ● No
- Was the entire pool surveyed for egg masses? ● Yes ○ No; what % of entire pool surveyed? ____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog															
Spotted Salamander	44	51		3	3		M	A							
Blue-spotted Salamander															
Fairy Shrimp[3]															

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

Note: Total egg masses counted in several PVPs. w/in close proximity. (It is Likely the PVP features were formed in Former PEAT excavations)

c. Rarity criteria – NONE OBSERVED

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification* P	H	S	CL**	SPECIES	Method of Verification* P	H	S	CL**
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

■ SVP (Complex) ~~■ Potential SVP~~ CHL ☐ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: ____ Initials: ____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

WETLAND A - WET.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: USCG - PERRY City/County: WASHINGTON Sampling Date: 5/15/19

Applicant/Owner: USCG State: ME Sampling Point: TP-WLA-Wet

Investigator(s): Charles Lyman Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5%

Subregion (LRR or MLRA): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Creasey gravelly silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: WETLAND A

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1) (STREAM/POND)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 6-12"
Water Table Present?	Yes X	No ___	Depth (inches): surface
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): surface

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND A - WET

VEGETATION – Use scientific names of plants. Sampling Point: TP-WLA-WET

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Red Maple	5%	Yes	
2. Balsam fir	40%		
3. White Birch	1%		
4.			
5.			
6.			
7.			
	46% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alder	100%	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
	100% = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Cinn fern	50%	Yes	
2. Sen. fern	50%	Yes	
3. Sedge	10%		
4. Grass	10%		
5. Raspberry	5%		
6. Goose berry	5%		
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ________ (A)

Total Number of Dominant Species Across All Strata: ________ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ________ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND A - Wet.

SOIL

Sampling Point: TP-WLA-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-19	BLACK						Muck	
0-2	DRK BROWN						Silt Loam	FIRM
2-6	Olive/gleyed		Redish brown	10	C	M	gravelly Silt Loam	FIRM

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- X Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Dense Till.

Depth (inches): 25" BGS

Hydric Soil Present? Yes X No ___

Remarks:

Wetland A - Wpl

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: USCG - Perry City/County: WASHINGTON Sampling Date: 5/15/19

Applicant/Owner: USCG State: ME Sampling Point: TP-WLA-upl

Investigator(s): Charles Lyman Section, Township, Range: ______

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Flat -> Concave Slope (%): 0-5%

Subregion (LRR or MLRA): 144B Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Creasey gravelly Silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ___ No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present? Yes ___ No X		
Wetland Hydrology Present? Yes ___ No X	If yes, optional Wetland Site ID: ______	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches):

Water Table Present? Yes ___ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches):

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND A - UPL

VEGETATION – Use scientific names of plants.

Sampling Point: TP-WL A-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. RED SPRUCE	50%	Y	
2. Balsam fir	50%	Y	
3.			
4.			
5.			
6.			
7.			
	100% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. BALSAM fir (SAP)	10%	Y	
2.			
3.			
4.			
5.			
6.			
7.			
	10% = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Sphagnum.	80%	Y	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		

Woody Vine Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ~~X~~ No X

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND A - UPL

SOIL

Sampling Point: TP-WLA-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2								
0-2	Brown						fine Sandy Loam	
2-6	Lt. Redish Brown							
6-16	Redish Brown		olive (12")	10%	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ~~R~~ BED ROCK

Depth (inches): 16"

Hydric Soil Present? Yes ___ No X

Remarks:

Wetland B - Wetland

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

5/15/19

Project/Site: USCG - Perry City/County: Washington Sampling Date: ~~TP-WLB-Wet~~

Applicant/Owner: USCG State: ME Sampling Point: TP-WLB-Wet

Investigator(s): Charles Lyman Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave/Flat Slope (%): 0 - 3%

Subregion (LRR or MLRA): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Lamoine-Rawsonville-Scantic NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? No Are "Normal Circumstances" present? Yes X No______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: WETLAND B

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9)
- __ Aquatic Fauna (B13)
- __ Marl Deposits (B15)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres on Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- __ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Stunted or Stressed Plants (D1)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 6"-12"

Water Table Present? Yes X No _____ Depth (inches): Surface

Saturation Present? Yes X No _____ Depth (inches): Surface
(includes capillary fringe)

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NONE

Remarks:

Wetland B - Wet

VEGETATION – Use scientific names of plants.

Sampling Point: TP-WLB-Wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam Fir	20%		
2. Blk Spruce	60%	Yes	
3. Red Maple	5%		
4.			
5.			
6.			
7.			
	85% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Winterberry	25%		
2. Alder	75%	YES	
3.			
4.			
5.			
6.			
7.			
	100% = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Sen. Fern	25%		
2. Grass	10%		
3. Sedge	10%		
4. Sphagnum	80%	yes	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125 = Total Cover		

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND B.

SOIL

Sampling Point: TP-WLB-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	Blk	100					MUCK	Histic Epipedon
0-4	Brown	100					gravelly ~~Loamy~~ coarse SAND	
4-6	olive Brn.	100					gravelly SAND	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- X Histic Epipedon (A2)
- X Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- __ Dark Surface (S7) (**LRR R, MLRA 149B**)
- __ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- __ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- __ Loamy Mucky Mineral (F1) (**LRR K, L**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- __ Coast Prairie Redox (A16) (**LRR K, L, R**)
- __ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- __ Dark Surface (S7) (**LRR K, L, M**)
- __ Polyvalue Below Surface (S8) (**LRR K, L**)
- __ Thin Dark Surface (S9) (**LRR K, L**)
- __ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- __ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- __ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: Dense fill
Depth (inches): 18" BGS

Hydric Soil Present? Yes X No ____

Remarks:

Wetland - B upland

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: USCG - Perry City/County: Washington Sampling Date: 5/15/19

Applicant/Owner: USCG State: ME Sampling Point: TP-WLB-UPL

Investigator(s): Charles Lynam Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR or MLRA): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Lamoine-Rowsevulle-Scantic NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ______	No X	Is the Sampled Area within a Wetland?	Yes ______ No X
Hydric Soil Present?	Yes ______	No X		
Wetland Hydrology Present?	Yes ______	No X	If yes, optional Wetland Site ID: ______	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No X Depth (inches):

Water Table Present? Yes ______ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches):

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND B - UPL

VEGETATION – Use scientific names of plants. Sampling Point: TP-WLB-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. White Birch	10%		
2. Red Spruce	40%	Yes	
3. Balsam Fir	40%	Yes	
4.			
5.			
6.			
7.			
	90% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Red Spruce (Sap)	10%		
2. Balsam Fir (Sap)	10%		
3.			
4.			
5.			
6.			
7.			
	21% = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Sphagnum	80%		
2. Grass	10%		
3. Sedge	5%		
4. Lichen	<1%		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95% = Total Cover		

Woody Vine Stratum (Plot size: —)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- __ 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ______ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND B - UPL

SOIL

Sampling Point: TP-WLB-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2							OM	
0-6"	BROWN						gravelly Sandy Loam.	
6-12"	Lt. BROWN						Sandy Loam	
Refusal @ 12"								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: BEDROCK

Depth (inches): 12"

Hydric Soil Present? Yes ___ No X

Remarks:

Wetland C - WET

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: USCG - Perry City/County: WASHINGTON Sampling Date: 5/15/19

Applicant/Owner: USCG State: ME Sampling Point: TP-WLC-Wet

Investigator(s): Charles Lyman Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): NONE Slope (%): 0%

Subregion (LRR or MLRA): 144 B Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Lamoine-Rawsonville-Scantic Complex NWI classification: PSS/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: WETLAND C

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 12-18"

Water Table Present? Yes X No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NONE

Remarks:

Wetland C - WET

VEGETATION – Use scientific names of plants. Sampling Point: TP-WL C-Wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. N. White Cedar	60%	Yes	
2. Balsam fir	10%		
3. Blk Spruce	15%		
4. Red Maple	5%		
5. Yellow Birch	1%		
6.			
7.			
	91% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Balsam fir (sap)	10%	Yes	
2. Winterberry	10%	Yes	
3. N. White Cedar (sap)	10%	Yes	
4.			
5.			
6.			
7.			
	30% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Cinn. fern	10%		
2. Sen. fern	20%	Yes	
3. Starflower	10%		
4. Sedge	5%		
5. Sphagnum	40%		
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85% = Total Cover		
Woody Vine Stratum (Plot size: NA)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland C - Wet

SOIL

Sampling Point: TP-Wet C-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-48"	BLK-BRN	100	—	—	—	—	MUCK	* "BOG" >48" organic mtl- Fibric -Sapric * QUAKING Substrate
48"-Limit of observations								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) (**LRR R, MLRA 149B**)
- __ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- __ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- __ Loamy Mucky Mineral (F1) (**LRR K, L**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- __ Coast Prairie Redox (A16) (**LRR K, L, R**)
- __ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- __ Dark Surface (S7) (**LRR K, L, M**)
- __ Polyvalue Below Surface (S8) (**LRR K, L**)
- __ Thin Dark Surface (S9) (**LRR K, L**)
- __ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- __ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- __ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- __ Red Parent Material (F21)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: NONE

Depth (inches): —

Hydric Soil Present? Yes X No ____

Remarks:

Wetland C= BOG; Histisol; QUAKING substrate

Note) Soils OBSERVED IN Wetland C ARE typical to Togus Series.

WETLAND C - UPL.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region 5/15/19

Project/Site: USCG - Perry City/County: WASHINGTON Sampling Date: ~~TR-WLC~~-upl
Applicant/Owner: USCG State: ME Sampling Point: TR-WLC-upl
Investigator(s): Charles Lyman Section, Township, Range: ______
Landform (hillslope, terrace, etc.): Hillslope - Local relief (concave, convex, none): CONVEX Slope (%): 5-8%
Subregion (LRR or MLRA): 144B Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: LAMOINE-RAWSONVILLE-SCANTIC NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No X	Depth (inches):	
Water Table Present?	Yes X No ____	Depth (inches): 16"	
Saturation Present? (includes capillary fringe)	Yes X No ____	Depth (inches): 16"	**Wetland Hydrology Present?** Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NONE

Remarks:

WETLAND C -UPL

VEGETATION – Use scientific names of plants.

Sampling Point: TP-WLC-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir	40%	Yes	
2. White Birch	15%		
3. N. White Cedar	5%		
4. Red Spruce	5%		
5.			
6.			
7.			
	65% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir (sap)	10%	Yes	
2. Red Spruce (sap)	10%	Yes	
3.			
4.			
5.			
6.			
7.			
	20% = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Bracken fern	25%	Yes	
2. Bunchberry	10%		
3. Starflower	10%		
4. Lily of the Valley	10%		
5. Sphagnum.	60%	—	NI
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55% = Total Cover		

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ______ (A)

Total Number of Dominant Species Across All Strata: ______ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ______ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland C - upl

SOIL

Sampling Point: TP-WLC-upl

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

	Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
O	1-2	—							
A	0-1	Dark Brown						Sandy Loam	
E	1-3	Lt Grey						↓	
Bw1	3-6	Redish Brown						↓	
Bw2	6-16"	Olive Brown		Redish Brown	20	C	M	Gravelly Sandy Loam	
	17- Limit of Refusal - BR Likely								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: BR

Depth (inches): 17

Hydric Soil Present? Yes ___ No X

Remarks:

Appendix D-2
Cultural and Historic Resources Report

GRAY & PAPE
HERITAGE MANAGEMENT

CUI//CEII//PRIV - CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE

Preliminary Cultural Resources Study United States Coast Guard Station Eastport Housing Project, Perry, Washington County, Maine

Prepared for:

Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
Portland, Maine 04101

Prepared by:

Gray & Pape
60 Valley Street
Suite 103
Providence, Rhode Island 02909

19-68901.001

GRAY & PAPE
HERITAGE MANAGEMENT

Project No. 19-68901.001

Preliminary Cultural Resources Study
United States Coast Guard Station Eastport Housing Project, Perry, Washington County, Maine

Prepared for:
Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
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Contact: Raymond D. Pasquariello, RPA
Associate Project Manager

Prepared by:
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____
Nathan C. Scholl, M.A, RPA
Senior Principal Investigator

July 2, 2019

ABSTRACT

This report summarizes the results of a preliminary cultural resources investigation and sensitivity designation completed by Gray & Pape, Inc., of Providence, Rhode Island, of a 30-hectare (75-acre) property located at 576 Shore Road, in the Town of Perry, Maine. The purpose of the study is to assess the effects that plans of the United States Coast Guard to develop the property for personnel family housing for service members reporting to Station Eastport, Maine, may have on the human environment and historic resources in compliance with the National Environmental Policy Act and the National Historic Preservation Act. This study contains background environmental and literature information for the Project area and includes an initial reconnaissance of the property. The study develops a land-use history of the parcel and an archaeological sensitivity model for both pre-Contact Native American and post-Contact archaeological sites and identifies potentially interested parties.

In June 2018, Gray & Pape, Inc., conducted an initial pedestrian reconnaissance of the Project area. The parcel is located west of Shore Road at the intersection of Silver Springs Road and Mt. Auburn Road. The parcel is bounded to the west, north, and south by forested lots. The eastern part of the parcel contains several disused pastures and a grouping of late twentieth century structures. The wooded area of the parcel contains three streams, three wetlands, and one vernal pool complex. One historical scatter, an early twentieth-century trash dump, was identified during the reconnaissance.

Regional pre-Contact documentary evidence indicates that while Native American groups had a strong presence in the region around Passamaquoddy Bay, they may have only utilized the Project area for short periods to access the resources associated with the streams and wetlands it contains. Post-Contact period occupation of the project area likely began sometime in the early to mid-nineteenth century, after overland transportation and local road networks to the Project area were established. At least two historical occupations appear to have occurred within the site, likely relating to small family agricultural lifeways. Of small note is that one of the historical occupations was a Town Farm. No previously recorded archaeological sites or cultural resources were identified within the proposed Project area.

Gray & Pape, Inc., presents a sensitivity model, based on the data present within this report, for the possible location of both pre- and post-Contact archaeological sites. Gray & Pape, Inc., recommends a Phase IA archaeological reconnaissance survey be completed for the Project area to help revise the sensitivity models. Based on these results, additional Phase IB archaeological investigation may be warranted. Gray & Pape, Inc., finds no historical importance associated with any of the extant structures within the Project area and recommends no further work associated with these structures.

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1.0 INTRODUCTION

Gray & Pape, Inc. (Gray & Pape), was retained to conduct a preliminary cultural resources study for the proposed United States Coast Guard (USCG) site development in the Town of Perry, Washington County, Maine. The USCG has identified a need to recapitalize USCG personnel family housing for service members reporting to Station Eastport, Maine. As such, the 30-hectare (ha) (75-acre [ac]) property located at 576 Shore Road, Perry, Maine, was acquired by the USCG (Project area) (Figure 1-1 and 1-2). The USCG would like to develop this property using one of the following scenarios:

- Six (6) duplex housing units (12 units total), consisting of four (4) 3-bedroom units (8 units total), and two (2) 4-bedroom units (4 units total). Additionally, provide a 5,000 square foot (ft^2) maintenance building and a 2,000 ft^2 community building. Provide all associated roads, sidewalks, storm water controls, streetlights, utilities, and typical infrastructure to support this community (Appendix A).

OR

- Twelve (12) single-family units consisting of eight (8) 3-bedroom units, and four (4) 4-bedroom units. Provide a 5,000 ft^2 maintenance building and a 2,000 ft^2community building. Provide all associated roads, sidewalks, storm water controls, streetlights, utilities, and typical infrastructure to support this community. Three-bedroom units will be 2,300 gross $ft^2$and the four-bedroom units will be 2,500 gross ft^2 (Appendix A).

1.1 Regulatory Framework

Primary Regulatory Drivers

- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Archaeological Resources Protection Act
- Archaeological and Historic Preservation Act
- American Indian Religious Freedom Act
- Executive Order 13175
- Executive Order 13007

Cultural resources are historic and prehistoric properties, as defined by the National Historic Preservation Act (NHPA); cultural items, as defined by the Native American Graves Protection and Repatriation Act (NAGPRA); archaeological resources, as defined by the Archaeological Resources Protection Act (ARPA) and the Archaeological and Historic Preservation Act (AHPA); sacred sites, as defined by Executive Order (EO) 13007 (*Indian Sacred Sites*) to which access is afforded under the American Indian Religious Freedom Act (AIRFA); and collections and associated records, as defined by 36 C.F.R. § 79. They include sites, buildings, structures, or objects that may have significant archaeological and historical values, or properties that may play a significant traditional role in a community's history, beliefs, customs, and practices. Thus, cultural resources encompass a wide range of sites and buildings from prehistoric Native American campsites to military buildings constructed during the Cold War, as well as traditional cultural properties still used today.

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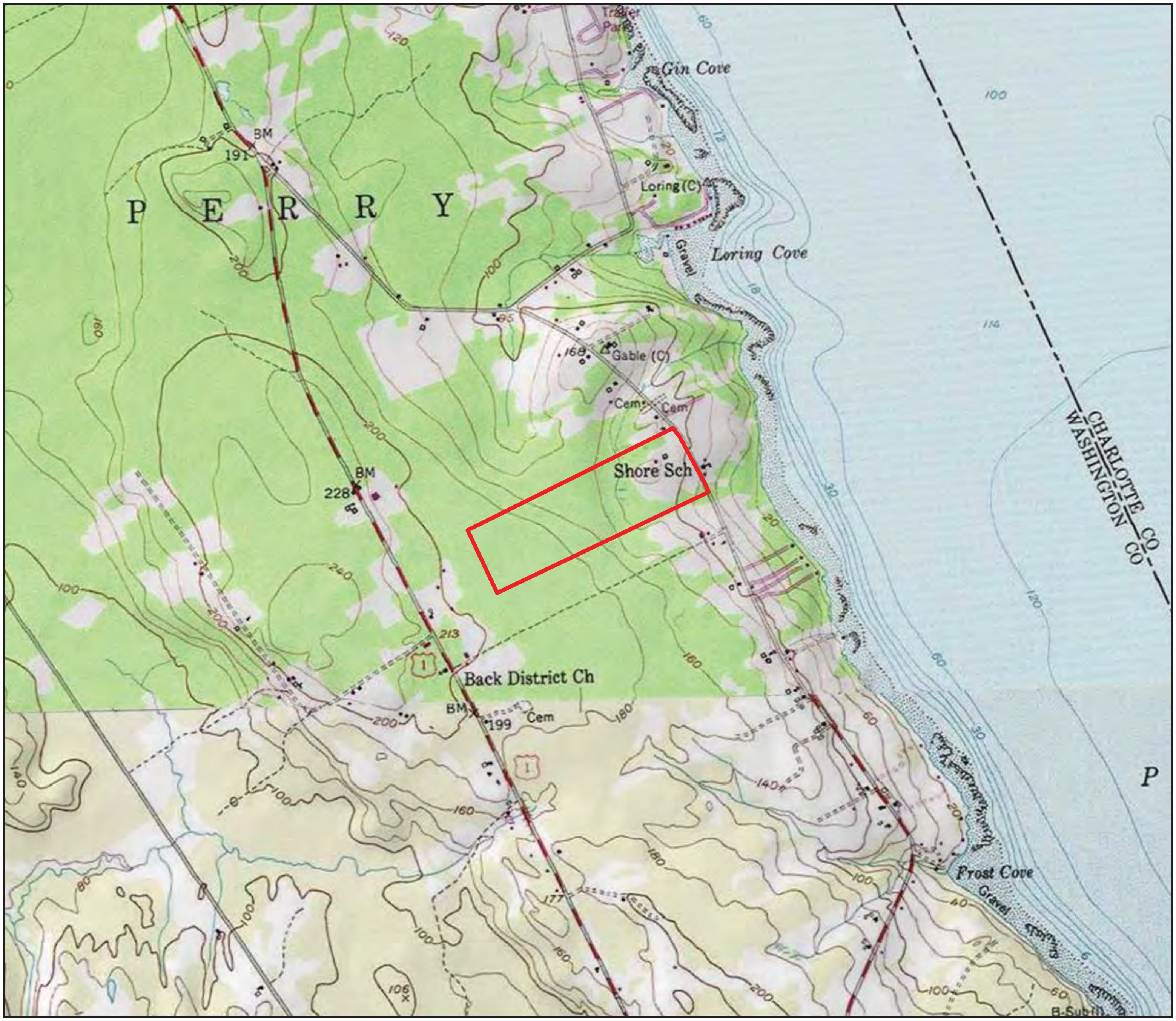

Location of the property proposed for development, Perry, Maine, on the Robbinston Quadrangle. (USGS 1949).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 1-1

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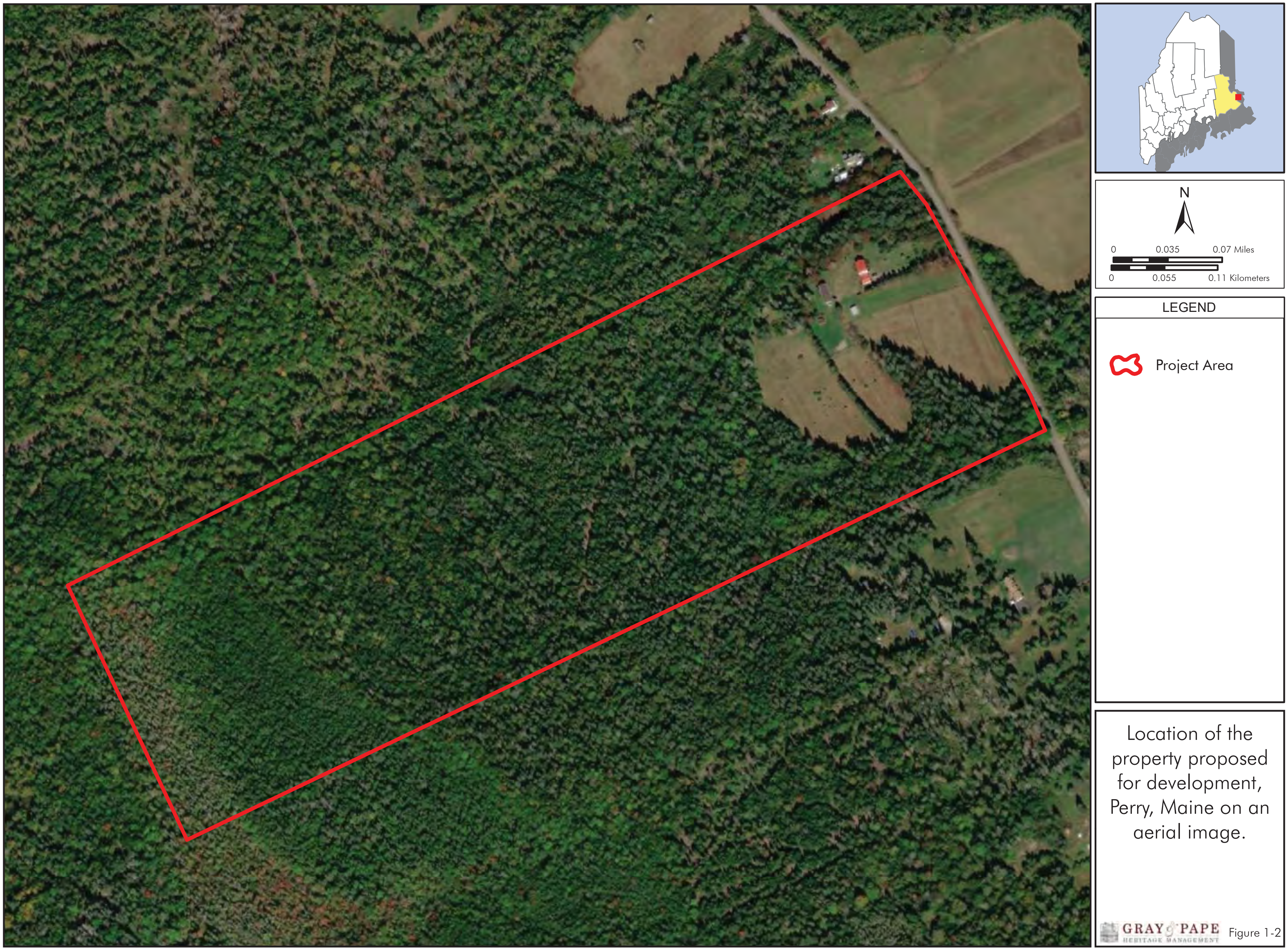

Location of the property proposed for development, Perry, Maine on an aerial image.

Figure 1-2

The principal federal law addressing cultural resources is the NHPA of 1966, as amended (54 U.S.C. § 300101.), and its implementing regulations (36 C.F.R. § 800). The regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties; assessing the effects of federal undertakings on historic properties; and consulting to avoid, reduce, or minimize adverse effects. An 'undertaking' is defined in 36 C.F.R. § 800.16(y) as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license, or approval. As part of the Section 106 process, federal agencies are required to consult with the State Historic Preservation Office (SHPO) and other stakeholders and seek input from the public.

The term 'historic properties' refers to cultural resources that meet specific criteria for eligibility for listing in the National Register of Historic Places (NRHP); historic properties need not be formally listed on the NRHP. Section 106 does not require the preservation of historic properties but ensures that the decisions of federal agencies concerning the treatment of these places result from meaningful considerations of cultural and historic values, and of the options available to protect the properties. However, federal agencies are required under the NHPA to consult with stakeholders and develop reasonable mitigation when their actions will adversely affect historic properties. The proposed acquisition and future development are a federal undertaking, as defined by 36 C.F.R. § 800.3 is the USCG is, therefore, required to comply with Section 106.

Executive Order 13175 (*Consultation and Coordination with Indian Tribal Governments*) and Presidential Memoranda for *Heads of Executive Departments and Agencies on Government-to-Government Relations with Native American Tribal Governments* (29 April 1994) establish guidelines to strengthen the United States government-to-government relationships with Native American tribes, and ensure consultation occurs with federally recognized tribes for proposed activities that could affect tribal resources or interests.

1.2 Authority

Gray & Pape conducts archaeological investigations in compliance with Federal and State legislation. All archaeological procedures comply with legislation and regulations concerning the impact to archaeological properties from federally funded or permitted activities. These include the NHPA of 1966, as amended in 1992 (54 U.S.C. § 300101); the National Environmental Policy Act of 1969 (NEPA) (PL 91-990, 42 U.S.C. § 4321); Executive Order 11593, 1971 (16 U.S.C. § 470); Procedures for the Protection of Historic and Cultural Properties (36 C.F.R. § 800); and the Archaeological and Historic Preservation Act of 1974 (PL 93 291). Professional archaeological work in Maine is regulated by two chapters in the Code of Maine Rules: Chapters 100 and 812 (Sections 089c100 and 089c812, respectively). Archaeological site records access procedures and standards are contained in Chapter 100. The composition and functions of the Archaeological Advisory Committee, the credential requirements for persons on the Commission's approved lists of archaeologists, procedure for review of credentials, procedure for removal from approved lists, and environmental impact project guidelines and procedures are contained in Chapter 812.

1.3 Project Description

The proposed property under consideration for development was recently acquired by the USCG. The USCG would like to develop this

[1] An ***undertaking*** is defined in 36 C.F.R. § 800.16(y) as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license or approval.

property for USCG personnel family housing for service members reporting to Station Eastport, Maine. The property is located at 576 Shore Road, Perry, Maine 04667 and consists of approximately 30.3 ha (75.0 ac). The property is listed as Lot 4 on Planning Map 13, in the Town of Perry, Maine. The parcel is bounded to the northeast by Shore Road. All other bounds of the parcel are the wooded areas of the surrounding parcels. The property contains above-ground resources that include a ca. 1968 house and barn, and a series of ca. 1970 outbuildings.

The property is currently predominately forested, with some open lands towards its eastern end, likely former agricultural fields located in a rural area of Washington, County, Maine. The topography is generally flat, with an overall slope to the east, towards the St. Croix River. Topographic imagery indicates the possible presence of a drainage near the southeast corner of the property, a possible ephemeral stream tributary to the St. Croix River.

1.4 Report Organization

This report is organized into five sections. Part one serves to introduce the purpose and background of the report. Section two briefly describes the methodology of the study. Part three describes the results of the research, while part four presents the findings of the field survey. The final section provides conclusions and recommendations.

1.5 Acknowledgements

The cultural resources study was conducted under the direction of Regional Manager, Patrick O'Bannon, Ph.D.; Senior Principal Investigator Kimberly M. Smith, M.A., RPA; and Principal Investigator Nathan C. Scholl, M.A., RPA. The project mapping was completed by Kimberly M. Smith. Sarah E. Holland, Ph.D. edited the report and oversaw its production.

2.0 ENVIRONMETAL CONTEXT

2.1 Physiography

The Project area lies within the northeastern part of the continent that was glaciated during the last period of ice age. As such, much of its current physiography, hydrology, soils, and floral and faunal regimes was influenced by the actions of the glaciers and their modifications to the landscape. The following discussion of the environmental context will focus on the glacial and postglacial history of the region in which the Project area is located.

Physiography refers to the topographic expression of the surface of the landscape. Fenneman (1938) divided much of the eastern United States into physiographic provinces, broad areas of the country characterized by similar overall physiography. The Project area falls within the New England Physiographic Province, which is made up of five subdivisions, or sections. The Project area is located within the Seaboard Lowland section, the sloping margin of the uplands that includes areas that were inundated by the ocean or large proglacial lakes during the last glacial retreat. Biophysical regions are differentiated by the general nature of soils, landscapes, geology, native vegetation, climate, and land use. Within the state of Maine, the Project area can be found within the East Coast biophysical region, which is characterized by low ridges surrounded by poorly drained, relatively flat terrain, with elevations between 30 meters (m) (98.4 feet [ft])and 305 m (1,000.6 ft). Bedrock is predominantly igneous, with occasional outcrops of metavolcanic rocks (McMahon 1990).

While glaciers are responsible for much of the modern physiography on the Project area, the underlying bedrock geology (Figure 2-1) of the area also plays a significant role in its physiography. The Project area is primarily underlain by the basalt bedrock member of the Devonian-age Perry Formation. This bedrock type is surrounded, except to the east, by the sandstone member of the Devonian-aged Perry Formation, which is located within one kilometer (km) (0.6-miles [mi]) of the Project area (United States Geologic Survey [USGS] 2019).

During the last ice age, which occurred in the Pleistocene Epoch (1.6 million–10,000 years ago), the entire state of Maine was covered by ice up to 1.6 km (1.0 mi) thick, originating from the Laurentide ice sheet. The last glacial advance of the Pleistocene was called the Wisconsin stage, and it is this stage that is responsible for the majority of the landscape features present today in Maine. The Wisconsin stage ice sheet began its retreat around 22,000 years ago, and had begun to expose the land that would become Maine by around 14,500 years ago. By approximately 10,500 years, the glacial ice had completely retreated from Maine (Borns et. al. 2004). The timing of this retreat is transgressive across the continent and possibly within New England. In addition, the retreat of the ice sheet was not a uniform march to the north; many regressive pulses to the south were experienced during this period. Within Maine, glacial ice may have remained in the northern highlands of the state through, or advanced during, the Younger Dryas Chronozone (an approximately 1,000–year period of a return to near glacial climatic conditions), between 11,000 and 10,000 Before Present (B.P.) (Borns et al. 2004).

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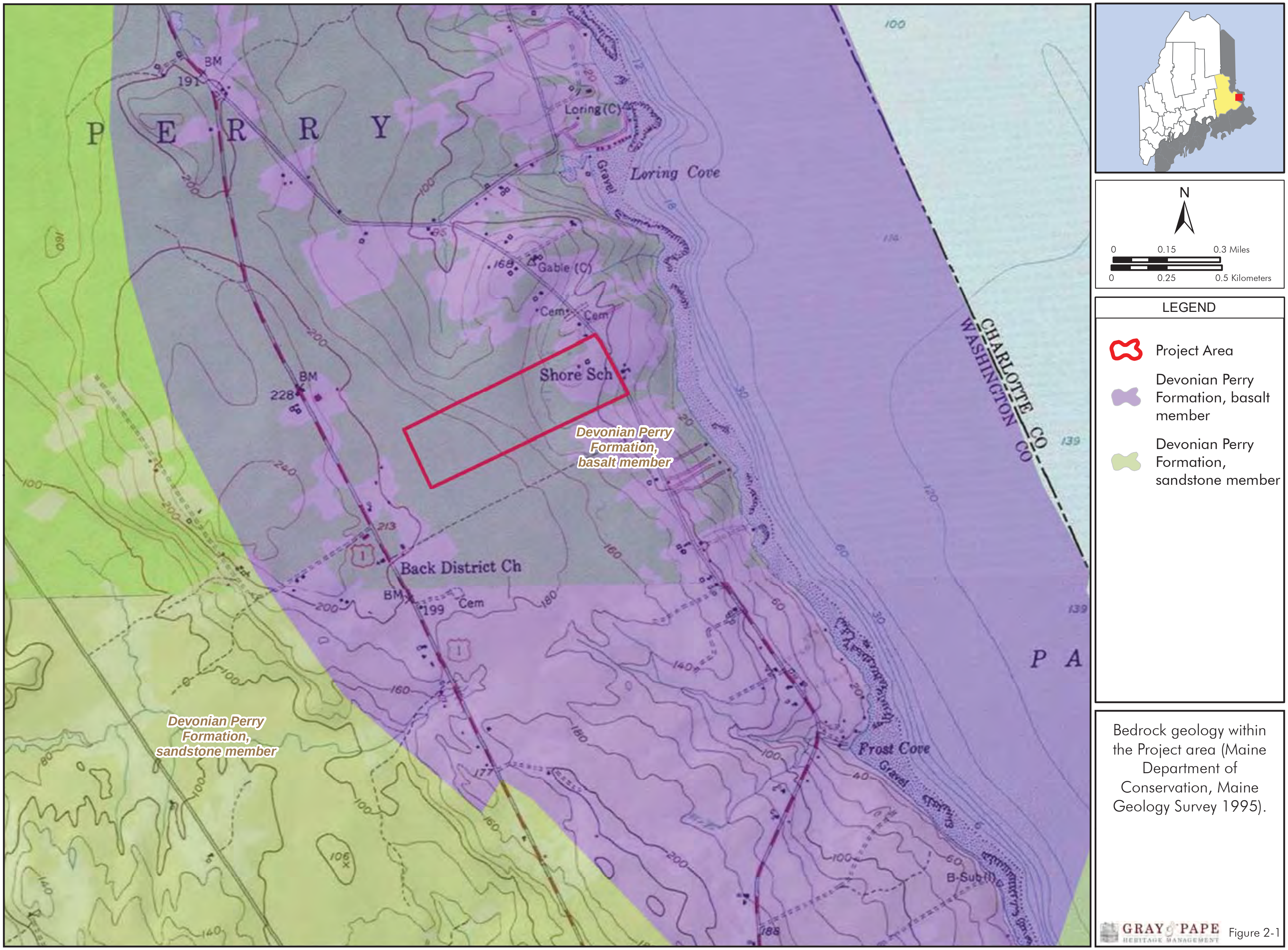

Bedrock geology within the Project area (Maine Department of Conservation, Maine Geology Survey 1995).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 2-1

During the retreat, the coast of Maine was subsequently submerged by marine waters up to 175 km (108 mi) inland along some of the major river valleys (Borns et al. 2004). The extreme pressure from the weight of the glacial ice caused the continental crust to be depressed along the coast of Maine, and the rapidity of the ice melting and subsequent sea level rise flooded this area before the crust was able to rebound. Sea level rise caught up to the glacial ice approximately at the state's coast and floated the glacial ice in that location, allowing sea waters to flood in under the glaciers. Glaciers then deposited their meltwater sediments into a marine environment, forming a near ubiquitous deposit that is recognized today as the Presumpscot Formation. This period of marine submergence lasted from approximately 13,500 to 12,500 B.P., by the end of which the crust had rebounded above sea level and continued to rise until it was about 45.7 m (149.9 ft) above sea level. As glacial ice continued to melt, sea level would reach its modern level around 2000 B.P. (Caldwell 1998). The Project area is contained within the limits of this marine submergence.

2.2 Surface Geology

The ice- and seawater-free landscape that developed was blanketed by glacial deposits, primarily glacial till, or glacial marine sediments. Till is an unsorted deposit of sediment ranging from fine clays and silts to boulders. In areas where glacial meltwaters deposited sediments within lakes or the sea, the sediments are typically better sorted deposits, known as outwash. Till is usually found as ground or end moraines, while outwash-derived landforms can be deltas, eskers, and stream or lake basins (Caldwell 1998). Modern stream channels began to form, mostly occupying meltwater channels or preglacial channels. Water and wind would begin moving the glacial sediments and redepositing them as Holocene-aged alluvium and dune deposits.

Figure 2-2, based on the map by Borns (1974), details the surficial geology of the Project area and its immediate surroundings. The Project area is characterized as primarily glacial till, which can be up to 300 m (984.2 ft) in thickness in localized areas (Borns 1974). The till mapped in the area consists of basal till, which is compact and fine grained, or ablation till, which is loose and sandy. The till here often directl overlies bedrock and the northeastern section of the Project area is demarked as exhibiting bedrock exposure at the ground surface (hatch markings on map in Figure 2-2). Soils mapped within the Project area (see Section 2.3 below) indicate the till in the Project area is predominately of the ablation till variety. While glaciomarine deposits of the Presumpscot Formation are not mapped within the Project area, they can be found within 1.5 km (0.9 mi) of the Project area. These glaciomarine deposits appear to be located predominately in the larger drainage valleys, coastal coves, or coastal lowlands.

2.3 Soil

The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey was utilized to obtain data on soils within the APE. The Web Soil Survey defines soil types and their characteristics, based on decades of soil data collection by the USDA (USDA-NRCS 2019). Soil types within the Project area were identified and mapped to help identify areas in which archaeological sites are likely to be found and preserved.

Soils within the Project area are relatively flat, with slopes of zero to eight percent. These soils began forming directly after the glacial retreat. Up to five soil series (Figure 2-3; Table 2-1), representing multiple soil map units, can be found within, or near, the Project area (USDA-NRCS 2019). The Creasey, Hogback, Naskeag, and Rawsonville soil series, a spodosol, is a soil type found typically in environments dominated by acidic soils caused by millennia of pine tree growth. As such, these soils are generally stable and likely been forming relatively undisturbed since the retreat

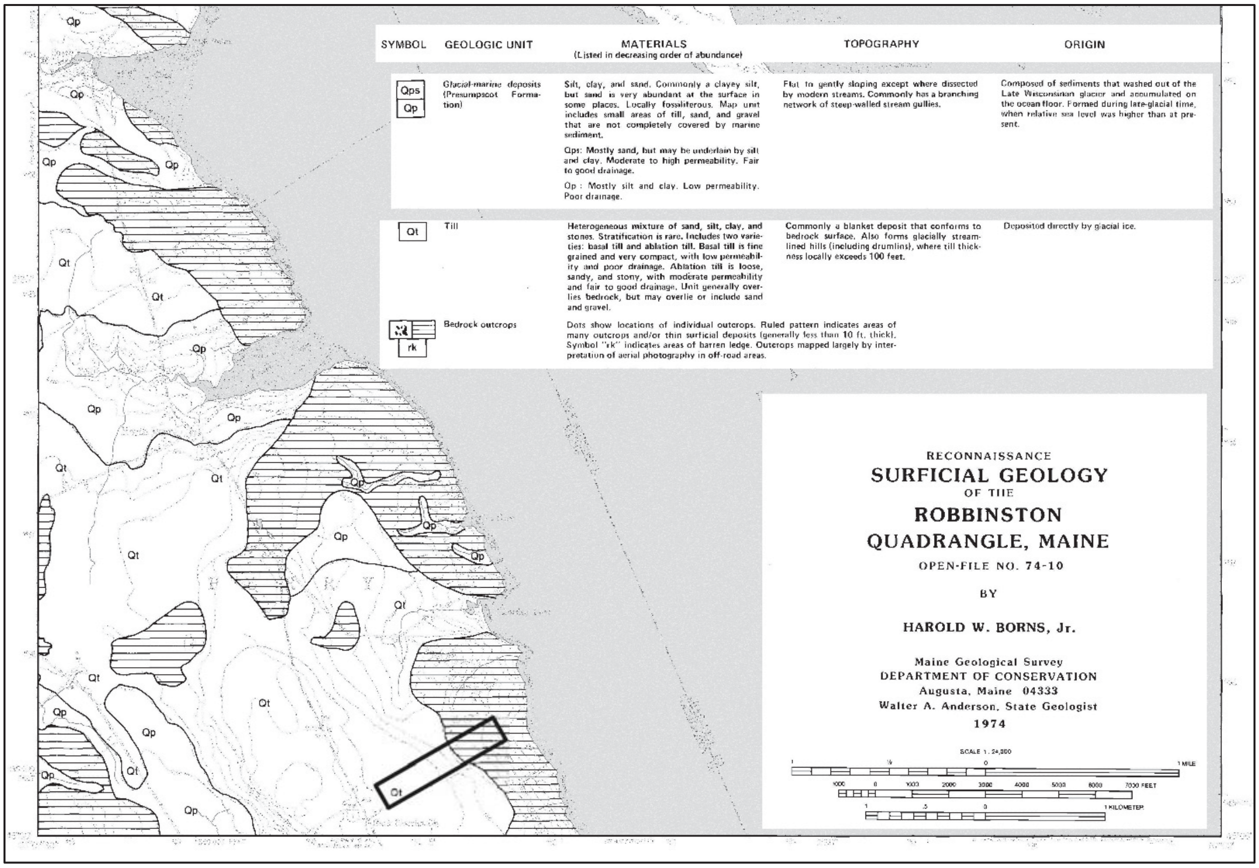

Figure 2-2. Surficial geology within the Project area (modified from Borns 1974). Black rectangular box indicates project location.

t of the last glacier. Lamoine and Scantic series soils are inceptisols, which are moderately to minimally weathered soils, indicating they have been stable for a relatively short time.

The Creasey, Hogback, Naskeag, and Rawsonville soils are best characterized as thin glacial till form over, and possible from, the local bedrock. Soil profile description indicate that the bedrock can be found within 0.50 to 1.0 m (1.6 to 3.2 ft) of the ground surface. Given the formation time of spodic soils like these, this could be evidence that this soil has been forming since the retreat of the glacial ice, in the late Pleistocene to early Holocene, and is likely to have received little sedimentation since that time. These soils may make up as much as 50 percent of the Project area.

Soils such as Lamoine and Scantic are late Pleistocene- to early Holocene-aged glacial lake or glacial marine deposits. These soils are thicker than the others in the Project area and do not appear to exhibit bedrock within or near to 1.0 m (3.2 ft) of the ground surface. The apparent lack of pedogenesis seen in these inceptsol soils is likely less of a function of the age of the deposits these soils formed in and more that of the types of sediments or environmental conductions. It may be that these soils were inundated or in a wetland-like environment until anthropogenic landscape alteration made in the historical period for agricultural land use.

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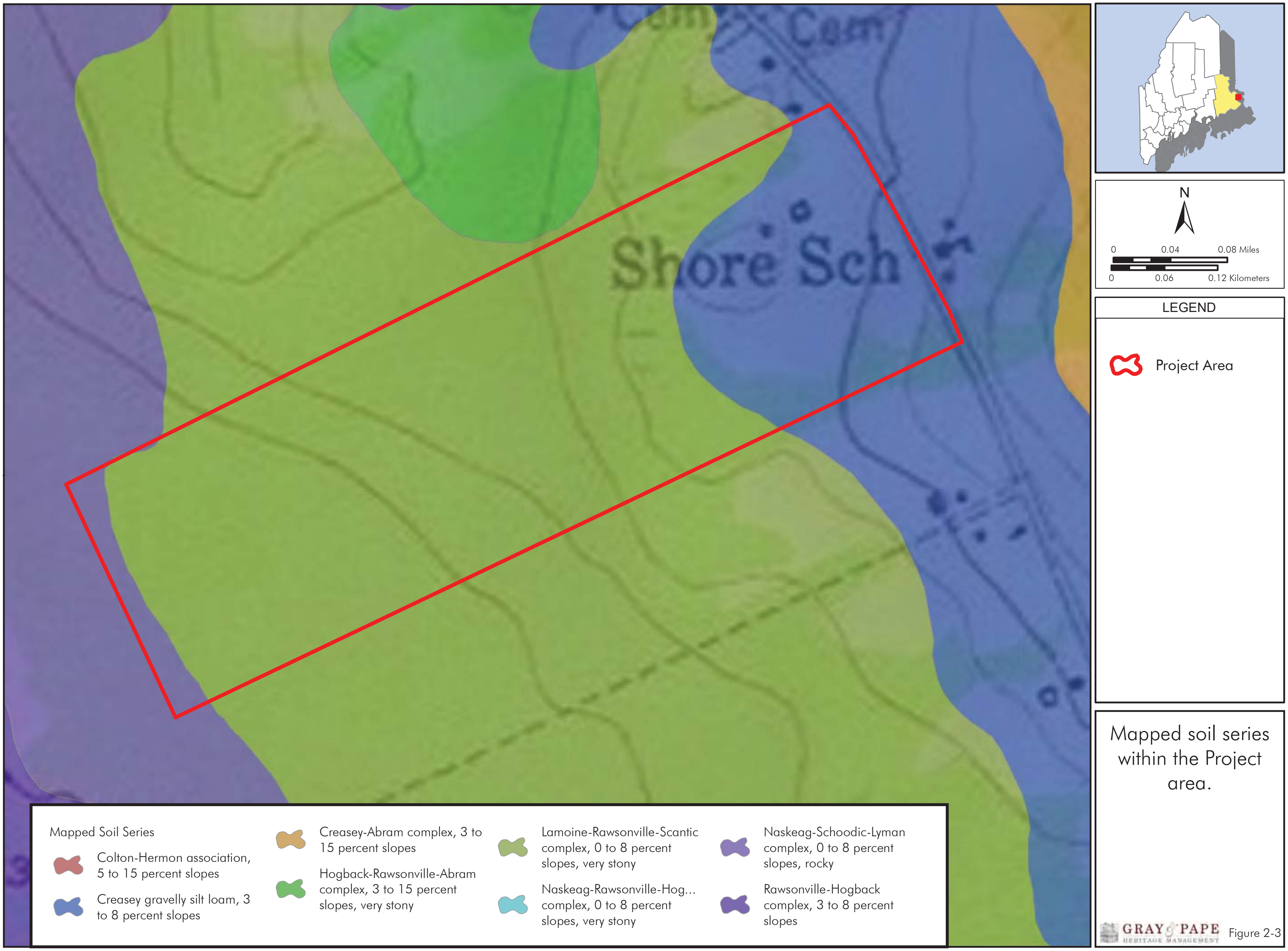

Table 2-1. Soil Series in the Project Area.

Map Unit Soil Series	Soil Order	Soil Texture	Drainage Description	Landscape Setting	Sediment Origins
Creasey	Spodosol	Gravelly silt loam	Somewhat excessively drained	Bedrock-controlled landforms	Glacial till; thin, over red sandstone or conglomerate
Hogback	Spodosol	Gravelly fine sandy loam	Well drained	Summits, shoulders and backslopes of mountains, ridges and hills	Glacial till
Lamoine	Inceptisol	Silt loam	Somewhat poorly drained	Coastal lowlands and river valleys	Glaciolacustrine or Glaciomarine
Naskeag	Spodosol	Fine sandy loam	Somewhat poorly drained and poorly drained	Depressions between shallow glaciated bedrock ridges oi coastal peninsulas and islands	Glacial till
Rawsonville	Spodosol	Very fine sandy loam	Well drained	Mountain tops, mountain side slopes, ridges, hill tops, and hill slopes	Glacial till
Scantic	Inceptisol	Silt loam	Poorly drained	Coastal lowlands and river valleys	Glaciolacustrine or Glaciomarine

2.4 Hydrology

Modern stream courses developed after the glacial retreat in new or previously formed drainage channels. The Project area falls within the Passamaquoddy Bay watershed. This watershed is part of the Eastern Coastal Rivers watershed, with the St. Croix as the largest freshwater flow into the bay. Passamaquoddy Bay drains into the Bay of Fundy. Within the Project area, recent wetlands mapping by Wood indicates the presence of three streams (one man-made), three wetlands, and one vernal pool complex. The streams are all first or second order in size and all drain to the east into Passamaquoddy Bay.

2.5 Climate, Flora, and Fauna

Near the end of the Pleistocene, between approximately 14,500 and 14,000 B.P., a sharp warming trend occurred, which was followed by a cooler period that lasted into the early part of the Holocene. The tundral vegetation regime that followed the retreat of the glaciers was soon replaced by a mixed conifer and northern hardwoods type regime (Delcourt and Delcourt 1981, 1984, 2004), mainly white pine (Grimm and Jacobson 2004). After about 10,000 B.P., warming trends began again and lasted until approximately 6000 B.P., when an essentially modern climate was established. Vegetation in the region assumed the modern mix of oak-hickory and spruce-fir forests seen up to modern times (Delcourt and Delcourt 1981, 1984, 2004; Grimm and Jacobson 2004). The modern floral community of the Project area could be characterized as a spruce-pine woodland. These forest types contain canopy trees that include balsam fir, black spruce, northern white cedar, paper birch, red spruce, white pine, and white spruce. Sapling and shrub undergrowth can include bayberry, shadbush, wild raisin, black huckleberry, lowbush blueberry, and sheep laurel. Herb undergrowth can include bracken fern and bryoid undergrowth can include dicranum moss, red-stemmed moss, and reindeer lichen (Gawler and Cutko 2010). Wetland areas of the Project area may also be characterized as a spruce bog natural community. In these common forest bogs, canopy trees include balsam fir, black spruce, gray birch, red spruce, and white pine. Sapling and shrub undergrowth can include balsam fir, black spruce, larch, mountain holly, rhodora, sheep laurel, black huckleberry, Labrador tea, and velvet-leaf blueberry. Herb undergrowth can include balsam fir, black spruce, cinnamon fern, creeping snowberry, lowbush blueberry, and three-seeded sedge. Bryoid undergrowth can include dicranum moss, red-stemmed moss, reindeer lichen, and sphagnum mosses (Gawler and Cutko 2010).

Around 14,000 years ago, many North American megafauna were still extant in the region. Stag moose, giant beaver, mastodon, among many others, inhabited this fresh land, along with many of the smaller animals still extant today. By around 10,000 B.P., most of these megafauna were extinct, along with many smaller animals, none of whom were equipped to evolve in a suddenly ice-free environment. Some migrated north, like the caribou herds, following the retreating ice and tundra environments. Predatorial species, such as black bear, wolf, coyote, and mountain lion, would take the top spots on the food chain as they moved into this newly re-exposed landscape. Moose, deer, turkey, opossum, snakes, and rabbits inhabited the woodlands and fields. Lakes and streams were occupied by beavers, otters, turtles, ducks, geese, loons, and salmon, among many others. Little change would be seen in the types of birds, fish, and animals present, even with the presence of Native American groups, until the arrival of historical settlers, who would have a profound impact on the environment and the creatures who inhabited it.

The contemporary climate of the study area is similar to that reported by its first Euroamerican settlers. The climate is classified as temperate-continental, with a significant temperature range among the seasons and moderate rainfall. The average summer temperature is 20 degrees Celsius (°C) (68 degrees Fahrenheit (°F), and the average winter temperature is -7°C (19.4°F) (National Oceanic and Atmospheric Administration [NOAA] 2000a). Terrain and plant cover affect local climatic conditions, creating microclimates. This is particularly true in areas of considerable topographic variation. While the prevailing winds blow ordinarily from the south and west, in the winter they blow frequently from the north. The annual rainfall is about 109 centimeters (cm) (42.9 inches [in]) (NOAA 2000b).

3.0 METHODOLOGY

The desktop analysis is meant to identify documented archaeological sites and architectural resources within the Project area. Identifying the presence of known resources and the extent of previous surveys and investigations provides the USCG and review agencies with information regarding the presence of previously recorded sites, including those listed in the NRHP and State Register of Historic Places, within or adjacent to the Project area. The scope of the project was limited to previous research and existing databases. Based on the assessment, recommendations as to the impact of the project are made.

3.1 Background Research

The analysis included a review of the files maintained by the Maine State Historic Preservation Commission (MHPC) in May and June 2019 for both previously documented architectural and historical resources and archaeological resources. The MHPC maintains a record of all known archaeological sites, including both Native American and historical period sites, as well as burial sites, and architectural records. The MHPC also maintains a database of previous cultural surveys.

Specifically, a file search was undertaken at MHPC and via the online Cultural & Architectural Resource Management Archive (CARMA) maintained by the Maine Department of Transportation (MDOT) to determine if previously surveyed architectural or historical resources were within a 0.8-km (0.5-mi) radius of the site at 576 Shore Road. The file search undertaken at MHPC to determine if previously surveyed archaeological resources were present was constrained to a 1-km (0.6-mi) radius of the Project area. Copies were made of all forms documenting previously identified architectural, historical, and archaeological resources.

Architectural resources located within sight of the property were identified and reviewed within the MHPC records. The NRHP files were also checked for the Town of Perry, to identify any NRHP-listed or -eligible properties located in, or near, the proposed location. Locational information from the files was crosschecked against MHPC documentation.

Primary sources of information included historical maps and the Perry, Maine, tax assessor valuations records. No historical Sanborn maps exist for the Project area. The historical data was utilized to produce a land-use history of the property as located in Section 4.6 below.

3.2 Reconnaissance Survey

A field reconnaissance level architectural survey was conducted in June 2019 to assess the condition and NRHP eligibility of the Project area, as well as to photo document the extant structures. A concurrent archaeological reconnaissance survey was also conducted over the Project area to identify initial areas of archaeological sensitivity. This reconnaissance consisted solely of a single-person walkover of the Project area, allowing for the identification of wetlands and surface soils. The reconnaissance was not completed using a systematic walkover spacing. It was utilized to take generalized view photographs of the Project area and structures therein. The locations of photographs, as well as wetlands and trash dumps identified, were give global positioning system (GPS) points using an EOS Arrow 100 sub-foot GNSS antenna in conjunction with ArcGIS Collector.

4.0 LITERATURE REVIEW RESULTS

4.1 Stakeholders

The project scope of work requested the identification of potentially interested parties in the property proposed for development by the USCG. Four potential stakeholders have been identified, consisting of federally recognized Native American tribal entities. The contact information for these Tribes is in Table 4-1. This list makes no guarantee that the enumerated groups will participate in consultation, but rather serves as a list of potentially interested parties.

4.2 Previous Surveys

Based on data from the MHPC records, the Project area has never been part of any previous cultural resources study. The closest previous study to the Project area was conducted approximately 6.4 km (4 mi) to the north in the Town of Robbinston. A Phase I pre-contact archaeological investigation was conducted in 2006 (Clark et al 2006) for a liquified natural gas import terminal. The project consisted of a 47-acre terminal and a 31-mile pipeline. From these 14 testing areas were chosen for archaeological survey, as the highest probability areas for location pre-contact Native American site. A total of 148 shovel test pits excavated and one previously unidentified Native American site (96.09) was identified. This site is located approximately 22 km to the northwest of the current Project area.

4.3 Native American Archaeological Sites

The MHPC records identify no previously recorded archaeological sites within 1.6 km (1 mi) of the current Project area. The closest site to the Project area, site 97.6, is located approximately 6.4 km (4 mi) to the north, in Mill Cove, in the Town of Robbinston. The site was identified by survey investigations of the Passamaquoddy Bay region undertaken by the Robert S. Peabody Foundation in the mid-twentieth century. Site has never been relocated or evaluated for NRHP eligibility (Clark et al 2006).

Table 4-1. Contact Information for Potential Stakeholders.

Group Name	Address	Point of Contact	Phone Number
Aroostook Band of Micmac	P O Box 772, 521-D Mani St. Presque Isle ME 04769	Jennifer Pictou THPO 7 Northern Road Presque Isle, ME 04769	207.764.1972, 207.764.7667
Houlton Band of Maliseet Indians	RR #3 Box 450 Houlton ME 04730-9514	Sharri Venno Environmental Planner/ Cultural Lead 88 Bell Road Littleton, ME 04730	207.532.4273, extension202
Passamaquoddy Tribe	Indian Township Reservation Post Office Box 301 Princeton ME 04668	Donald Soctomah THPO PO Box 159 Princeton, ME 04668	207.796.5533
Penobscot Nation	6 River Road, Indian Island Reservation Old Town ME 04468	Christopher Sockalexis THPO Cultural & Historic Preservation Department 12 Wabanaki Way Indian Island, ME 04468	207.817.7471

4.4 Historical Archaeological Sites

No previously recorded historical archaeological sites were identified proximate to the Project area.

4.5 Architectural Resources

No architectural resources previously documented by the MHPC or determined eligible for, or listed in, the NRHP are located within a 0.8-km (0.5-mi) radius of 576 Shore Point Road; however, Table 4-2 provides the list of all structures within a 0.8-km (0.5-mi) radius of the Project area.

4.6 Land-Use History

The Town of Perry, Maine, is in Washington County, near Latitude 45°, halfway between the equator and the North Pole. Perry is bounded by Passamaquoddy Bay to the east, the Town of Robbinston to the north, the Town of Pembroke on the west, and the Town of Eastport to the south. Perry is located within Washington County, the easternmost county of Maine. The county is predominately forested, but features large open blueberry barrens, and over twenty-five lakes. This rural county once included present-day Aroostook County until its separation in 1839 (Town of Eastport 2004).

Prior to European settlement, Native Americans of the Wabanaki Federation occupied the areas around Passamaquoddy Bay and Washington County. The current Passamaquoddy tribal members that today live on the Pleasant Point reservation in Perry are descendant from peoples who originally made their main village in the area of present-day St. Andrews, New Brunswick. Due to pressure from European settlement, those tribal people moved first to Indian Island in the Passamaquoddy Bay. During the War for Independence, the Passamaquoddy people of Indian Island declared themselves to be allied with the United States and, consequentially, were removed from Indian Island when the island became part of Canada after the war. Since 1794, Pleasant Point in Perry has been home to the Passamaquoddy reservation (Town of Perry 1968).

The Passamaquoddy native peoples practiced a lifestyle that focused on annual resource gathering and production. Tribal groups would move their settlements in response to the weather and availability of food. Areas along the coast or near streams and rivers were popular areas for large settlements due to the access to food and water transportation. The waterways were the transport systems of the regional native peoples throughout the history of their occupation of this landscape. The bay and rivers here provided good and consistent resources that allowed people to stay focused around them. Upland habitation was likely more limited to smaller groups with special resource collection goals, such as gathering nuts and berries or hunting (Maine Indian Program 1989). Archaeological evidence of these occupations is seen in the coastal shell middens that have been recorded at least as close by as Mill Cove in the Town of Robbinston (site 97.6) or at inland fishing locations, such as seen in the village of Meddybemps (site 96.2, the N'tolonapemk site) near the confluence of Denny's Stream and Meddybemps Lake (Clark et al. 2006). It was only after the pressures of European settlers, both in the form of introducing concepts such as individual family ownership of land (and not allowing for communal use of resources of the land) and the negative environmental impacts cause by the clearing of the lands for agricultural and industrial use, that the Passamaquoddy Bay tribal people were forced to abandon most of this traditional lifeway.

Table 4-2. Above-Ground Resources within 0.8-Kilometer (0.5-Mile) Radius of Project Area

Address	Date of Construction	National Register Status
31 Maynards Trailer Park	1940	Not Eligible
38 Kingsbury Road	1920	Not Eligible
442 Shore Road	1890	Not Eligible
456 Shore Road	1958	Not Eligible
457 Shore Road	1940	Not Eligible
491 Shore Road	1960	Not Eligible
524 Shore Road	1850	Not Eligible
576 Shore Road	1968	Not Eligible
594 Shore Road	1855	Not Eligible
602 Shore Road	1840	Not Eligible
632 Shore Road	1830	Not Eligible
647 Shore Road	1870	Not Eligible
658 Shore Road	1900	Not Eligible
665 Shore Road	1900	Not Eligible
712 Shore Road	1900	Not Eligible
750 Shore Road	1890	Not Eligible
Shore Road	1947	Not Eligible

In 1604, Samuel de Champlain and Sieur de Monts established the first European settlement north of St. Augustine, Florida, in Calais, Washington County, on St. Croix Island. This settlement failed after a harsh first winter, which claimed the lives of many of the colonists, with the colony removing itself to Nova Scotia. The island is located approximately 13 km (8 mi) north of the Project area; however, the colonists were known to have utilized the shoreline of what would become the United States, likely around the village of Red Beach. The island would again become important in the history of the nations of Canada and the United States after the War for Independence, as the location of the island helped determine the new international border. Of particular note in 1797, the historical identification of the island of St. Croix as the correct location of the French colony was determined through the first federally supported archaeological investigation (Donovan n.d.) utilized to accurately identify the ruins of the colony.

The first Euroamerican settler in the area of Perry was Captain John Frost, who settled at Pleasant Point in 1763, with the main aim of establishing a permanent trading center with the local Passamaquoddy Native American people and other regional Wabanaki tribes (Town of Perry 1968). Massachusetts purchased the area of the town as Plantation No. 1 between 1783 and 1784 (Varney 1886). The commonwealth also purchased 72.8 ha (180 ac.) of land, the majority of Pleasant Point, from Frost in 1794 to form a reservation for the Passamaquoddy people (Town of Perry 1968).

After the War of Independence, Euroamerican settlement in the town began in earnest and, by 1790, approximately 66 such settlers were living in the tow area. In 1818, the Town of Perry was incorporated, with a population that housed 57 eligible voters (Town of Perry 1968). Land bordering the Passamaquoddy Bay was disputed territory during the War of 1812, and the nearby Town of Eastport was occupied by the British from July 1814 to July 1818 (Town of Eastport 2004).

The Town of Perry has always maintained a rural character. The earliest industry of the town was lumbering, which was quite profitable until the old growth trees had been removed. When the high value lumber had been removed, smaller lumber-related industries began in the town. As early as 1830, the first sawmill was established, followed in the later part of the century by smaller milling for products, such as barrel staves and hoops, box wood, laths, singles, and railroad ties. These were mostly smaller family business, supplied by family tree lots. It was not until the advent of the paper mill industry in the region, in 1906, that lumbering again became a highly profitable industry (Town of Perry 1968).

After the initial lumbering boom, industry turned to agriculture and aquaculture as its main industries. While crops, such a potatoes and blueberries were important industries, early agriculture focused on sheep, cattle, and hay as the main products. Coastal fishing was focused on herring, which could be easily taken with weirs. Sardine canning plants were occasionally seen in the late ninetieth and twentieth centuries, but never developed into as strong an industry (Town of Perry 1968) as seen further to the south on the Maine coast.

Shipbuilding was a somewhat consistent industry within the town; however, the industry did not flourish as much of the local timber was sold for use abroad. Shipbuilding records indicate that less than one ship was built in the town per year in the period between 1824 and 1849, and it was not until 1869 that multiple ships were seen to be built in a single year over many consecutive years. This may be a reflection of the lack of local timber of sufficient size to support a shipbuilding industry after the initial logging off of the land, until the mid to late nineteenth century. The last ship built in the town was in 1891(Town of Perry 1968).

Perry did not have railroad access until 1896; prior to that, the main transportation for the town was by Passamaquoddy Bay or via a few turnpike or carriage roads (Town of Perry 1968). The arrival of the railroad allowed lumber to be delivered to Machiasport for the construction of ships.

The Project area parcel today consists of rural farmland, surrounded by woods on the west side of Shore Road. Above-ground resources on the parcel include a ca. 1968 house and barn, and a series of ca. 1970 outbuildings. To the east of Shore Road are additional agricultural field and woods which descend to Passamaquoddy Bay.

According to historical maps, minimal development has occurred in the Project area. The earliest map depicting detail of the Shore Road area (Figure 4-1) indicates it was somewhat thickly settled by 1861 (Walling 1861). The settlements here are predominately on the west side of Shore Road, perhaps indicating that the east side of the road was considered too topographically steep for convenient occupation. Also lacking is evidence of much settlement or industrial structures at the water's edge by Passamaquoddy Bay, again likely due to local topography making such industry impractical. Within the Project area, Figure 4-1 shows structures belonging to D. Golding and S. Welch are present, likely indicating the parcel was, at this time, two separate properties. Figure 4-1 also shows that by 1861 the infrastructure of the roads which are still in modern use today are already in place. A road or trail once connected Shore Road to (current) Route 1 located just to the south of the Project area, as seen on this map, but is no longer present as a modern road. Of small note is that a schoolhouse, the Shore Road School, is located across the street from the Project area. This school was in operation from at least 1847 to 1944 when it was consolidated (Town of Perry 1968).

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Project area as shown on the 1861 map of Washington County (Walling 1861).

Figure 4-2 depicts the Project area on an 1881 map (Colby 1881). Virtually no changes can be seen between this map and the one from 20 years earlier, with the exception of different property owner associated with structures along Shore Road. Within the Project area, at the time of this 1881 map, the structures are indicated as belonging to Mrs. Kelly and one that is a Town Farm. The Town Farm seen here is indication of the town either supporting a struggling family or that it had purchased the F. Walsh property to house families or individuals who could not support themselves. Town farms, or poor houses, were usually town-run institutions in which people of the community who were either too poor to care for themselves, or had a disability that made it hard for them to provide care for themselves, could be housed. Usually people on such town farms where able, or required, to farm the land they were housed on in turn for their housing. This kind of town run institutional care lasted from the early nineteenth to mid twentieth century.

Figure 4-3 depicts the Project area in 1929 as seen on the first USGS map of the Robbinston Quadrangle. The most notable aspect of this map in the marked decline in population along Shore Road, as indicated by a drastic reduction in mapped structures along the road. This map shows that the road connecting Shore Road to (current) Route 1 had already been downgraded to a trail or other secondary road at this time. This map gives the first indication of the topography of the region the Project area is located in, showing a relatively steep rise from Passamoquoddy Bay to about the location of Shore Road, the west side of which continues to rise more gently to a peak around 73 m (240 ft) above mean sea level (AMSL) before descending again towards Boydens Lake to the west. The Project area is shown here to lie across one or more toe slopes, dissected by somewhat ephemeral streams or dry drainages to the north and south. A colorized version of the 1929 USGS map, produced by the USGS in 1931 (Figure 4-4), indicated that the area around the Project area and Shore Road in general was much more cleared of wood lots than seen today, presumably indicative of a more agricultural landscape. The updated Robbinston USGS Quadrangle map of 1949 (Figure 4-5) shows that much of this open landscape had been allowed to return to forest lands by that time. Current aerial images (Figure 1-2) show that the agricultural land has continued to shrink and much of this land has reverted to forests. The 1947 map does indicate some renewed settlement in the area, this time close to the Passamaquoddy Bay shoreline, which is indicative of an influx of part-time vacation/leisure residences.

By the time of the 1929 USGS map (Figure 4-3), only one structure is shown as present on the Project area property. Its general orientation in the northeastern corner of the Project area indicates it is likely equivalent to the Golding/Kelly structure(s) location as depicted in the 1861 and 1881 maps (Figures 4-1 and 4-2). The modern extant structures within the Project area may be in an equivalent area to the historical structures; however, none of the extant structure show indication (architecturally or documentary) of being present/built before the late 1960s. No indication of the Welsh/Town Farm structure is seen on this or later maps. Town records indicate that the “poor farm”, likely this same Town Farm on the 1881 map, was voted to be sold in 1888 (Town of Perry 1968). It may be likely that the associated structure was razed or sold off at that time.

Deed research shows that the modern structures on the project parcel were likely constructed by Fritz Gutsmidt and John Kalning who purchased the land from John W. Henderson in 1949. In 1995, William P. Butler and Joan Harrington sold the property to David and Betsy Myers, who sold the property to the current owner Eleanor A. and Charles E. Senior Barstow in 1997.

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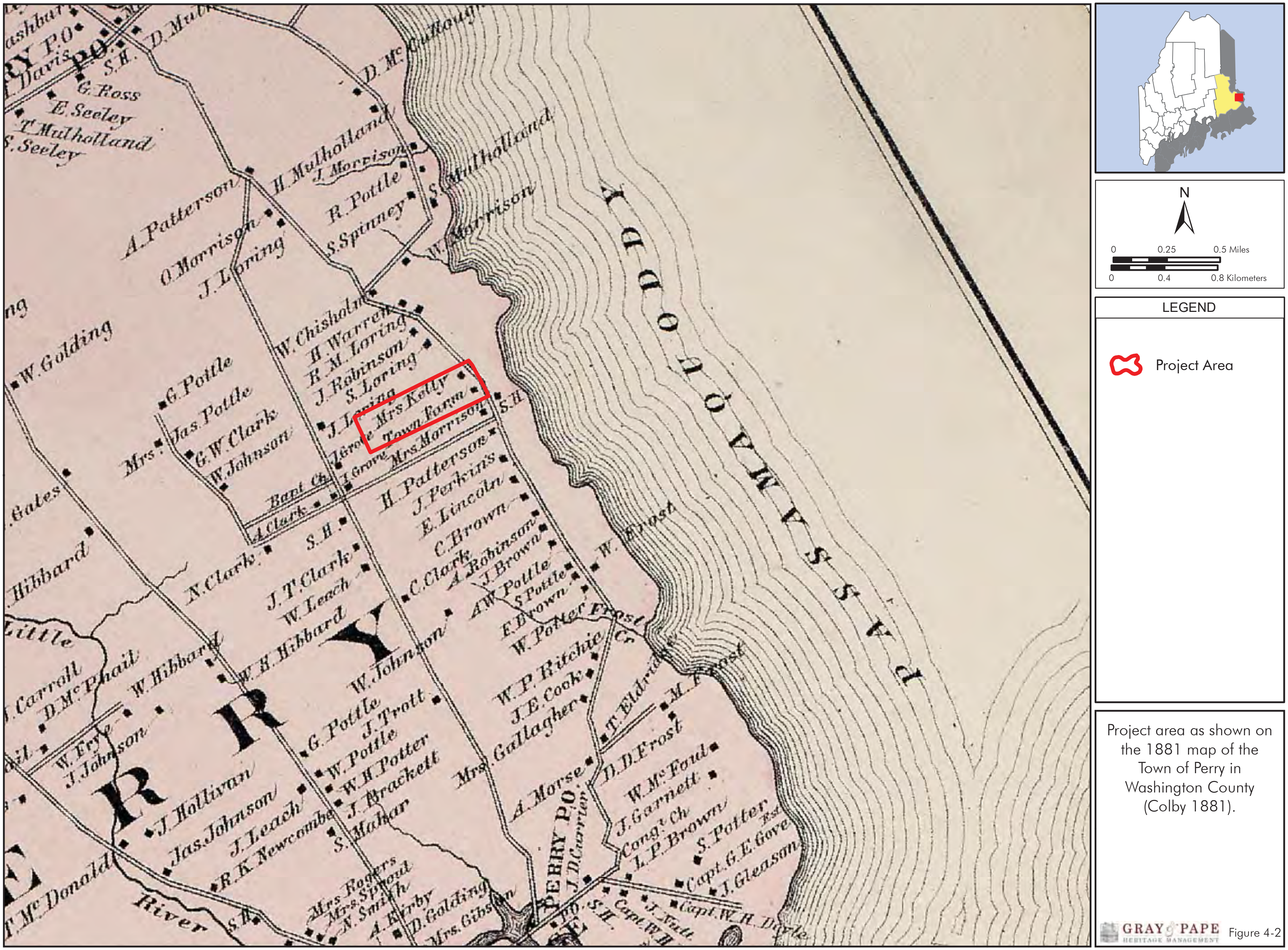

Project area as shown on the 1881 map of the Town of Perry in Washington County (Colby 1881).

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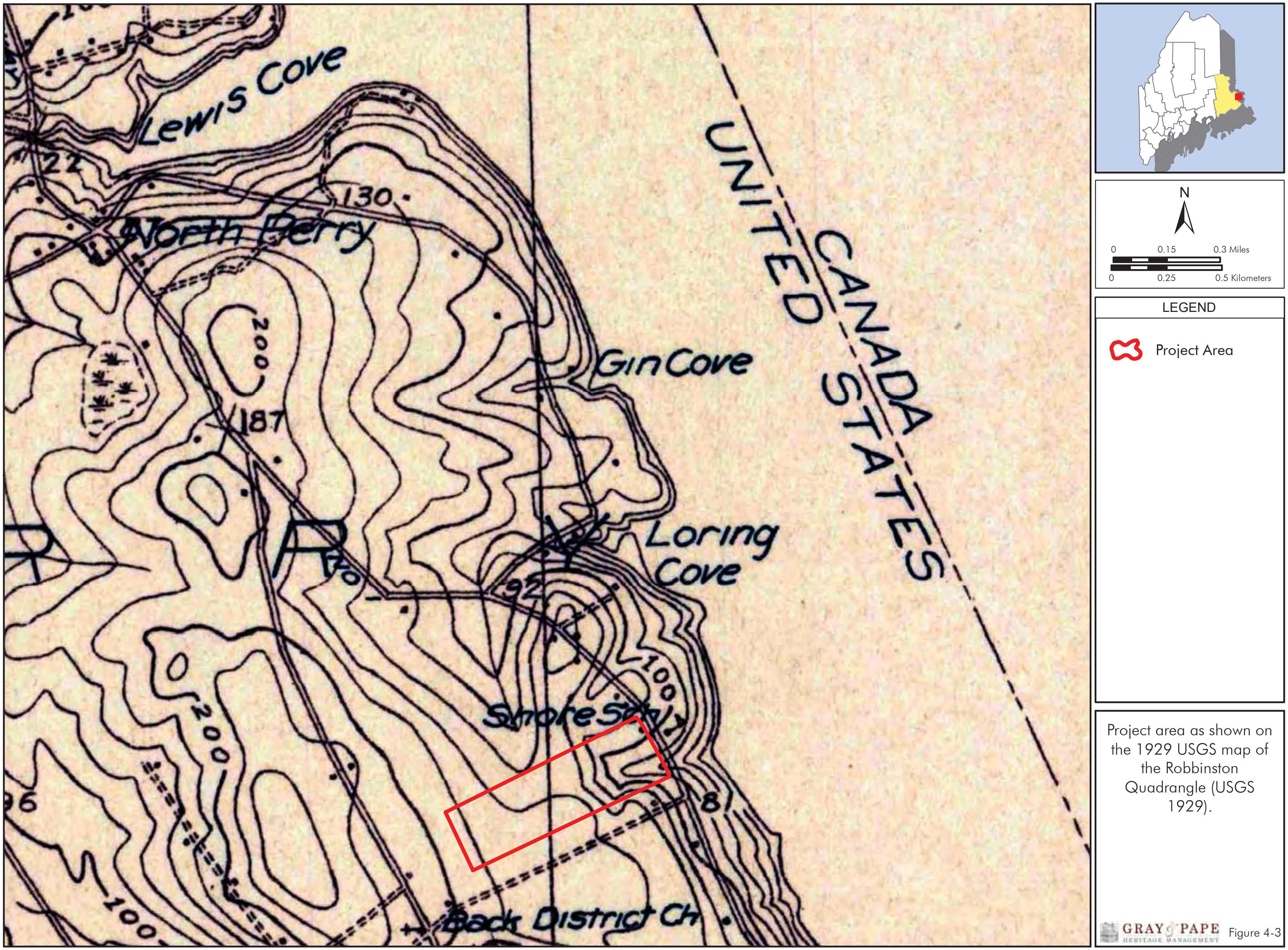

Project area as shown on the 1929 USGS map of the Robbinston Quadrangle (USGS 1929).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 4-3

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Project area as shown on the 1931 USGS map of the Robbinston Quadrangle (USGS 1931).

Figure 4-4

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Project area as shown on the 1949 USGS map of the Robbinston Quadrangle (USGS 1949).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 4-5

5.0 FIELD SURVEY RESULTS

A reconnaissance survey was conducted of the 576 Shore Road property in June 2019. The property was observed and photographed to provide an initial characterization of the landscape and potential cultural resource sensitivity, as well as the architectural characterization of the extant structures on the property.

5.1 Architectural Results

The house located at 576 Shore Road in Perry, Washington County, is a two-story, residential Ranch-style building constructed ca. 1968 (Figure 5-1). The two-story mass is attached its south façade to a one-story mass that connects to a two-bay garage. The building features a standing-seam metal side-gable roof, with a cross-gable roof on the one-story mass on the south façade. Exterior walls are clad in replacement vinyl siding and set atop a continuous concrete block foundation. The main entrance features sidelights, and is located on the east façade, flanked by two bow windows with decorative shutters. Remaining fenestration on the east façade includes eight-over-eight double-hung replacement windows, with decorative shutters, and a six-over-six double-hung replacement windows on the one-story mass adjacent to a secondary entrance. Fenestration on the west façade includes one-over-one, eight-over-eight, and six-over-six double-hung replacement windows, and a triple casement window with a metal awning. A fixed twelve mullioned picture window is located on the one-story mass next to a secondary entrance. Two one-over-one double-hung replacement windows with decorative shutters are on the east façade of the one-story mass. An attached two-bay garage is located on the south façade of the one-story mass. An exterior brick chimney is located on the ridgeline of the north façade and an interior brick chimney is located on the west slope of the side-gable roof between the one-story and two-story mass.

A barn, constructed ca. 1968, is located west of the main building (Figure 5-2). The barn features a gambrel roof clad in a combination of sheet metal and asphalt-shingles. Exterior walls are clad in wood shingles. A sliding wood door, a sliding replacement window and a hay window are located on the south façade. The north façade features a hay window. The east façade features an entrance, a double sliding door, and four bays of sliding windows.

Three modern outbuildings, constructed ca. 1970, are located southwest of the main building. A one-story wood framed shed featuring an asphalt-shingled side-gable roof is south of the historic barn. Exterior walls are clad in board-and-batten and the north façade features a wood sliding door and a picture window (Figure 5-3). A small metal pellet stove features a roll-up metal door on the west façade and a chimney pipe is offset north on the gabled roof (Figure 5-4). A metal shed is located south between the historic barn and the main building (Figure 5-5). The roof, and the east and west façades, are clad in standing-seam metal. The north and south façades are clad in board and batten. Three bays of two-over-two double-hung windows are located on the south façade. The north façade features a three-mullioned double door, offset west, and a wood sliding door, offset east. A chimney pipe is on the west slope of the roof.

5.2 Archaeological Reconnaissance Results

The Project area is bounded to the northeast by Shore Road and on all other borders by the wood lots of neighboring property. The Project area consists of small portion of open land or former agricultural fields and a house lot, with the majority of the property consisting of a large wood lot. The house lot area of the property contains the extant structures and is overgrown in places (Figure 5-7). The three former agriculture fields (pastures) are clustered on the northeast side of the property, here called Pasture 1 (Figure 5-8), Pasture 2 (Figure 5-9), and Pasture 3 (Figure 5-10). Pasture 1 is nearest to Shore Road, abutting it; Pasture 2 abuts the west side of Pasture 1, and Pasture 3 abuts the west side of Pasture 2. The pastures a separated by small tree lines, and all three are bounded on their northern side by the house lots.

The rest of the Project area, representing its majority, is wooded with moderate aged growth (predominantly less than 100 years of growth). The wooded areas appear undeveloped, except for old logging roads (Figure 5-11), giving evidence that the property was extensively logged in the past. The tree growth consists mainly of softwoods and has a moderately open undergrowth (Figure 5-12).

Figure 5-1. House at 576 Shore Road, view to the west.

Figure 5-2. Barn at 576 Shore Road, view to the southwest.

Figure 5-3. One-story wood-framed shed at 576 Shore Road, view to the north.


Figure 5-4. Small, metal pellet stove at 576 Shore Road, view to the south.


Figure 5-5. Metal shed at 576 Shore Road, view to the southeast.

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Plan map showing the location of the structures and pastures within the Project area.

Figure 5-6

Figure 5-7. House lot at 576 Shore Road, view to the southwest.

Figure 5-8. Pasture 1 area, view to the northwest.

Figure 5-9. Pasture 2 area, view to the southeast.

Figure 5-10. Pasture 3 area, view to the south.

Figure 5-11. Representative example of disused logging road, view to the southwest.

Figure 5-12. Representative view of wooded area, view to the west.

Within the wooded area are several first or second order streams and several wetlands. As defined by wetlands survey completed by Wood in May of 2019. Three streams (A, B, & C), three wetlands (A, B, & C), and one vernal pool complex were observed, as shown on Figure 5-9. These same wetland and stream areas were observed during the cultural reconnaissance (Figures 5-10 to 5-12). Both this and the wetland survey identify Stream A (and the pond it originates from) as man-made features. This was determined due to the presence of spoil piles of sediments on the banks of the stream (Figure 5-11). Wetlands observed consisted mainly of areas of mucky soil and wetland vegetation. The vernal pools described in the wetlands survey were not observed during the cultural reconnaissance.

A historical trash dump (Figures 5-13) was found inside the apex of the tree line that separates Pastures 1 and 2. This dump contained early to mid-twentieth century artifacts. Artifacts contained within this trash dump included domestic (bottles, ceramic, and metallic vessels, shoe leather) and specialized activity (oil and gas cans) artifacts. No apparent structural artifacts were seen within this trash dump, and no structural ruins were seen in association with this dump. The extant structures on the house lot area are the closest apparent historical occupation, at a distance of approximately 60 m (196.8 ft) to the north, for these artifacts to have originated. It is, therefore, assumed that the artifacts in this dump were associated with occupation taking place in the same general location of the current house lot. However, the age of the artifacts may indicate that they are associated with an occupation that occurred at that location which pre-dates the construction of the current house structure (ca. 1968). The artifacts appear to post-date any occupation that may have been associated with Walsh/Town Farm, the exact location of which is unclear.

No evidence of any archaeological sites was identified during the survey.

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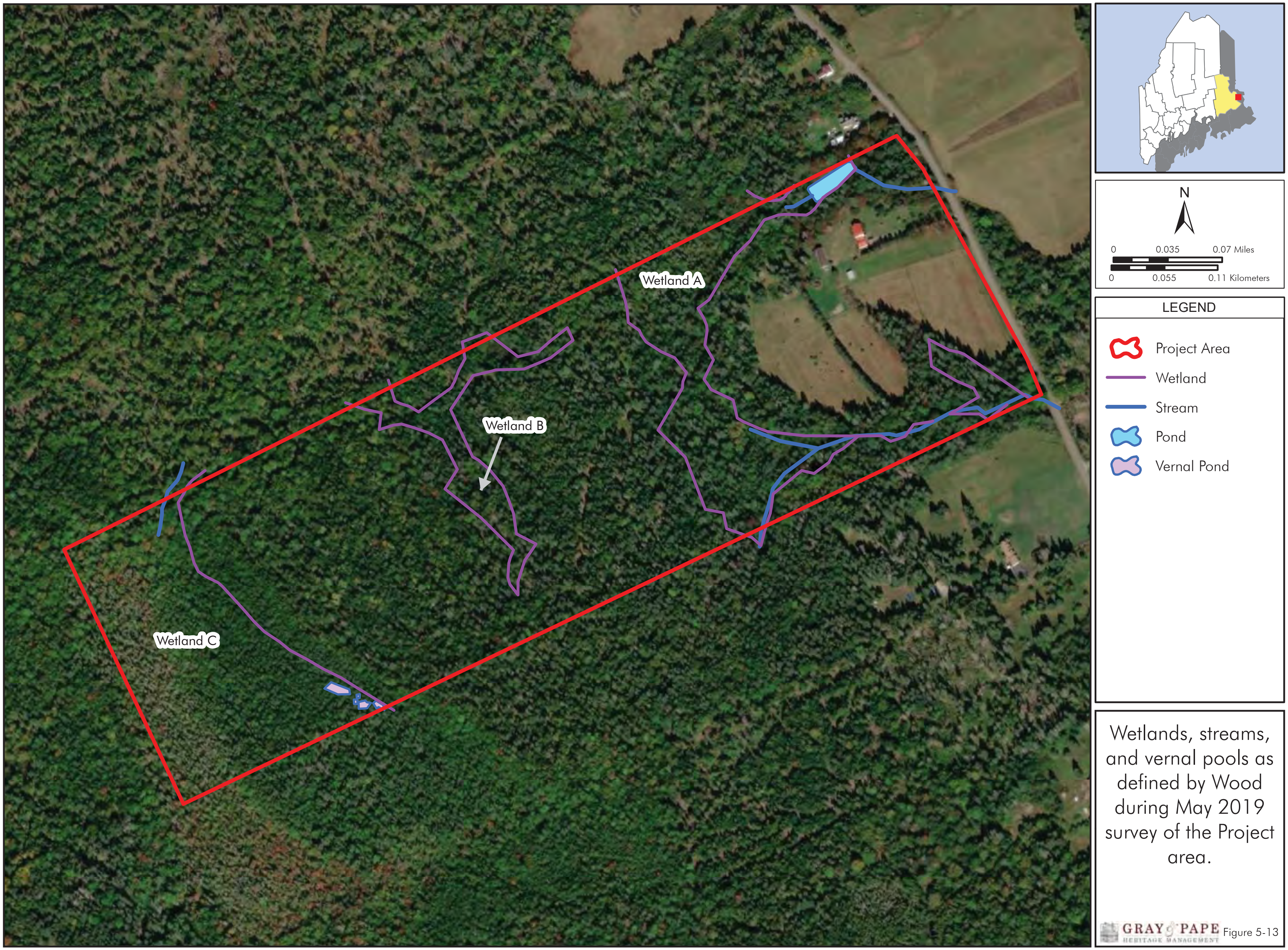

Wetlands, streams, and vernal pools as defined by Wood during May 2019 survey of the Project area.

Figure 5-13

Figure 5-14. Stream B, view to the south.

Figure 5-15. Stream A, view to the southwest. Opposite bank consists of a mounded spoil pile from the anthropogenic excavation and creation of this stream.

Figure 5-16. Representative view of Wetlands A, view to the northwest.

Figure 5-17. Representative artifacts found in the trash dump area within the Project area, view to the west.

6.0 CONCLUSIONS AND RECOMMENDATIONS

A preliminary cultural resources study was completed for the parcel located at 576 Shore Road in Perry, Maine for the potential development by the USCG for USCG personnel family housing for service members reporting to Station Eastport, Maine.

Research in local libraries and other repositories did not reveal the extant building located on the property to be associated with any significant events or persons. The building, therefore, is not eligible for inclusion in the NRHP under Criterion A or B. The resource is an undistinguished example of Ranch-style residential building. Furthermore, alterations to the building, including the use of replacement siding and windows, have compromised its integrity of design, workmanship, and materials. As a building that has lost historic integrity, the resource is not eligible for inclusion in the NRHP under Criterion C. Consequently, Gray & Pape recommends this resource as not eligible for inclusion in the NRHP.

Background research did not identify any known archaeological or historical archaeological resources associated with the 576 Shore Road property. Pre-Contact Native American presence in the Perry area was strong, especial leading up to the Contact period, but no background evidence was found to indicate a known Native American presence in the Project area. The Project area is in an upland landscape and is unlikely to contain larger pre-Contact sites as can be found closer to the shoreline of Passamaquoddy Bay. However, the presence of freshwater wetlands and streams could have attracted native peoples to the area to extract resources they may have possessed. Documentary evidence does show a post-Contact historical occupation within the Project area by at least the mid-nineteenth century. At least two separate historical occupations appear to have occurred within the Project area within the nineteenth to twentieth centuries. The current structures located in the Project area do not appear to relate directly to either of the historical occupations but may occupy the general location of at least one. No evidence of the other historical structure location, which may have housed a Town Farm, was directly observed during the field visit. A single historical scatter, a trash dump (Figure 6-1 and 5-13), was located during the field visit, which appears to be associated with an early to mid-twentieth century occupation predating the construction of the extant structures in the Project area.

Based on the soil data, the Project area is considered moderately well suited for the identification or preservation of archaeological sites. Typically, local uplands along permanent water sources only yield evidence of short-term occupation by pre-Contact period indigenous peoples. Post-Contact occupation of the region mainly follows major waterways, of which the St. Croix River is the closest (at a distance of between 300 and 1,300 m [984.2 and 4,265.0 ft]). The Project area is located at a flat area at the top of slight slope that runs down to east towards the St. Croix River, possibly making it a more attractive location for historical period occupation locations after initial settlement.

A preliminary cultural sensitivity assessment has been assigned to the Project area, separated by either pre-Contact or post-Contact period cultural sites, based on the results of the background literature review and the field reconnaissance visit. These sensitivity designations are shown in Figures 6-1 and 6-2. Previous archaeological investigations in the region and in the State of Maine indicate that pre-Contact Native American occupation sites are predominately associated proximal to water resources including seacoasts, streams, lakes, and wetlands. Proximity to water seems to be one of the single most important factors in locating these sites (Spiess 1994). Other factors

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Post-Contact archaeological sensitivity map of the Project area.

GRAY & PAPE HERITAGE MANAGEMENT Figure 6-1

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Pre-Contact archaeological sensitivity map of the Project area.

Figure 6-2

include the soil or sediment type and the grade of the landscape. Pre-Contact Native sites are often associated with well-drained soils and on landscapes with slopes of generally less than 8 percent. Similar to the correlation of pre-Contact sites to streams, a correlation exists between post-Contact sites and roads, railroads, and streams. Proximity to known pre- or post-Contact archaeological sites are also a potential factor in determining archaeological sensitivity. Based on this, these factors were used to create the archaeological sensitivity areas modeled in Figures 6-1 and 6-2.

High pre-Contact sensitivity areas are designated as:

- areas within 50 m (164 ft) of potential water sources, including active and seasonal stream and wetlands,
- with well-drained soils,
- with slopes of less than 8 percent,
- or within 50 m (164 ft) of a previously identified pre-Contact archaeological resource.

Low pre-Contact sensitivity probability areas are designated as:

- areas greater than 50 m (984 ft) from a water source,
- with poorly drained soils,
- with slopes of greater than 8 percent,
- and evidence of significant historical or modern disturbance areas.

High post-Contact sensitivity areas are designated as areas:

- within 200 m (656 ft) of a road or railroad or navigable stream,
- with slopes of less than 8 percent,
- or within 50 m (164 ft) of a previously identified post-Contact archaeological resource, structure, historical scatter.

Low post-Contact sensitivity areas are designated as areas:

- greater than 200 m (656 ft) from a water source or transportation route,
- with poorly drained soils,
- with slopes of greater than 8 percent,
- and evidence of significant modern disturbance.

Areas labeled as no sensitivity are those within delineated wetlands and contain standing groundwater.

Based on the combined environmental and background literature data, the Project area is considered moderately to well suited for the identification or preservation of archaeological sites. The Project area is located on a relatively flat and well-drained landscape, formed by glacial activity, at the top of a slight slope that runs east towards the Passamaquoddy Bay. Typically, uplands away from large water sources only yield evidence of short-term occupation by pre-Contact period Native American peoples regionally; the wetlands and streams may have attracted people to the Project area during the pre-Contact period, if only for short-term occupations. Post-Contact occupation of the region mainly follows major transportation routes, of which Passamaquoddy Bay is the closest. Historical map documents presented in Section 4 indicate that it is unlikely that historical occupations occurred in the Project area before Shore Road was established, sometime in the early to mid-nineteenth century. No documentary evidence was found of any historical activities occurring in the Project area beyond those relating to a nineteenth to twentieth century agricultural occupation of the land. Of some small note is the fact that one of the historical occupations was used by the Town of Perry as a Town Farm to house and care for poor or disabled town residents.

Gray & Pape recommends consultation with MHPC regarding the level of additional work, if needed. Gray & Pape's recommendations include additional reconnaissance survey with minimal shovel testing to identify the soils present within the Project area and to aid in better classifying the high- and low-sensitivity areas within the Project area. Depending on the results of the of the additional reconnaissance survey, additional archaeological shovel testing may be recommended.

A list of potential stakeholders is identified, who will be consulted regarding the property acquisition and potential development, is presented in Section 4.1.

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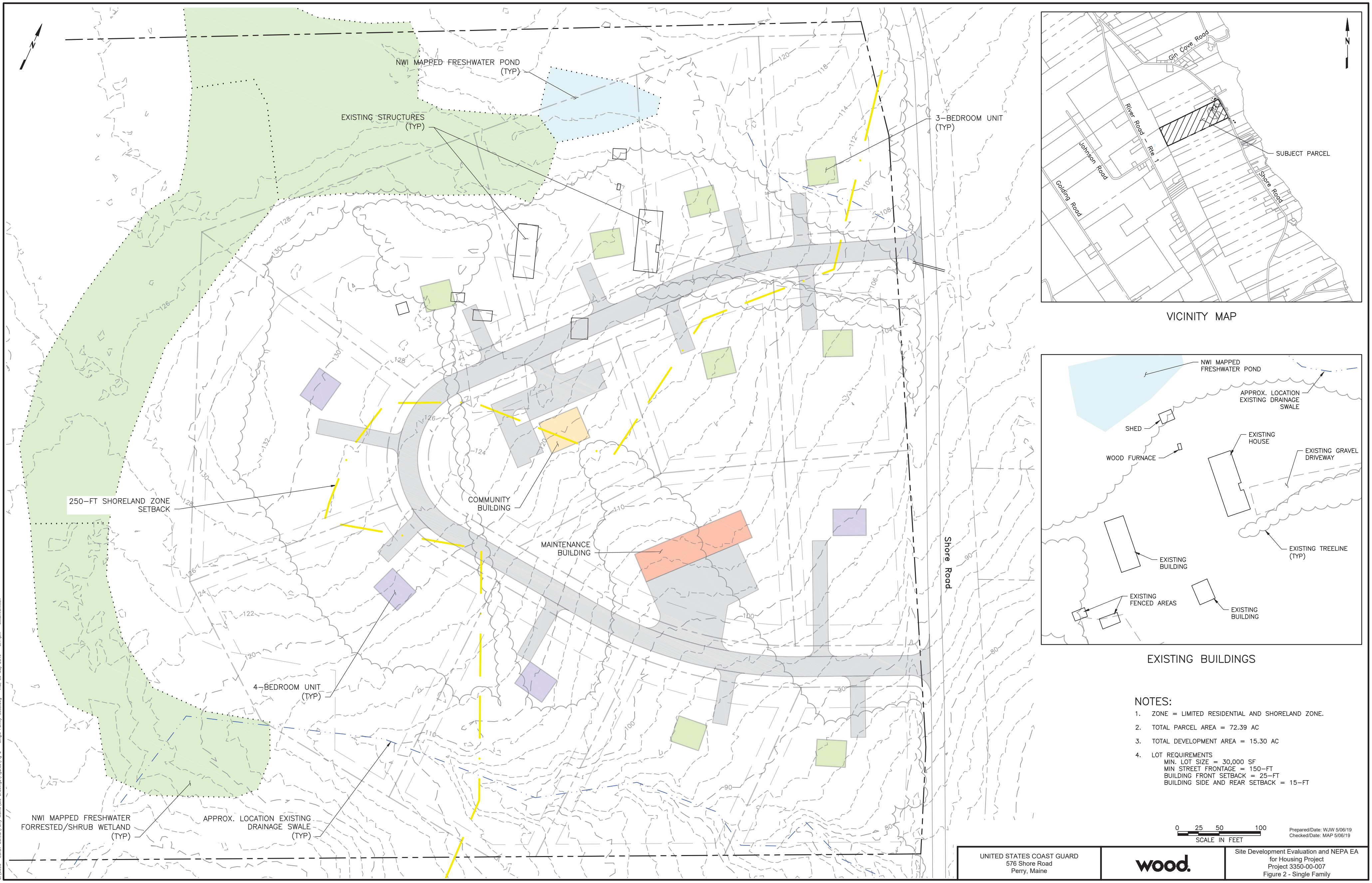
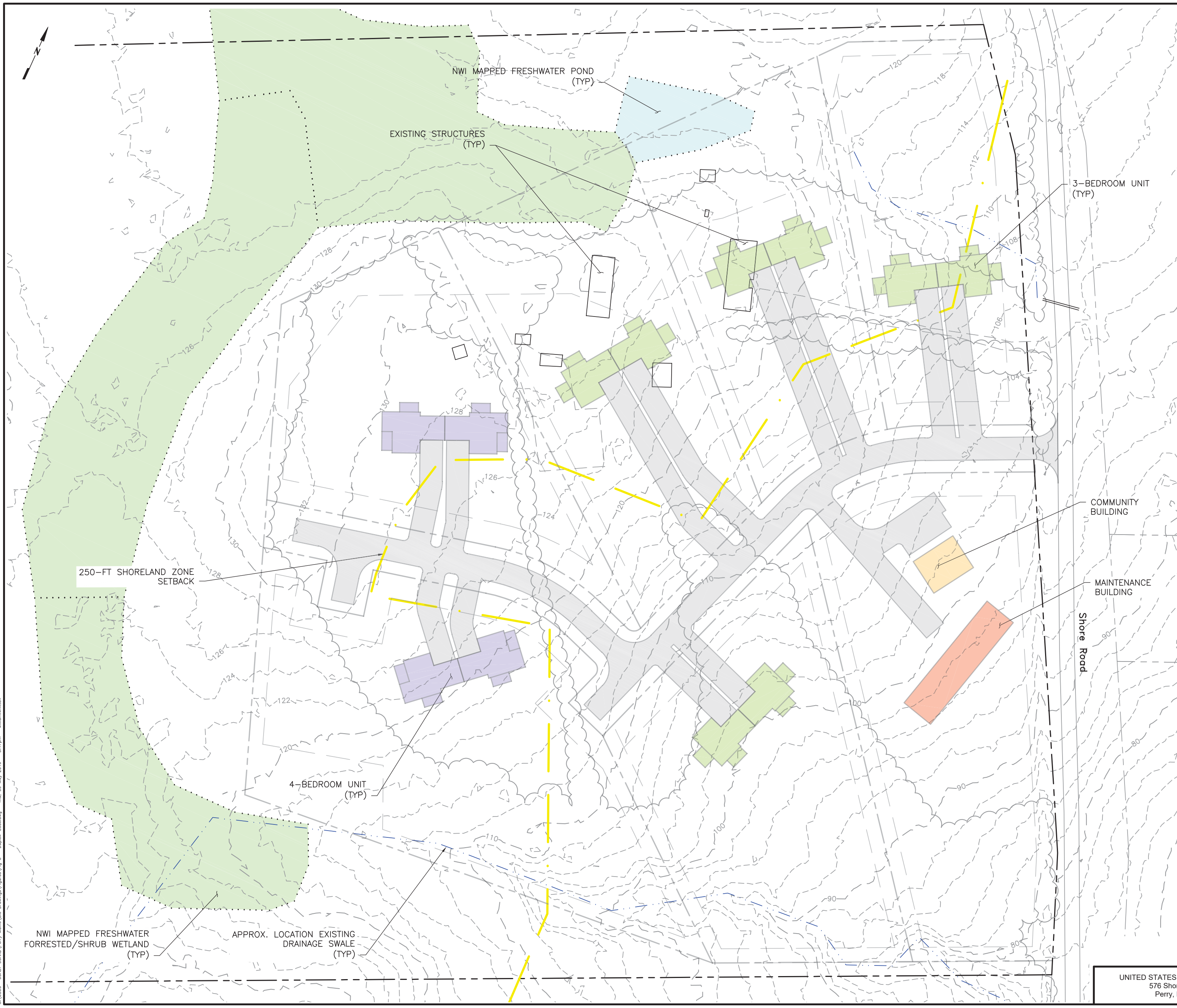
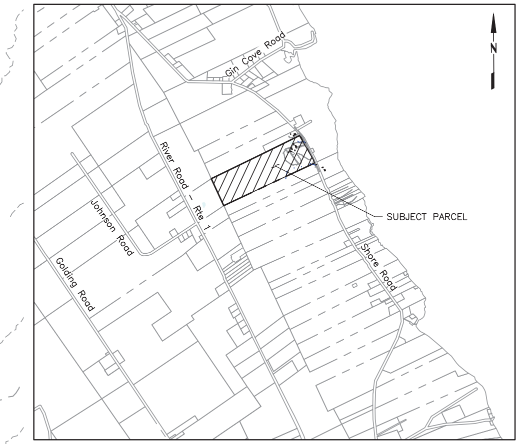
APPENDIX A: CURRENT CONCEPTUAL PLANS

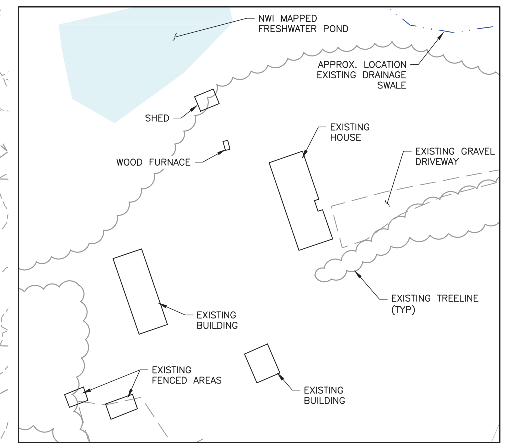


NWI MAPPED FRESHWATER POND (TYP)
EXISTING STRUCTURES (TYP)
3-BEDROOM UNIT (TYP)
250-FT SHORELAND ZONE SETBACK
COMMUNITY BUILDING
MAINTENANCE BUILDING
4-BEDROOM UNIT (TYP)
NWI MAPPED FRESHWATER FORRESTED/SHRUB WETLAND (TYP)
APPROX. LOCATION EXISTING DRAINAGE SWALE (TYP)
Shore Road
Gin Cove Road
River Road - Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
VICINITY MAP
NWI MAPPED FRESHWATER POND
APPROX. LOCATION EXISTING DRAINAGE SWALE
SHED
WOOD FURNACE
EXISTING HOUSE
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING BUILDING
EXISTING FENCED AREAS
EXISTING BUILDING
EXISTING BUILDINGS
NOTES:
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
MIN. LOT SIZE = 30,000 SF
MIN STREET FRONTAGE = 150-FT
BUILDING FRONT SETBACK = 25-FT
BUILDING SIDE AND REAR SETBACK = 15-FT
0 25 50 100
SCALE IN FEET
Prepared/Date: WJW 5/06/19
Checked/Date: MAP 5/06/19
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
wood.
Site Development Evaluation and NEPA EA for Housing Project
Project 3350-00-007
Figure 2 - Single Family





VICINITY MAP



EXISTING BUILDINGS

NOTES:

1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
   MIN. LOT SIZE = 30,000 SF
   MIN STREET FRONTAGE = 150-FT
   BUILDING FRONT SETBACK = 25-FT
   BUILDING SIDE AND REAR SETBACK = 15-FT

0 25 50 100
SCALE IN FEET

Prepared/Date: WJW 5/06/19
Checked/Date: MAP 5/06/19

UNITED STATES COAST GUARD 576 Shore Road Perry, Maine	wood.	Site Development Evaluation and NEPA EA for Housing Project Project 3350-00-007 Figure 3 - Duplexes

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Appendix D-3

Maine USFWS Rare, Threatened and Endangered Species Documentation

Maine Endangered Species (October 15, 2015)		
	Occurrence	**Reasoning**
Birds		
American Pipit (Anthus rubescens)	No	prefers tundra/alpine
Black-crowned Night Heron (Nycticorax nycticorax)	Unlikely	prefered habitat lacking
Black Tern (Chlidonias niger)	Unlikely	perfered habitat lacking
Golden Eagle (Aquila chrysaetos)	Possible	fly by
Grasshopper Sparrow (Ammodramus savannarum)	Unlikely	Out of typical range/no habitat
Least Bittern (Ixobrychus exilis)	Unlikely	perfered habitat lacking
Least Tern (Sterna antillarum)	No	no habitat
Peregrine Falcon (Falco peregrinus)	Unlikely	no habitat/flyby
Piping Plover (Charadrius melodus)	No	no habitat
Roseate Tern (Sterna dougallii)	No	no habitat
Sedge Wren (Cistothorus platensis)	Unlikely	prefered habitat lacking
Fish		
Redfin Pickerel (Esox americanus americanus)	No	No habitat
Invertebrates		
Beetles		
Cobblestone Tiger Beetle (Cicindela marginipennis)	No	No habitat
Butterflies and Skippers		
Edwards' Hairstreak (Satyrium edwardsii)	Unlikely	outside range
Frigga Fritillary (Boloria frigga)	Unlikely	outside range
Hessel's Hairstreak (Callophrys hesseli)	Unlikely	outside range
Juniper Hairstreak (Callophrys gryneus)	No	No habitat
Katahdin Arctic (Oenis polixenes katahdin)	No	found only on Katahdin
Dragonflies and Damselflies		
Rapids Clubtail (Gomphus quadricolor)	No	No habitat
Snails		
Six-whorl Vertigo (Vertigo morsei)	No	No habitat (marl fens)
Mammals		
Little Brown Bat (Myotis lucifugus)	Unlikely	Outside range
Northern Long-eared Bat (Myotis septentrionalis)	Possible	Flyby
New England Cottontail (Sylvilagus transitionalis)	Unlikely	Outside range
Reptiles		
Snakes		
Black Racer (Coluber constrictor)	Unlikely	Outside range
Turtles		
Blanding's Turtle (Emydoidea blandingii)	Unlikely	outside range
Box Turtle (Terrapene carolina)	Unlikely	outside range

Maine Threatened Species (October 15, 2015)		
	Occurrence	**Resoning**
Birds		
Arctic Tern (Sterna paradisaea)	No	No habitat
Atlantic Puffin (Fratercula arctica)	No	No habitat
Barrow's Goldeneye (*Bucephala islandica*)	No	No habitat
Common Gallinule (Gallinula chloropus)	No	No habitat
Great Cormorant (Phalacrocorax carbo)	No	No habitat
Harlequin Duck (Histrionicus histrionicus)	No	No habitat
Razorbill (Alca torda)	No	No habitat
Short-eared Owl (Asio flammeus)	Possible	nonbreeding range
Upland Sandpiper (Bartramia longicauda)	No	No habitat
Fish		
Swamp Darter (Etheostoma fusiforme)	No	No habitat
Invertebrates		
Butterflies and Skippers		
Clayton's Copper (Lycaena dorcas claytoni)	Unlikely	Outside range
Purple Lesser Fritillary (Boloria chariclea grandis)	Unlikely	
Sleepy Duskywing (Erynnis brizo)	Unlikely	
Dragonflies and Damselflies		
Boreal Snaketail (Ophiogomphus colubrinus)	Unlikely	
Ringed Boghaunter (Williamsonia lintneri)	Unlikley	Outside range
Freshwater Mussels		
Brook Floater (Alasmidonta varicosa)	No	No habitat
Tidewater Mucket (Leptodea ochracea)	Unlikely	Outside range
Yellow Lampmussel (Lampsilis cariosa)	No	No habitat
Mayflies		
Roaring Brook Mayfly (Epeorus frisoni)	No	No habitat
Tomah Mayfly (Siphlonisca aerodromia)	No	No habitat
Moths		
Pine Barrens Zanclognatha (Zanclognatha martha)	No	No habitat
Twilight Moth (Lycia rachelae)	No	No habitat
Mammals		
Eastern Small-footed Bat (Myotis leibii)	Possible	
Northern Bog Lemming (Synaptomys borealis)	No	No habitat
Reptiles		
Spotted Turtle (Clemmys guttata)	Possible	

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

June 6, 2019

Charles Lyman
Wood Environment and Infrastructure Solutions
511 Congress Street
Portland, ME 04101

Via email: charles.lyman@woodplc.com

Re: Rare and exemplary botanical features in proximity to: USCG Perry Housing, Perry, Maine

Dear Mr. Lyman:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received June 5, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Perry, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

maine Department of Agriculture Conservation & Forestry

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of Project: USCG Housing, Perry, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Dawn-land sedge						
	SC	SU	G5T2T4	2013-07-09	13	Old field/roadside (non-forested, wetland or upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: May 16, 2019
Consultation Code: 05E1ME00-2019-SLI-0744
Event Code: 05E1ME00-2019-E-01758
Project Name: USCG - Perry, Maine

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2019-SLI-0744

Event Code: 05E1ME00-2019-E-01758

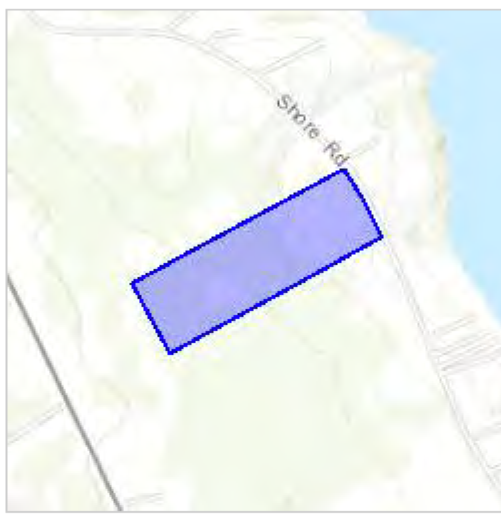
Project Name: USCG - Perry, Maine

Project Type: DEVELOPMENT

Project Description: The project includes developing approximately 25 acres of the 75 acre parcel. The proposed development includes housing for Coast Guard Personnel, up to 6 single family residences. The development to occur in areas formerly developed including the existing house lot, old farm field and fallow pasture. The remaining 2/3 of the property will be kept as forest/open space.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/45.00745909727843N67.08191525222853W



Counties: Washington, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: May 16, 2019
Consultation Code: 05E1ME00-2019-TA-0744
Event Code: 05E1ME00-2019-E-01759
Project Name: USCG - Perry, Maine

Subject: Verification letter for the 'USCG - Perry, Maine' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Charles Lyman:

The U.S. Fish and Wildlife Service (Service) received on May 16, 2019 your effects determination for the 'USCG - Perry, Maine' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

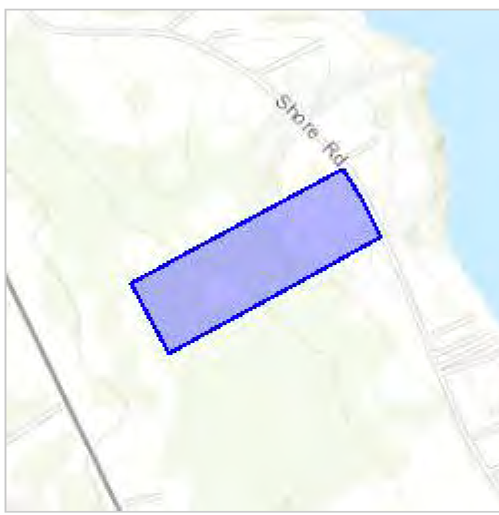
USCG - Perry, Maine

2. Description

The following description was provided for the project 'USCG - Perry, Maine':

> The project includes developing approximately 25 acres of the 75 acre parcel. The proposed development includes housing for Coast Guard Personnel, up to 6 single family residences. The development to occur in areas formerly developed including the existing house lot, old farm field and fallow pasture. The remaining 2/3 of the property will be kept as forest/open space.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/45.00745909727843N67.08191525222853W



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service’s PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?
   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

6. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?
   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type ‘0’ in questions 1-3.

1. Estimated total acres of forest conversion:

2

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type ‘0’ in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type ‘0’ in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type ‘0’ in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

Appendix E
Laboratory Analytical Data Reports
(CD)

Appendix F-1
Geoprofessional Business Association Document

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can

construction project.

Geotechnical-Engineering Services Are Performed for

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation*.

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

Appendix F-2
Geotechnical Boring Logs

MAJOR DIVISIONS			GROUP SYMBOLS	GENERAL DESCRIPTIONS
COARSE GRAINED SOILS (More than 50% RETAINED on No. 200 sieve)	GRAVELS (More than 50% of coarse fraction RETAINED on No. 4 sieve)	CLEAN GRAVELS (Less than 5% fines)	GW	Well graded gravels or gravel-sand mixtures; trace or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures; trace or no fines.
		GRAVELS WITH FINES (More than 12% fines)	GM	Silty gravels or gravel-sand-silt mixtures.
			GC	Clayey gravels or gravel-sand-clay mixtures.
	SANDS (50% or more of coarse fraction PASSES the No. 4 sieve)	CLEAN SANDS (Less than 5% fines)	SW	Well graded sands or sand-gravel mixtures; trace or no fines.
			SP	Poorly graded sands or sand-gravel mixtures, trace or no fines.
		SANDS WITH FINES (More than 12% fines)	SM	Silty sands or sand-gravel-silt mixtures.
			SC	Clayey sands or sand-gravel-clay mixtures.
FINE GRAINED SOILS (50% or more PASSES the No. 200 sieve)	SILTS AND CLAYS (Liquid Limit LESS than 50)		ML	Inorganic silts or rock flour. Non-plastic or very slightly plastic. PI < 4 or plots below "A" line.
			CL	Inorganic lean clay. Low to medium plasticity. PI > 7 and plots on or above "A" line.
			OL	Organic silts, clays, and silty clays. Low to medium plasticity.
	SILTS AND CLAYS (Liquid Limit of 50 or GREATER)		MH	Inorganic elastic silt. PI plots below "A" line.
			CH	Inorganic fat clay. High plasticity. PI plots on or above "A" line.
			OH	Organic silts and clays. High plasticity.
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils. Decomposed vegetable tissue. Fibrous to amorphous texture.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

References: ASTM D 2487 (Unified Soil Classification System) and ASTM D 2488 (Visual-Manual Procedure).

TYPICAL SYMBOLS	
Shelby Tube	Auger Cuttings
Standard Split Spoon Sample	3" Split Spoon Sample
Rock Core	Dynamic Cone Penetrometer
Vane Shear	Bulk/Grab Sample
Geoprobe Sample	Sonic or Vibro-Core Sample
Water Table at time of drilling	Water Table after 24 hours

CORRELATION OF STANDARD PENETRATION TEST (SPT) WITH RELATIVE DENSITY AND CONSISTENCY

GRAVEL, SAND, & SILT (NON-PLASTIC)		SILT (PLASTIC) & CLAY		
N or N_{60}	Relative Density	N or N_{60}	Su (psf)	Consistency
0 - 4	Very Loose	0 - 2	0 - 250	Very Soft
4 - 10	Loose	2 - 4	250 - 500	Soft
10 - 30	Medium Dense	4 - 8	500 - 1000	Medium Stiff
30 - 50	Dense	8 - 15	1000 - 2000	Stiff
Over 50	Very Dense	15 - 30	2000 - 4000	Very Stiff
		Over 30	Over 4000	Hard

SPT Notes: WR = Weight of Rods; WH = Weight of Hammer

TERMS DESCRIBING SOILS (excludes particles > 3", organics, debris, etc.)		TERMS DESCRIBING MATERIALS (i.e. particles > 3", organics, debris, etc.)	
Trace:	Particles present, but < 5%	Occasional:	Particles present, but < 10%
Few:	5% to 15%	Some:	10% to 25%
Little:	15% to 25%	Frequent:	> 25%
Some:	25% to 50%		

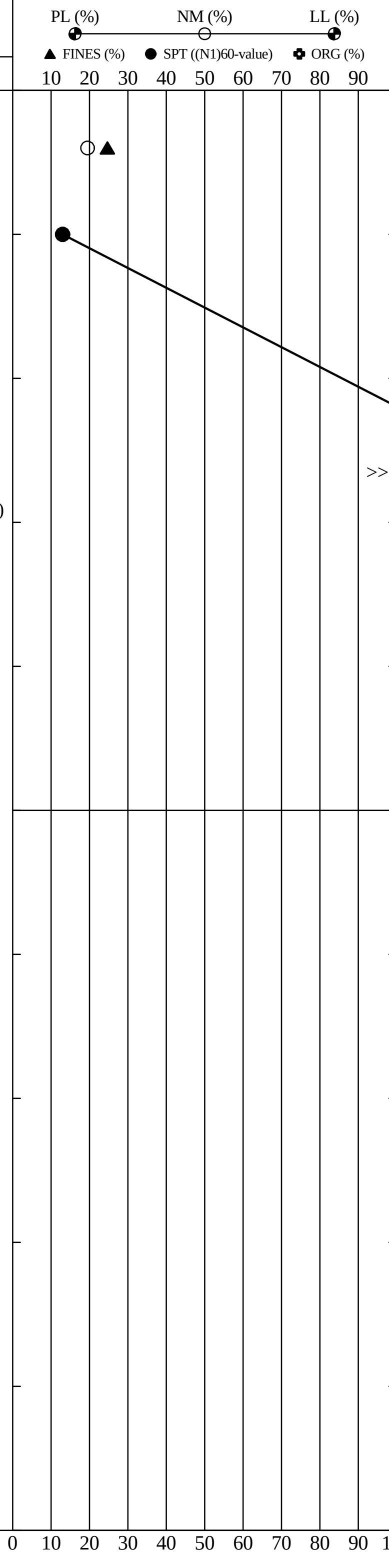
TERMS DESCRIBING MOISTURE		TERMS DESCRIBING STRUCTURE	
Dry:	Absence of moisture; dusty	Layer:	> 3" thick
Moist:	Damp, but no visible water	Seam:	1/16" to 3" thick
Wet:	Visible/free water	Parting:	< 1/16" thick

KEY TO SYMBOLS AND DESCRIPTIONS

Amec Foster Wheeler HDR

JOINT VENTURE

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS (SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS)	ELEV (ft)	SAMPLES IDENT	BLOW COUNT (1st 6" / 2nd 6" / 3rd 6" / 4th 6") Or RQD / % REC
0	Brown, fine to coarse SAND, some gravel, little silt, SM, loose, moist: TOPSOIL - frequent rootlets	112.3		
	Brown, SILT, few gravel, trace sand, ML, medium dense, moist: GLACIAL TILL		S-1	2-3-3-4 N = 6 ($(N1)_{60}$ = 13)
	Reddish-brown, fine to coarse SAND, little silt, little gravel, SM, medium dense, moist: GLACIAL TILL			
	Brownish-red, GRAVEL, some fine to coarse sand, few silt, GP-GM, dense, moist: GLACIAL TILL		S-2	4-20-50/0.3' ($(N1)_{60}$ = 133)
	- 3.3' to 3.7' bgs: SPT N-value and split-spoon sample not obtained; probable weathered bedrock, interpreted based on split-spoon sampler refusal and drilling observations: WEATHERED BEDROCK			
	Reddish-brown, fine to coarse grained, CONGLOMERATE with Sandstone and Siltstone, highly fractured, moderately weathered, very poor quality, fine to coarse sand and silt joint fillings: BEDROCK			
5		107.3	R-1	0 / 50
	End of exploration at 7.7' bgs			
10		102.3		



DRILLER: New England Boring Contractors
EQUIPMENT: Mobile B-53
METHOD: Rotary Wash with Water (Cased)
HOLE DIAM.: 3"
SPTs: Auto-Hammer
REMARKS: Backfilled with bentonite chips upon completion.

LOGGED BY: NDL   CHECKED BY/DATE: BBJ/7-2-19

THIS BOREHOLE RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

GEOTECHNICAL BORING RECORD

BOREHOLE NO.: B-1
DRILLED: 06/12/19
PROJECT: USCG Eastport Housing Site Development
LOCATION: Perry, ME
PROJECT NO.: 335000007

Amec Foster Wheeler HDR JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
3.7	-------	0.0		108.6
	1:07	0.5		
4.7	-------	1.0		107.6
	2:30	1.5		
5.7	-------	2.0	No Recovery	106.6
	3:50	2.5		
6.7	-------	3.0		105.6
	2:40	3.5		
7.7	-------	4.0		104.6

PRIMARY ROCK DESCRIPTION depth 3.7' to 7.7'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	other ________	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

Comments:
Core barrel jammed at 7.7' bgs. End R-1.

LOG OF ROCK CORE SAMPLE R-1

DEPTH INTERVAL 3.7' to 7.7'

BORING B-1

Lab Sample No:	**Recovery**	
Sample Interval:	24 inches	50 percent
Water Return During Core?	**RQD**	
yes no, lost water at ______ (ft)	0 inches	0 percent

Amec Foster Wheeler HDR
JOINT VENTURE

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS (SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS)	ELEV (ft)	SAMPLE IDENT	BLOW COUNT Or RQD / % REC
0	Brown, fine SAND, some silt, trace gravel, trace clay, SM, medium dense, moist: TOPSOIL - frequent rootlets	126.1		
	Brown, SILT, some gravel, little fine to coarse sand, trace clay, ML, dense, moist, friable: GLACIAL TILL		S-1	3-5-5-6 N = 10 ($(N1)_{60}$ = 21)
	Reddish-brown, GRAVEL, some fine to coarse sand, few silt, GP-GM, very dense, moist: GLACIAL TILL		S-2	12-33-50/0.4' ($(N1)_{60}$ = 158)
	- 3.3' to 4.0' bgs: SPT N-value and split-spoon sample not obtained; probable weathered bedrock, interpreted based on split-spoon sampler refusal and drilling observations: WEATHERED BEDROCK			
	Reddish-brown, fine to coarse grained, CONGLOMERATE with Sandstone and Siltstone, highly fractured, moderately weathered, very poor quality, fine to coarse sand and silt joint fillings: BEDROCK		R-1	0 / 100
5		121.1		
	C		R-2	0 / 100
	End of exploration at 9.0' bgs			
10		116.1		

Legend: PL (%) NM (%) LL (%); ▲ FINES (%) ● SPT ((N1)60-value) ✪ ORG (%)

Scale: 0 10 20 30 40 50 60 70 80 90 100

>>

DRILLER:	New England Boring Contractors
EQUIPMENT:	Mobile B-53
METHOD:	Rotary Wash with Water (Cased)
HOLE DIAM.:	3"
SPTs:	Auto-Hammer
REMARKS:	Backfilled with bentonite chips upon completion.

LOGGED BY: ALF CHECKED BY/DATE: BBJ/7-2-19

THIS BOREHOLE RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

GEOTECHNICAL BORING RECORD

BOREHOLE NO.: B-2
DRILLED: 06/13/19
PROJECT: USCG Eastport Housing Site Development
LOCATION: Perry, ME
PROJECT NO.: 335000007 **PAGE** 1 **OF** 1

Amec Foster Wheeler HDR JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
4.0	-------	0.0	------	122.1
	2:10	0.5		
5.0	-------	1.0		121.1
	1:30			
5.5	-------	1.5		120.6

PRIMARY ROCK DESCRIPTION depth 4.0' to 5.5'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	other	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other	wide (+24")	slickensided

Comments:
Core barrel jammed at 5.5' bgs. End R-1

LOG OF ROCK CORE SAMPLE R-1

DEPTH INTERVAL 4.0' to 5.5'

BORING B-2

Lab Sample No:	**Recovery**		
Sample Interval:	18 inches	100 percent	
Water Return During Core?	**RQD**		
yes no, lost water at ______ (ft)	0 inches	0 percent	

Amec Foster Wheeler HDR
JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
5.5	-------	0.0		120.6
	1:30			
6.0	-------	0.5		120.1
	3:20	1.0		
7.0	-------	1.5		119.1
	2:35	2.0		
8.0	-------	2.5		118.1
	2:30	3.0		
9.0	-------	3.5		117.1

PRIMARY ROCK DESCRIPTION depth 5.5' to 9.0'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	other______	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other______	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other______	wide (+24")	slickensided

Comments:

LOG OF ROCK CORE SAMPLE R-2

DEPTH INTERVAL 5.5' to 9.0'

BORING B-2

Lab Sample No:	**Recovery**		
Sample Interval:	42 inches	100 percent	
Water Return During Core?	**RQD**		
yes no, lost water at ______ (ft)	0 inches	0 percent	

Amec Foster Wheeler HDR
JOINT VENTURE

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS (SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS)	ELEV (ft)	SAMPLES IDENT	BLOW COUNT (1st 6" 2nd 6" 3rd 6" 4th 6") Or RQD / % REC
0	Brown, fine SAND, little to some silt, SM, loose, moist: TOPSOIL - frequent rootlets	127.3		
	Reddish-brown, SILT, some gravel and fine sand, ML, moist: GLACIAL TILL			
	Reddish-brown, fine to coarse SAND, some gravel, few silt, SW-SM, very dense, moist: GLACIAL TILL		S-1	2-5-22-50 N = 27 ((N1)$_{60}$ = 57)
	- 2.0' to 3.0' bgs: SPT N-value and split-spoon sample not obtained; probable weathered bedrock, interpreted based on split-spoon sampler refusal and drilling observations: WEATHERED BEDROCK			
	Reddish-brown, fine to coarse grained, CONGLOMERATE with Sandstone and Siltstone, highly fractured, moderately weathered, very poor quality, fine to coarse sand and silt joint fillings: BEDROCK			
5		122.3	R-1	0/51
	C			
			R-2	14/100
	End of exploration at 9.5' bgs			
10		117.3		

PL (%) NM (%) LL (%)

▲ FINES (%) ● SPT ((N1)60-value) ✪ ORG (%)

10 20 30 40 50 60 70 80 90

0 10 20 30 40 50 60 70 80 90 100

DRILLER: New England Boring Contractors
EQUIPMENT: Mobile B-53
METHOD: Rotary Wash with Water (Cased)
HOLE DIAM.: 3"
SPTs: Auto-Hammer
REMARKS: Backfilled with bentonite chips upon completion.

LOGGED BY: ALF CHECKED BY/DATE: BBJ/7-2-19

THIS BOREHOLE RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

GEOTECHNICAL BORING RECORD

BOREHOLE NO.: B-3
DRILLED: 06/13/19
PROJECT: USCG Eastport Housing Site Development
LOCATION: Perry, ME
PROJECT NO.: 335000007 **PAGE** 1 **OF** 1

Amec Foster Wheeler HDR
JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
3.0	-------	0.0		124.6
	1:30	0.5		
4.0	-------	1.0		123.6
	1:10	1.5		
5.0	-------	2.0		122.6
	1:45	2.5		
6.0	-------	3.0		121.6
	2:00	3.5		
7.0	-------	4.0		120.6
7.1	-------			120.5

PRIMARY ROCK DESCRIPTION depth 3.0' to 7.1'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	other ________	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

Comments:
Core barrel jammed at 7.1' bgs. End R-1.

LOG OF ROCK CORE SAMPLE R-1

DEPTH INTERVAL 3.0' to 7.1'

BORING B-3

Lab Sample No:	**Recovery**		
Sample Interval:	25 inches	51 percent	
Water Return During Core?	**RQD**		
yes no, lost water at ______ (ft)	0 inches	0 percent	

Amec Foster Wheeler HDR
JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
7.1	-------	0.0		120.5
	-	0.5		
8.1	-------	1.0		119.5
	2:00	1.5		
9.1	-------	2.0		118.5
	-			
9.5	-------			118.1

PRIMARY ROCK DESCRIPTION depth 7.1' to 9.5'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	other ________	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

Comments:
Core barrel jammed at 9.5' bgs. End R-2.

LOG OF ROCK CORE SAMPLE R-2

DEPTH INTERVAL 7.1' to 9.5'

BORING B-3

Lab Sample No:
Sample Interval:

Recovery 29 inches 100 percent

Water Return During Core?
yes no, lost water at ________ (ft)

RQD 4 inches 14 percent

Amec Foster Wheeler HDR
JOINT VENTURE

GEOTECHNICAL BORING RECORD

BOREHOLE NO.: B-4
DRILLED: 06/13/19
PROJECT: USCG Eastport Housing Site Development
LOCATION: Perry, ME
PROJECT NO.: 335000007
PAGE 1 **OF** 1

SOIL CLASSIFICATION AND REMARKS

SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS	ELEV (ft)	SAMPLES IDENT	BLOW COUNT (1st 6" / 2nd 6" / 3rd 6" / 4th 6") Or RQD / % REC
0	Brown, SILT, some fine sand, little clay, few gravel, ML, loose, moist: TOPSOIL - frequent rootlets	117.1		
	Brown, SILT, some fine to medium sand, trace gravel, trace clay, ML, moist: GLACIAL TILL - occasional rootlets			
	Brown, fine to coarse SAND, little gravel, few silt, SW-SM, dense to very dense, moist: GLACIAL TILL		S-1	2-3-16-38 N = 19 ((N1)60 = 40)
	Reddish-brown, fine to coarse SAND, some gravel, little silt, SM, very dense, moist, friable: GLACIAL TILL		S-2	17-27-25/0.1' ((N1)60 = 99)
	- 3.1' to 4.0' bgs: SPT N-value and split-spoon sample not obtained; probable weathered bedrock, interpreted based on drilling observations: WEATHERED BEDROCK			
	Reddish-brown, fine to coarse grained, CONGLOMERATE with Sandstone and Siltstone, highly fractured, moderately weathered, very poor to poor quality, fine to coarse sand and silt joint fillings: BEDROCK			
5		112.1	R-1	0 / 85
	C		R-2	29 / 100
	End of exploration at 9.0' bgs			
10		107.1		

Graph legend: PL (%), NM (%), LL (%); ▲ FINES (%); ● SPT ((N1)60-value); ORG (%)

Scale: 0 10 20 30 40 50 60 70 80 90 100

DRILLER:	New England Boring Contractors
EQUIPMENT:	Mobile B-53
METHOD:	Rotary Wash with Water (Cased)
HOLE DIAM.:	3"
SPTs:	Auto-Hammer
REMARKS:	Backfilled with bentonite chips upon completion.

LOGGED BY: ALF CHECKED BY/DATE: BBJ/7-2-19

THIS BOREHOLE RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

Amec Foster Wheeler HDR JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
4.0	-------	0.0----		113.1
	2:00	0.5----		
5.0	-------	1.0----		112.1
	1:40	1.5----		
6.0	-------	2.0----		111.1
	2:30			
		2.5----		
6.7	-------	----		110.4

PRIMARY ROCK DESCRIPTION depth 4.0' to 6.7'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	other ______	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ______	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ______	wide (+24")	slickensided

Comments:
Core barrel jammed at 6.7' bgs. End R-1.

LOG OF ROCK CORE SAMPLE R-1

DEPTH INTERVAL 4.0' to 6.7'

BORING B-4

Lab Sample No:	**Recovery**		
Sample Interval:	28 inches	85 percent	
Water Return During Core?	**RQD**		
yes no, lost water at ______ (ft)	0 inches	0 percent	

Amec Foster Wheeler HDR
JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
6.7	-------	0.0		110.4
	1:30	0.5		
7.7	-------	1.0		109.4
		1.5		
	3:30			
		2.0		
9.0	-------			108.1

PRIMARY ROCK DESCRIPTION depth 6.7' to 9.0'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
1	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
2	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
3	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
4	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
5	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
6	light gray	sedimentary	low (5-35 deg.)	
7	gray	metamorphic	moderate (35-55 deg.)	
8	dark gray	igneous	high (55-85 deg.)	
9	other ____	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ____	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ____	wide (+24")	slickensided

Comments:

LOG OF ROCK CORE SAMPLE R-2

DEPTH INTERVAL 6.7' to 9.0'

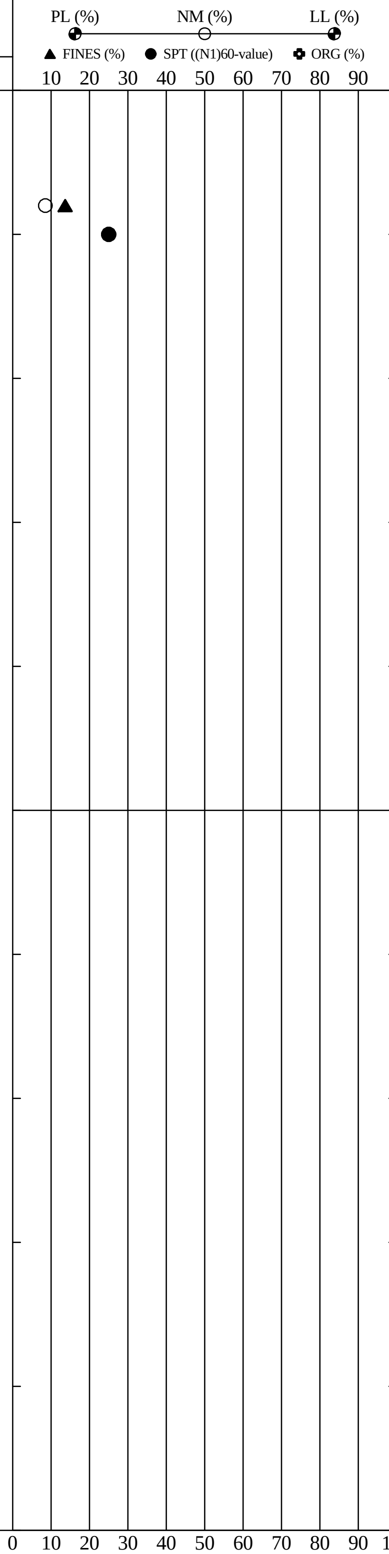
BORING B-4

Lab Sample No:	Recovery	
Sample Interval:	28 inches	100 percent
Water Return During Core?	**RQD**	
yes no, lost water at ______ (ft)	8 inches	30 percent

Amec Foster Wheeler HDR
JOINT VENTURE

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS	ELEV (ft)	IDENT	TYPE	BLOW COUNT (1st 6" / 2nd 6" / 3rd 6" / 4th 6") Or RQD / % REC
0	Brown, SILT, little fine to coarse sand, little clay, ML, loose, moist: TOPSOIL	95.7			
	Brown, SILT, little fine to coarse sand, ML, moist, friable: GLACIAL TILL				
	Reddish-brown, fine to coarse SAND, some gravel, few silt, SM, medium dense to dense, moist: GLACIAL TILL		S-1		2-3-9-19 N = 12 ((N1)$_{60}$ = 25)
			S-2		50/0.5'
	- 2.5' to 4.0' bgs: SPT N-value and split-spoon sample not obtained; probable weathered bedrock, interpreted based on drilling observations: WEATHERED BEDROCK				
	Reddish-brown, fine to coarse grained, CONGLOMERATE with Sandstone and Siltstone, highly fractured, moderately weathered, very poor quality, fine to coarse sand and silt joint fillings: BEDROCK				
5		90.7	R-1		0 / 55
			R-2		0 / 25
	End of exploration at 9.0' bgs				
10		85.7			

SEE KEY TO SYMBOLS AND DESCRIPTIONS FOR EXPLANATION OF SYMBOLS, TERMINOLOGY, AND ABBREVIATIONS



DRILLER: New England Boring Contractors
EQUIPMENT: Mobile B-53
METHOD: Rotary Wash with Water (Cased)
HOLE DIAM.: 3"
SPTs: Auto-Hammer
REMARKS: Backfilled with bentonite chips upon completion.

LOGGED BY: ALF CHECKED BY/DATE: BBJ/7-2-19

THIS BOREHOLE RECORD PRESENTS A REASONABLE INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS MAY DIFFER. STRATA INTERFACES (AS SHOWN) ARE APPROXIMATE. ACTUAL TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

GEOTECHNICAL BORING RECORD

BOREHOLE NO.: B-5
DRILLED: 06/13/19
PROJECT: USCG Eastport Housing Site Development
LOCATION: Perry, ME
PROJECT NO.: 335000007

Amec Foster Wheeler HDR JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
4.0	-------	0.0		91.7
	2:15	0.5		
5.0	-------	1.0		90.7
	2:20	1.5	<-No Recovery->	
6.0	-------	2.0		89.7
	0:20			
6.2	-------			89.5

PRIMARY ROCK DESCRIPTION depth 4.0' to 6.2'

Mohs' Hardness: 1, 2, 3, 4, 5, 6, 7, 8, 9

Weathering: fresh; slightly weathered; **moderate**; intense; severe

Color: light gray; gray; dark gray; **Reddish-brown**

Grain Sizes: aphanitic (<1/16"); **fine grained (1/16")**; **medium grained (1/16-3/16")**; **coarse grained (3/16-1/4")**; very coarse grained (+1/4")

Lithology: **sedimentary**; metamorphic; igneous; Name: **CONGLOMERATE**

Bedding Thickness: **no visible bedding**; very thin (< 3/8 in.); thin (0.1 to 0.3 ft.); thick (>0.3 ft.)

Bedding Orientation: horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Foliation Orientation: **no visible foliation**; horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness: 1, 2, 3, 4, 5, 6, 7, 8, 9

Weathering: fresh; slightly weathered; moderate; intense; severe

Color: light gray; gray; dark gray; other ________

Grain Sizes: aphanitic (<1/16"); fine grained (1/16"); medium grained (1/16-3/16"); coarse grained (3/16-1/4"); very coarse grained (+1/4")

Lithology: sedimentary; metamorphic; igneous; Name:

Bedding Thickness: no visible bedding; very thin (< 3/8 in.); thin (0.1 to 0.3 ft.); thick (>0.3 ft.)

Bedding Orientation: horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Foliation Orientation: no visible foliation; horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s): ________

Fillings or Coatings: **Fine to coarse sand and silt**

Joint Orientation: horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Aperture: tight; open

Roughness — **Intermediate Scale**: Stepped; Undulating; Planar. **Small scale**: rough; smooth; slickensided

Joint Weathering: fresh; slightly weathered; moderate; intense; severe

Joint Type: joint set; bedding joint(s); foliation joint(s); fractures; shear; other ________

Spacing: extremely close (<3/4"); very close (3/4"-2.5"); close (2.5"-8"); moderate (8"-24"); wide (+24")

SECONDARY JOINT(S)

Depth(s): ________

Fillings or Coatings: ________

Joint Orientation: horizontal (0-5 deg.); low (5-35 deg.); moderate (35-55 deg.); high (55-85 deg.); vertical (85-90 deg.)

Aperture: tight; open

Roughness — **Intermediate Scale**: Stepped; Undulating; Planar. **Small scale**: rough; smooth; slickensided

Joint Weathering: fresh; slightly weathered; moderate; intense; severe

Joint Type: joint set; bedding joint(s); foliation joint(s); fractures; shear; other ________

Spacing: extremely close (<3/4"); very close (3/4"-2.5"); close (2.5"-8"); moderate (8"-24"); wide (+24")

Comments:
Core barrel jammed at 6.2' bgs. End R-1.

LOG OF ROCK CORE SAMPLE R-1

DEPTH INTERVAL 4.0' to 6.2'

BORING B-5

Lab Sample No:
Sample Interval:

Recovery: 14 inches — 50 percent

RQD: 0 inches — 0 percent

Water Return During Core? **yes** no, lost water at ______ (ft)

Amec Foster Wheeler HDR
JOINT VENTURE

Boring Depth (ft)	Core Rate Min/ft	Sample Depth (ft)	Core Sketch	Elev. (ft)
6.2	-------	0.0		89.5
	2:00	0.5		
7.0	-------			88.7
		1.0		
	2:30	1.5	No Recovery	
8.0	-------			87.7
		2.0		
	3:15	2.5		
9.0	-------			86.7

PRIMARY ROCK DESCRIPTION depth 6.2' to 9.0'

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	Reddish-brown	Name: CONGLOMERATE	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):
Conglomerate with sandstone and siltstone

SECONDARY ROCK DESCRIPTION (if applicable) depth ________ to ________

Mohs' Hardness	Weathering	Grain Sizes	Bedding Thickness	Foliation Orientation
1	fresh	aphanitic (<1/16")	no visible bedding	no visible foliation
2	slightly weathered	fine grained (1/16")	very thin (< 3/8 in.)	horizontal (0-5 deg.)
3	moderate	medium grained (1/16-3/16")	thin (0.1 to 0.3 ft.)	low (5-35 deg.)
4	intense	coarse grained (3/16-1/4")	thick (>0.3 ft.)	moderate (35-55 deg.)
5	severe	very coarse grained (+1/4")	**Bedding Orientation**	high (55-85 deg.)
6	**Color**	**Lithology**	horizontal (0-5 deg.)	vertical (85-90 deg.)
7	light gray	sedimentary	low (5-35 deg.)	
8	gray	metamorphic	moderate (35-55 deg.)	
9	dark gray	igneous	high (55-85 deg.)	
	other	Name:	vertical (85-90 deg.)	

Miscellaneous Features (minerals, veins, cavities, fossils):

PRIMARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
	Fine to coarse sand and silt	horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

SECONDARY JOINT(S)

Depth(s)	Fillings or Coatings	Joint Orientation	Aperture
		horizontal (0-5 deg.)	tight
		low (5-35 deg.)	open
		moderate (35-55 deg.)	**Roughness**
		high (55-85 deg.)	**Intermediate Scale**
Joint Weathering	**Joint Type**	vertical (85-90 deg.)	Stepped
fresh	joint set	**Spacing**	Undulating
slightly weathered	bedding joint(s)	extremely close (<3/4")	Planar
moderate	foliation joint(s)	very close (3/4"-2.5")	**Small scale**
intense	fractures	close (2.5"-8")	rough
severe	shear	moderate (8"-24")	smooth
	other ________	wide (+24")	slickensided

Comments:

LOG OF ROCK CORE SAMPLE R-2

DEPTH INTERVAL 6.2' to 9.0'

BORING B-5

Lab Sample No:
Sample Interval:

Recovery 8 inches 25 percent

Water Return During Core?
yes no, lost water at ______ (ft)

RQD 0 inches 0 percent

Amec Foster Wheeler HDR
JOINT VENTURE

Amec Foster Wheeler HDR
JOINT VENTURE

Appendix F-3
Geotechnical Lab Reports

GeoTesting EXPRESS

Client:	Wood Environmental & Infrastructure, Inc.		
Project:	USCG Eastport Site Develop		
Location:		Project No:	GTX-310152
Boring ID: ---	Sample Type: ---	Tested By:	ckg
Sample ID: ---	Test Date: 06/24/19	Checked By:	jsc
Depth : ---	Test Id: 509933		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content, %
B-1	S- 1	0.0-0.8 ft	Moist, dark yellowish brown silty sand with gravel	19.5
B-2	S- 1	0.0-0.4 ft	Moist, dark yellowish brown silt	22.0
B-2	S- 2 B	2.4-3.3 ft	Moist, dark yellowish brown gravel with silt and sand	4.7
B-3	S- 1 B	0.5-1.0 ft	Moist, dark yellowish brown sand with silt and gravel	4.3
B-4	S- 1 B	0.8-1.3 ft	Moist, dark yellowish brown sand with silt and gravel	5.4
B-4	S- 2	2.4-3.1 ft	Moist, dark yellowish brown silty sand with gravel	7.7
B-5	S- 1	0.6-1 ft	Moist, dark yellowish brown silty sand with gravel	8.5

Notes: Temperature of Drying : 110° Celsius

Client:	Wood Environmental & Infrastructure, Inc.				
Project:	USCG Eastport Site Develop				
Location:				Project No:	GTX-310152
Boring ID:	B-2	Sample Type:	jar	Tested By:	cam
Sample ID:	S-1	Test Date:	06/21/19	Checked By:	jsc
Depth :	0.0-0.4 ft	Test Id:	509934		

Test Comment: ---
Visual Description: Moist, dark yellowish brown silt
Sample Comment: ---

Moisture, Ash, and Organic Matter - ASTM D2974

Boring ID	Sample ID	Depth	Description	Moisture Content,%	Ash Content,%	Organic Matter,%
B-2	S-1	0.0-0.4 ft	Moist, dark yellowish brown silt	22	91.2	8.8

Notes: Moisture content determined by Method A and reported as a percentage of oven-dried mass; dried to a constant mass at temperature of 105º C
Ash content and organic matter determined by Method C; dried to constant mass at temperature 440º C

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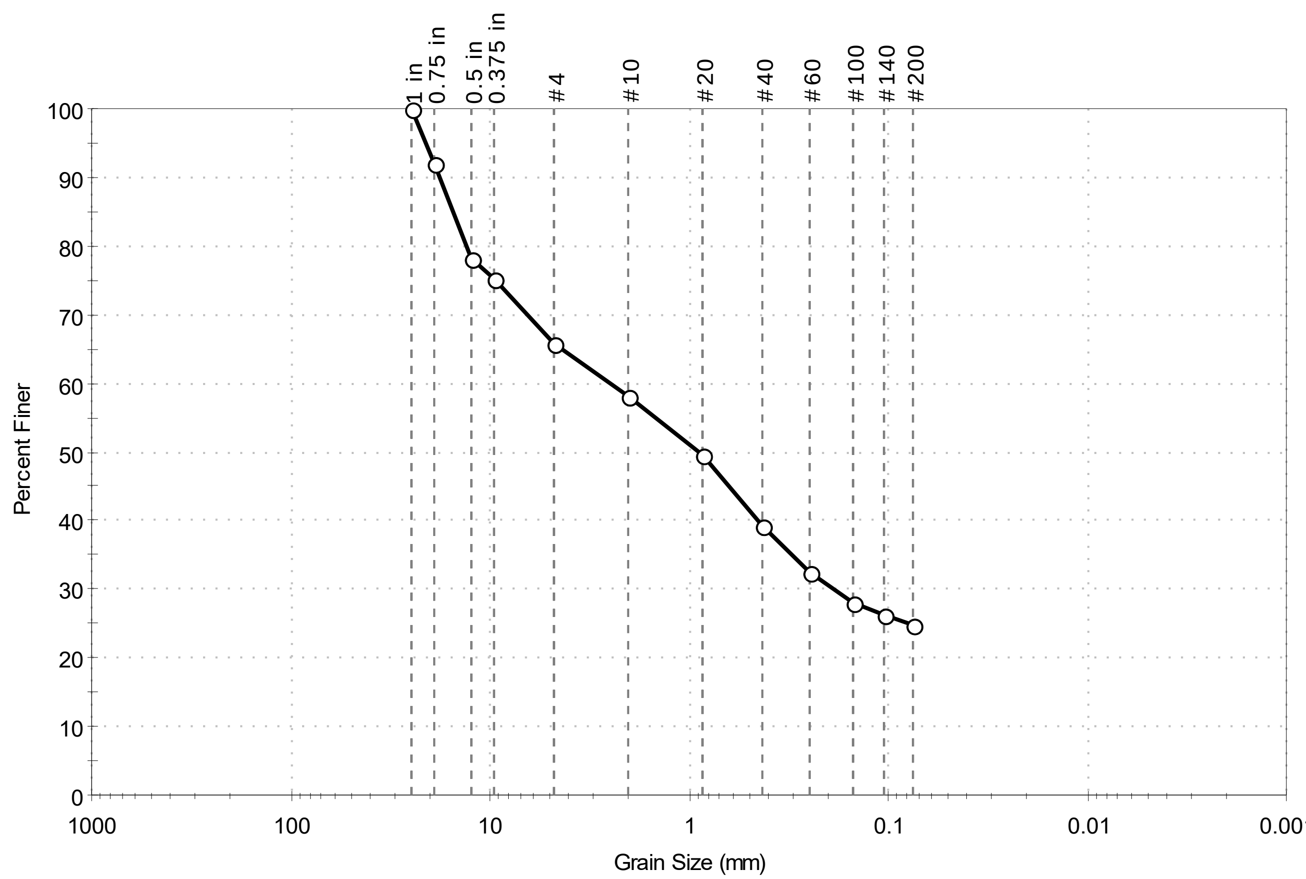
Client:	Wood Environmental & Infrastructure, Inc.		
Project:	USCG Eastport Site Develop		
Location:		Project No:	GTX-310152
Boring ID: B-1	Sample Type: jar	Tested By:	ckg
Sample ID: S-1	Test Date: 06/21/19	Checked By:	jsc
Depth : 0.0-0.8 ft	Test Id: 509935		

Test Comment: ---
Visual Description: Moist, dark yellowish brown silty sand with gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	34.4	40.9	24.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	92		
0.5 in	12.50	78		
0.375 in	9.50	75		
#4	4.75	66		
#10	2.00	58		
#20	0.85	50		
#40	0.42	39		
#60	0.25	32		
#100	0.15	28		
#140	0.11	26		
#200	0.075	25		

Coefficients

D_{85} = 15.3488 mm	D_{30} = 0.1880 mm
D_{60} = 2.5136 mm	D_{15} = N/A
D_{50} = 0.8907 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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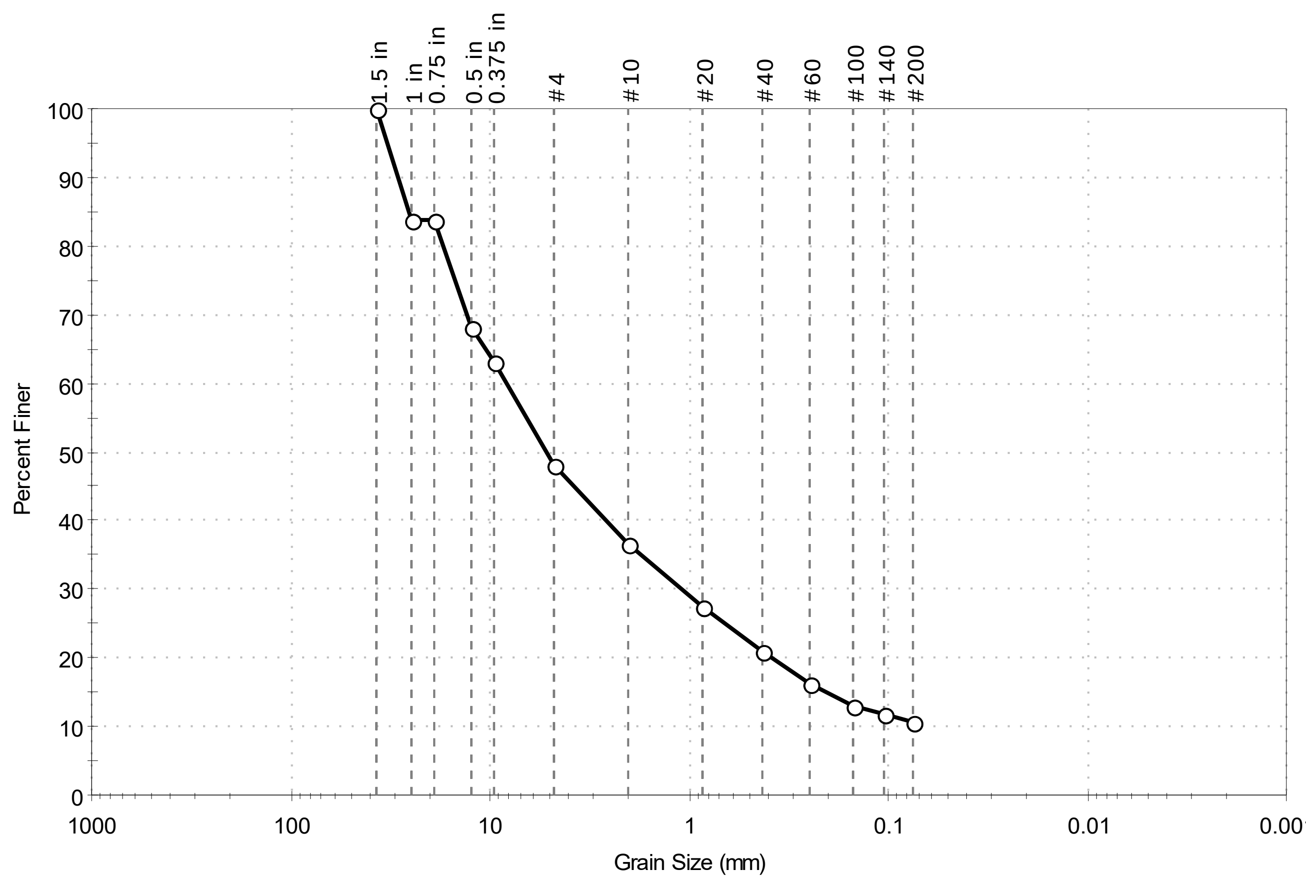
Client:	Wood Environmental & Infrastructure, Inc.		
Project:	USCG Eastport Site Develop		
Location:		Project No:	GTX-310152
Boring ID: B-2	Sample Type: jar	Tested By:	ckg
Sample ID: S-2 B	Test Date: 06/21/19	Checked By:	jsc
Depth : 2.4-3.3 ft	Test Id: 509936		

Test Comment: ---

Visual Description: Moist, dark yellowish brown gravel with silt and sand

Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	51.9	37.3	10.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	84		
0.75 in	19.00	84		
0.5 in	12.50	68		
0.375 in	9.50	63		
#4	4.75	48		
#10	2.00	37		
#20	0.85	27		
#40	0.42	21		
#60	0.25	16		
#100	0.15	13		
#140	0.11	12		
#200	0.075	11		

Coefficients

D_{85} = 25.7444 mm D_{30} = 1.0879 mm

D_{60} = 8.2594 mm D_{15} = 0.2053 mm

D_{50} = 5.1923 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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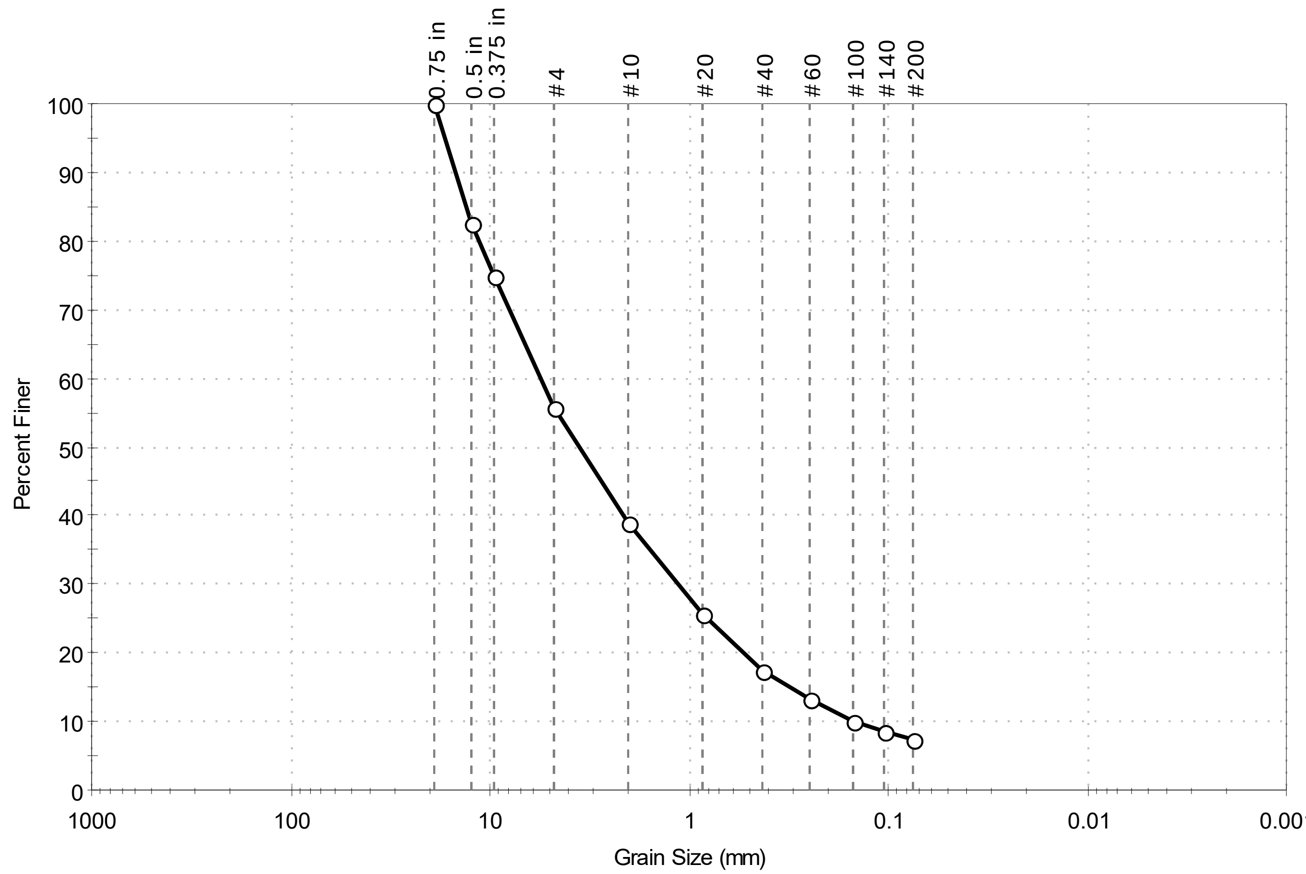
Client:	Wood Environmental & Infrastructure, Inc.		
Project:	USCG Eastport Site Develop		
Location:		Project No:	GTX-310152
Boring ID: B-3	Sample Type: jar	Tested By:	ckg
Sample ID: S-1 B	Test Date: 06/21/19	Checked By:	jsc
Depth : 0.5-1.0 ft	Test Id: 509937		

Test Comment: ---

Visual Description: Moist, dark yellowish brown sand with silt and gravel

Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	44.2	48.3	7.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	83		
0.375 in	9.50	75		
#4	4.75	56		
#10	2.00	39		
#20	0.85	26		
#40	0.42	18		
#60	0.25	13		
#100	0.15	10		
#140	0.11	9		
#200	0.075	7.5		

Coefficients

D_{85} = 13.2603 mm　D_{30} = 1.1185 mm

D_{60} = 5.5325 mm　D_{15} = 0.3133 mm

D_{50} = 3.5332 mm　D_{10} = 0.1459 mm

C_u = 37.920　C_c = 1.550

Classification

ASTM　N/A

AASHTO　Stone Fragments, Gravel and Sand (A-1-a (1))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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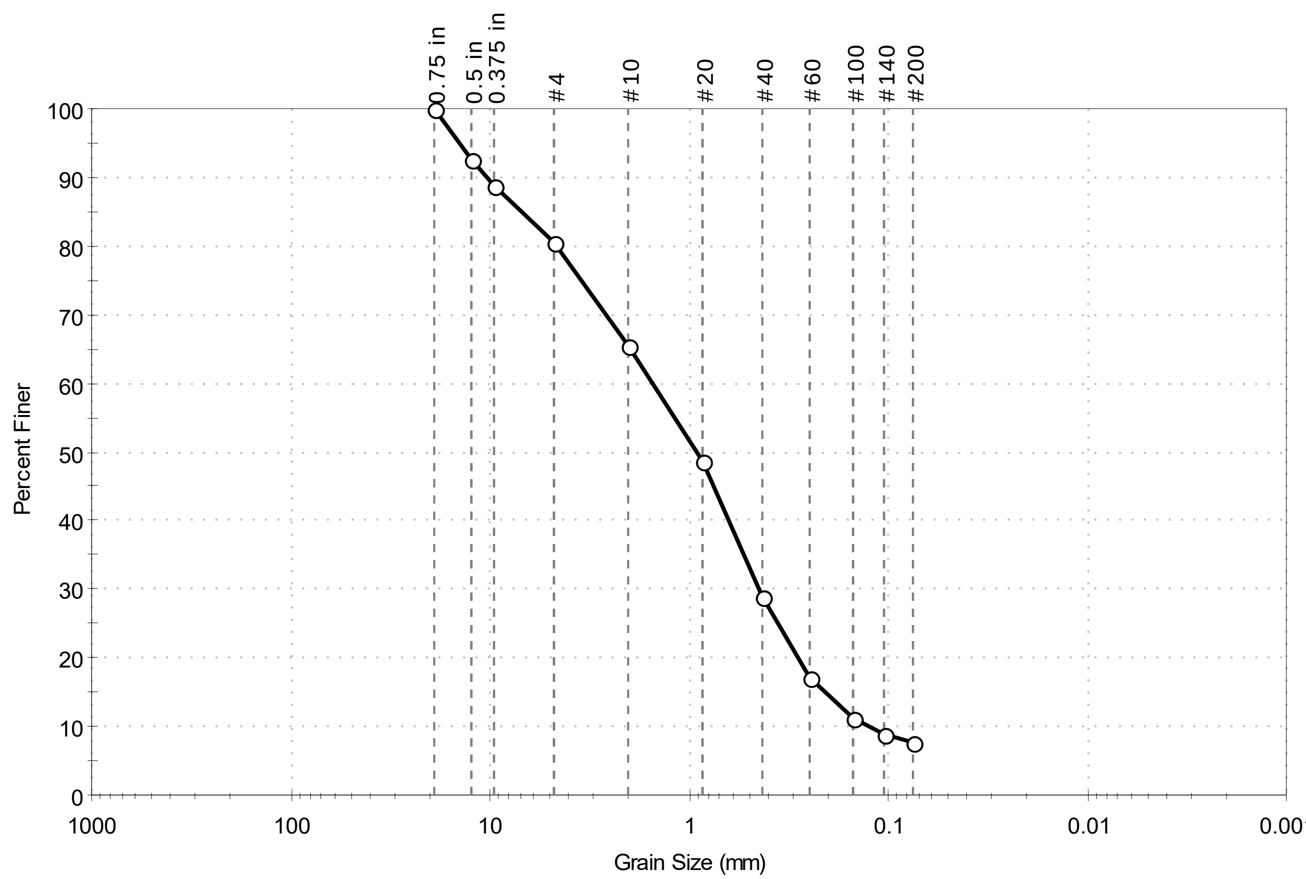
GeoTesting EXPRESS

Client:	Wood Environmental & Infrastructure, Inc.
Project:	USCG Eastport Site Develop
Location:	Project No: GTX-310152

Boring ID:	B-4	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1 B	Test Date:	06/21/19	Checked By:	jsc
Depth :	0.8-1.3 ft	Test Id:	509938		

Test Comment: ---
Visual Description: Moist, dark yellowish brown sand with silt and gravel
Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	19.6	72.9	7.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	93		
0.375 in	9.50	89		
#4	4.75	80		
#10	2.00	65		
#20	0.85	49		
#40	0.42	29		
#60	0.25	17		
#100	0.15	11		
#140	0.11	9		
#200	0.075	7.5		

Coefficients

D_{85} = 6.8874 mm　　D_{30} = 0.4400 mm
D_{60} = 1.5224 mm　　D_{15} = 0.2097 mm
D_{50} = 0.9157 mm　　D_{10} = 0.1256 mm
C_u = 12.121　　C_c = 1.012

Classification

ASTM　N/A

AASHTO　Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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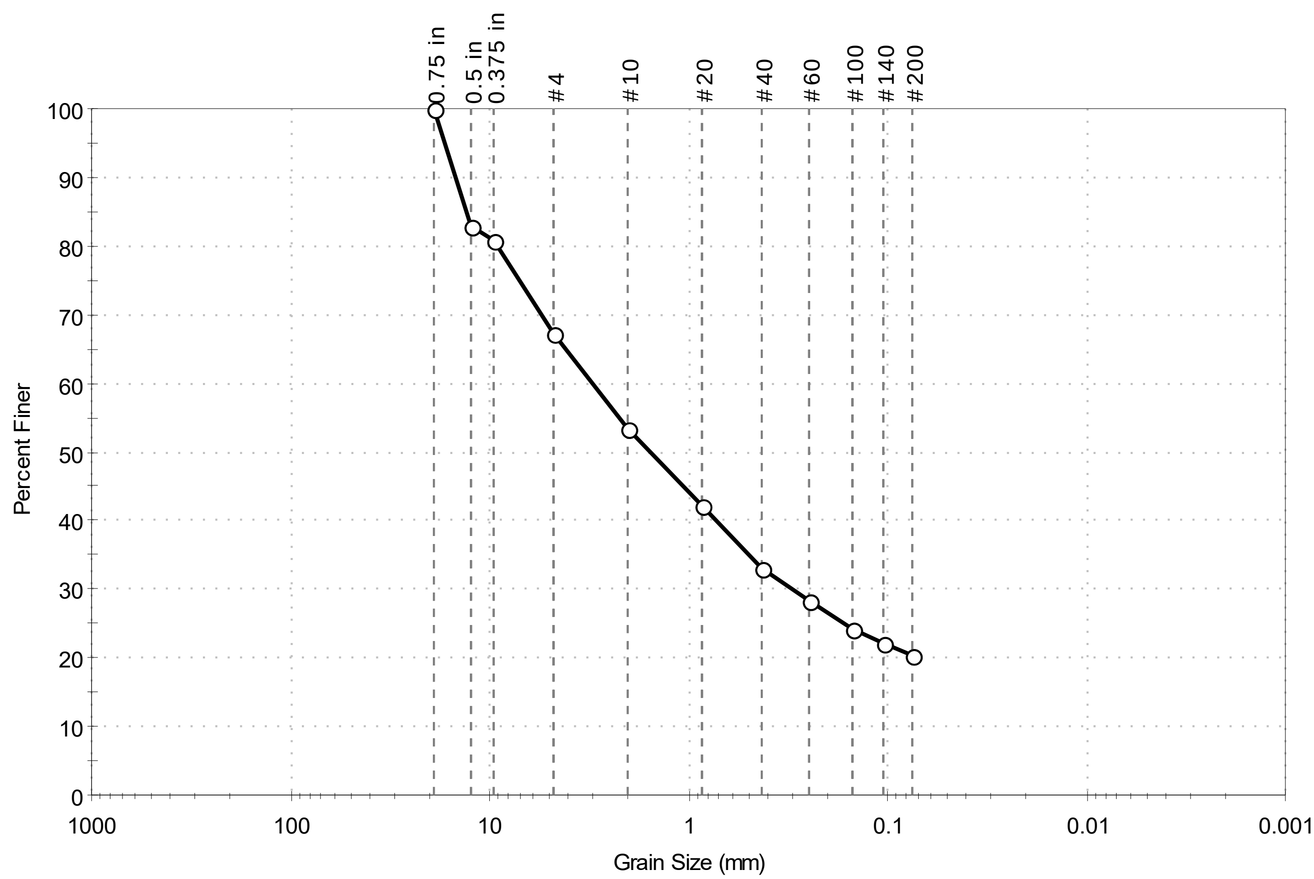
Client:	Wood Environmental & Infrastructure, Inc.		
Project:	USCG Eastport Site Develop		
Location:		Project No:	GTX-310152
Boring ID: B-4	Sample Type: jar	Tested By:	ckg
Sample ID: S-2	Test Date: 06/21/19	Checked By:	jsc
Depth : 2.4-3.1 ft	Test Id: 509939		

Test Comment: ---

Visual Description: Moist, dark yellowish brown silty sand with gravel

Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	32.7	46.9	20.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.75 in	19.00	100		
0.5 in	12.50	83		
0.375 in	9.50	81		
#4	4.75	67		
#10	2.00	53		
#20	0.85	42		
#40	0.42	33		
#60	0.25	28		
#100	0.15	24		
#140	0.11	22		
#200	0.075	20		

Coefficients

D_{85} = 13.1796 mm	D_{30} = 0.3042 mm
D_{60} = 3.0277 mm	D_{15} = N/A
D_{50} = 1.5460 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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GeoTesting EXPRESS

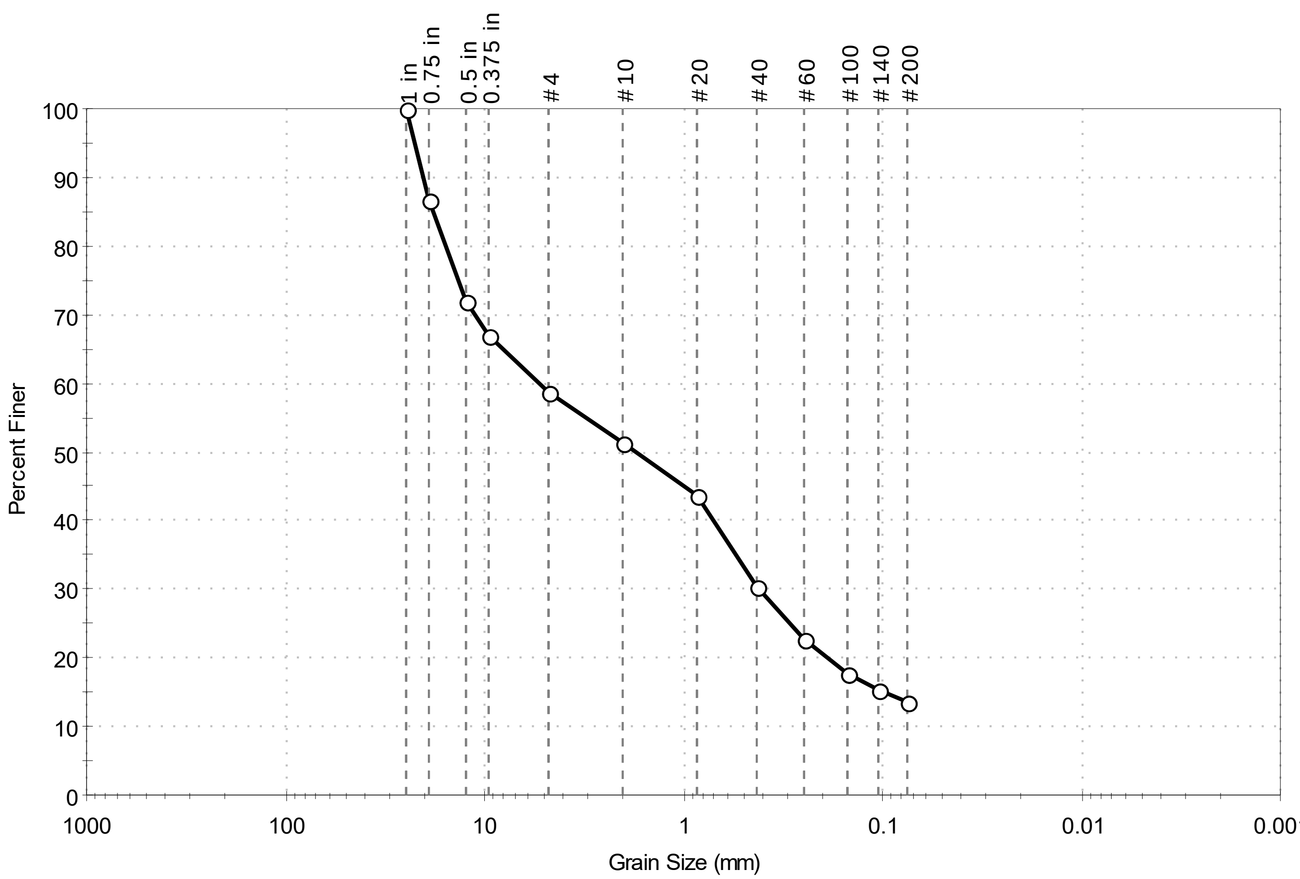
Client:	Wood Environmental & Infrastructure, Inc.				
Project:	USCG Eastport Site Develop				
Location:				Project No:	GTX-310152
Boring ID:	B-5	Sample Type:	jar	Tested By:	ckg
Sample ID:	S-1	Test Date:	06/21/19	Checked By:	jsc
Depth :	0.6-1 ft	Test Id:	509940		

Test Comment: ---

Visual Description: Moist, dark yellowish brown silty sand with gravel

Sample Comment: ---

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	41.3	45.0	13.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	87		
0.5 in	12.50	72		
0.375 in	9.50	67		
#4	4.75	59		
#10	2.00	51		
#20	0.85	44		
#40	0.42	30		
#60	0.25	23		
#100	0.15	18		
#140	0.11	15		
#200	0.075	14		

Coefficients

D_{85} = 18.1161 mm | D_{30} = 0.4120 mm

D_{60} = 5.3199 mm | D_{15} = 0.0979 mm

D_{50} = 1.7215 mm | D_{10} = N/A

C_u = N/A | C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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APPENDIX E

Supplemental Groundwater Evaluation Report

FINAL
U.S. COAST GUARD EASTPORT HOUSING SITE DEVELOPMENT SUPPLEMENTAL GROUNDWATER EVALUATION REPORT

CONTRACT NUMBER: 70Z05018DAMFWHD02
Task Order 70Z04719FPEPTEV00

Prepared For:

U.S. Coast Guard

Prepared By:

Amec Foster Wheeler HDR
JOINT VENTURE

JULY 16, 2020

FINAL
U.S. COAST GUARD EASTPORT HOUSING SITE DEVELOPMENT
SUPPLEMENTAL GROUNDWATER EVALUATION
REPORT

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Prepared By:

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JOINT VENTURE

Project Number: 335000007

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

bgs	Below Ground Surface
CMR	Code of Maine Regulations
gpm	Gallons Per Minute
MCL	Maximum Contaminant Level
µg/L	Micrograms Per Liter
OW	Observation Well
USCG	United States Coast Guard
USEPA	United States Environmental Agency

1.0 INTRODUCTION

The Amec Foster Wheeler HDR Joint Venture (JV) has been retained by the U.S. Coast Guard (USCG) to provide architectural and engineering services to evaluate site conditions and prepare National Environmental Policy Act documentation for developing several single family houses or duplexes, a maintenance building, a community building and associated infrastructure for USCG Station Eastport, on a 75-acre parcel in Perry, Maine (**Figure 1**). This Report presents a summary of a supplemental groundwater evaluation undertaken to assess the effects of the pumping of groundwater in the area of the proposed development and surrounding areas.

2.0 SCOPE OF WORK

Amec Foster Wheeler HDR JV expanded upon the initial groundwater supply study for the proposed development to further assess impacts of long-term pumping of groundwater to supply the proposed family housing units. The purpose of this additional study was to further evaluate potential impacts to property abutters in terms of both groundwater elevations and the potential to impact arsenic levels in the abutter's groundwater wells.

Shannon Water Well Drilling, located in Machias, Maine was contracted to drill and test the wells. Shannon Water Well Drilling is a Maine licensed well driller (License # WDC0144). Chris Getchell was the water well driller and Jerry Rawcliffe, Amec Foster Wheeler HDR JV geologist, provided drilling oversight. Aquifer testing, logging, and sampling and analysis of groundwater was conducted by Amec Foster Wheeler HDR JV personnel.

Observation Well Installation

Two new observation wells (OW-1 and OW-2) were installed at the site (**Figure 1**) on May 4 and 5, 2020. At each location, a steel casing (6-inch diameter) was advanced approximately 38.5 feet through four to seven feet of overburden soils and into bedrock. Boring logs for the two observation wells are presented in **Appendix A**. The casing installation sealed off the overburden and the top of the weathered bedrock and protected the bedrock aquifer from surface infiltration. Following the casing installation, air hammer drilling techniques were used to advance a 5 7/8 - inch borehole to depths of approximately 201.5 feet below ground surface (bgs). As the boreholes were advanced and water bearing fractures were encountered, preliminary yield tests were performed by using air to blow water from the boreholes and estimate the yield of the boring in gallons per minute using a one gallon container and a stopwatch. The yield from OW-1 was estimated to be 12 to 15 gallons per minute (gpm) at 120 feet bgs and approximately 20 gpm at the terminal depth of 201.5 feet bgs. OW-2 was observed to yield 7 to 8 gpm at 120 bgs and approximately 12 gpm at the terminal depth of 201.6 feet bgs. Upon completion of OW-2, artesian flow was observed from the borehole at 1.9 feet above ground surface. These flow rates were greater than values provided in the Maine Well Drillers and Pump Installers Rules (Code of Maine Regulations [CMR] Chapter 232) for establishing minimum yields for single family homes as shown in **Table 1** below:

Table 1
Recommended Minimum Groundwater Recovery Rates

Well Depth (Feet)	Recovery rates (gpm)
75	5
110	4
160	3
250	2
320	1
420	1/2

Note: Recommended minimum recovery rates for single-family homes are based on a static water level of approximately 25 feet below ground surface. (Maine CMR Chapter 232).

Pumping Tests

Following completion of the observation wells OW-1 and OW-2, a 72- hour pumping test was conducted from May 11 to May 15, 2020. The objective of the pumping test was to assess if groundwater demand from the proposed new housing would be sustainable and to evaluate potential effects on groundwater levels and arsenic concentrations in the existing residential supply wells of abutting properties.

A total of approximately 16,300 gallons was produced from the three pumping wells during the 68-hour pumping phase of the test. This volume (5,750 gallons per day) can be compared to the 2,160 gallons per day of anticipated water use for eight single family homes. The higher pumping rates maintained over the three day test produced a volume of water 2.7 times greater than that to be used by the development over the same time-period. As designed and implemented, the test imposed a hydraulic stress that exceeded what would be expected from the development, allowing for a conservative estimate of potential impacts to abutting properties.

During the test, Amec Foster Wheeler HDR JV monitored groundwater levels, pumping rates and collected groundwater samples to evaluate arsenic concentrations in several on site drilled wells. Three existing wells (E-1, E-2, and MW-2) were used as pumping wells, with the pumping rates based upon the maximum amount of water expected to be used by up to eight single family homes with 420 foot deep wells. As shown in **Table 1**, recovery rates of ½ gpm are sufficient for a residential well of this depth (with static water levels at or above 25 feet below ground surface). Eight wells would require a total of 4 gpm recovery rate. However, typical daily residential well groundwater usage is variable over 24 hours, with peak demand in the mornings and evenings and negligible (daytime) or none at other times (late night to morning). During this test, wells were pumped continuously for 24 hours for nearly 3 days removing more water than would be expected under normal living conditions for eight single family homes. The testing confirmed that the site can support well yields specified in **Table 1** for a 420 foot deep well.

The pumps were started on May 12, 2020 with E-1 (powered by the electric service from the existing house) turned on at 09:51, and E-2 and MW-2 (powered by a generator) turned on at 09:56. The total combined pumping rate from all three wells ranged from 3.8 to 4.3 gpm and is shown in the field data record for the pumping test (**Appendix B**).

Water levels and pumping rates were measured manually by the field crew on an hourly basis throughout the pumping test using water level meters, graduated 5 - gallon buckets and a stopwatch. Pumping rates could be adjusted at the wellhead using ball valves to adjust flow rates. Pressure transducers were installed in the four observation wells (OW-1, OW-2, MW-1, and MW-3) to continuously record water level data at 2 minute intervals starting before the pumps were turned on and ending approximately 5 hours after the pumps were turned off on May 15, 2020 06:04.

Groundwater Sampling and Analysis

This groundwater study included the collection of water samples for laboratory analysis of arsenic to evaluate the effects of pumping on arsenic concentrations in the bedrock aquifer. Three rounds of samples were collected from all seven on-site wells (new and existing). One sample round was collected at the beginning of the pumping test, with peristaltic (Geopumps) pumps used to collect samples from MW-1, MW-3, and OW-1. Approximately 5 gallons was purged and samples were grabbed from each of these three wells prior to starting the pumping test. OW-2 had been flowing under artesian conditions since it was installed, and a grab sample was collected from the flow from the borehole before the pumping test was started. Grab samples were collected from the discharge lines of each of the pumping wells E-1, E-2, and MW-2 shortly after pumping test was started. A second round of samples were collected at the approximate mid-point of the pumping test Wednesday evening May 13, 2020 19:20 to 20:30. The methods used to collect the second round of samples was similar to the methods used in the initial sample collection round, although much less water was purged with the peristaltic pumps from MW-1, MW-3 and OW-1 to avoid influencing drawdown in the wells. A third round of samples were collected at the end of the pumping test using similar sampling methods. A total of 21 samples and 2 duplicates were collected and submitted to Katahdin Analytical Laboratory, Scarborough, Maine, a Maine-certified laboratory. **Table 2** presents a summary of the three rounds of groundwater samples collected. Samples were analyzed for Arsenic by United States Environmental Protection Agency (USEPA) method 200.7.

3.0 RESULTS

The following sections discuss the results of the pumping test and the groundwater analyses with respect to the potential impacts of long-term pumping on groundwater elevations and arsenic concentrations in abutters water supply wells.

Pumping Test Results

The results of the 72 hour pumping test are presented on **Figure 2**, with supporting tabulated water level and pumping rate data provided in **Appendix B** and graphical data presented in **Appendix C**. The conceptual housing development layout shown on **Figure 2** shows seven single family homes and a community center. This conceptual layout was outlined in Site Evaluation Report (Amec Foster Wheeler HDR JV, 2019), based on USCG housing objectives and site constraints. The USCG's current plan for the project is for 8 single family homes, and no community center. This represents a very similar water demand to the original concept.

Figure 2 presents the observed maximum drawdown from static water levels measured in the pumping and observation wells after 68 hours of pumping. As noted above, a total of approximately 16,300 gallons was produced from the three pumping wells during the 68-hour pumping phase of the test. This volume (5,750 gallons per day) can be compared to the 2,160 gallons per day of anticipated water use for eight single family homes. To summarize, the pumping test produced a volume of water 2.7 times greater than that which might be used by the development over the same time-period.

The greatest drawdown was observed at Pumping Well E-2 (74.8 feet), with more moderate drawdowns at Pumping Well E-1 (20.8 feet) and Pumping Well MW-2 (18.7 feet). While the pumping rates at these wells were similar, the difference in observed drawdown is typical for drilled bedrock wells in Maine, which can vary widely over short distances depending on the number and yield of water bearing fractures encountered. Drawdown at Observation Wells was far smaller (as expected), ranging from 5.1 feet at MW-3, to 3.6 feet at MW-1, to 1.1 feet at OW-1 located north of the pumping wells.

Appendix C provides graphs of water level drawdown vs. time at each of the pumping and monitoring wells. Because artesian flow remained throughout the test at OW-2, no graph was prepared for this well. The graphs confirm that drawdown at all three wells had largely stabilized by the end of the pumping test, and that there was rapid recovery at each well following pump shut down as was measured in 2019.

Best professional judgement was used to draw the maximum drawdown contours, considering observed maximum water level drawdown from the static level at each well near the end of the pumping test. Based on the contouring efforts shown on **Figure 2**, the 1-foot drawdown contour extends outward from pumping wells about 80 to 120 feet to the north, and about 120 feet to the south. These observed drawdowns, and the rapid decrease of drawdown with distance from the pumping wells, indicate negligible drawdown (from both the pumping test and from the development) would be expected at the nearest residence north of the site (approximately 400 and 500 feet from existing pumping wells E-1 and E-2). Similarly, negligible drawdown would be expected at the nearest residence to the south (more than 900 feet from pumping well MW-2. As noted above, these conditions represent nearly three days of pumping and a total volume of pumped water 2.7 times greater than the water use expected from eight single family homes over the same time period. Our assessment assumes there would be normal water use at both the project site and abutting properties, and that the future development water supply wells would be in the approximate locations shown on **Figure 2**. Based on these conditions, adverse water level impacts to abutting property water supply wells is not anticipated.

Observation well OW-2 was properly abandoned and permanently sealed on July 8, 2020 by Shannon Well drilling to eliminate the flowing well (artesian) condition that was present when the hole was drilled and tested during the spring. When the well abandonment occurred, the water level had dropped to approximately 2 feet bgs. The well casing was cut to a foot bgs and bentonite pellets were dropped in the well, up to the top of casing. The well required 40 bags of hole plug bentonite to seal to ground surface. Photo documentation is provided in **Appendix E**.

Groundwater Analytical Results

The groundwater analytical results for arsenic are presented in **Table 3** and include results from samples collected in June 2019 as well as the three rounds of samples collected during the pumping test**.** The Laboratory report is provided on CD in **Appendix D**.

Arsenic exceeded the USEPA Maximum Contaminant Level (MCL) of 10 Micrograms Per Liter µg/L in 25 of 27 samples. Arsenic is naturally present in Maine bedrock groundwater and is typically detected in the range of concentrations reported from the wells at the site (3.8 to 55 µg/L).

The effects of pumping and drawdown on arsenic concentrations in the pumping and observation wells showed no clear trend. In comparing the initial samples to the midpoint samples, 4 wells showed increases in arsenic concentrations and 3 showed decreases in concentration. In comparing the midpoint samples to the final samples 6 wells showed increases and 1 showed decreases in arsenic concentrations. Most of the changes in concentration were slight, particularly when comparing the midpoint sample to the final samples.

- Pumping well EW-1 initially showed arsenic concentrations below the MCL (3.8 µg/L). Subsequent samples collected after approximately 33 hours and 68 hours showed concentrations increased to slightly above the MCL (11 and 13 µg/L respectively).
- Pumping well EW-2 showed initial arsenic concentrations of 54.5 µg/L. Subsequent samples showed a decrease in arsenic concentrations after pumping (41.2 and 43.2 µg/L respectively).
- Pumping well MW-2 showed initial concentrations slightly exceeding the MCL with subsequent samples showing an increase in arsenic concentrations (22.5 and 25.7µg/L respectively).
- Observation wells MW-1, MW-3, and OW-2 showed arsenic concentrations above MCLs but generally stable over the course of the pumping test.
- Observation well OW-1 showed arsenic concentrations above the MCL but declining from initial concentrations over the course of the pumping test.

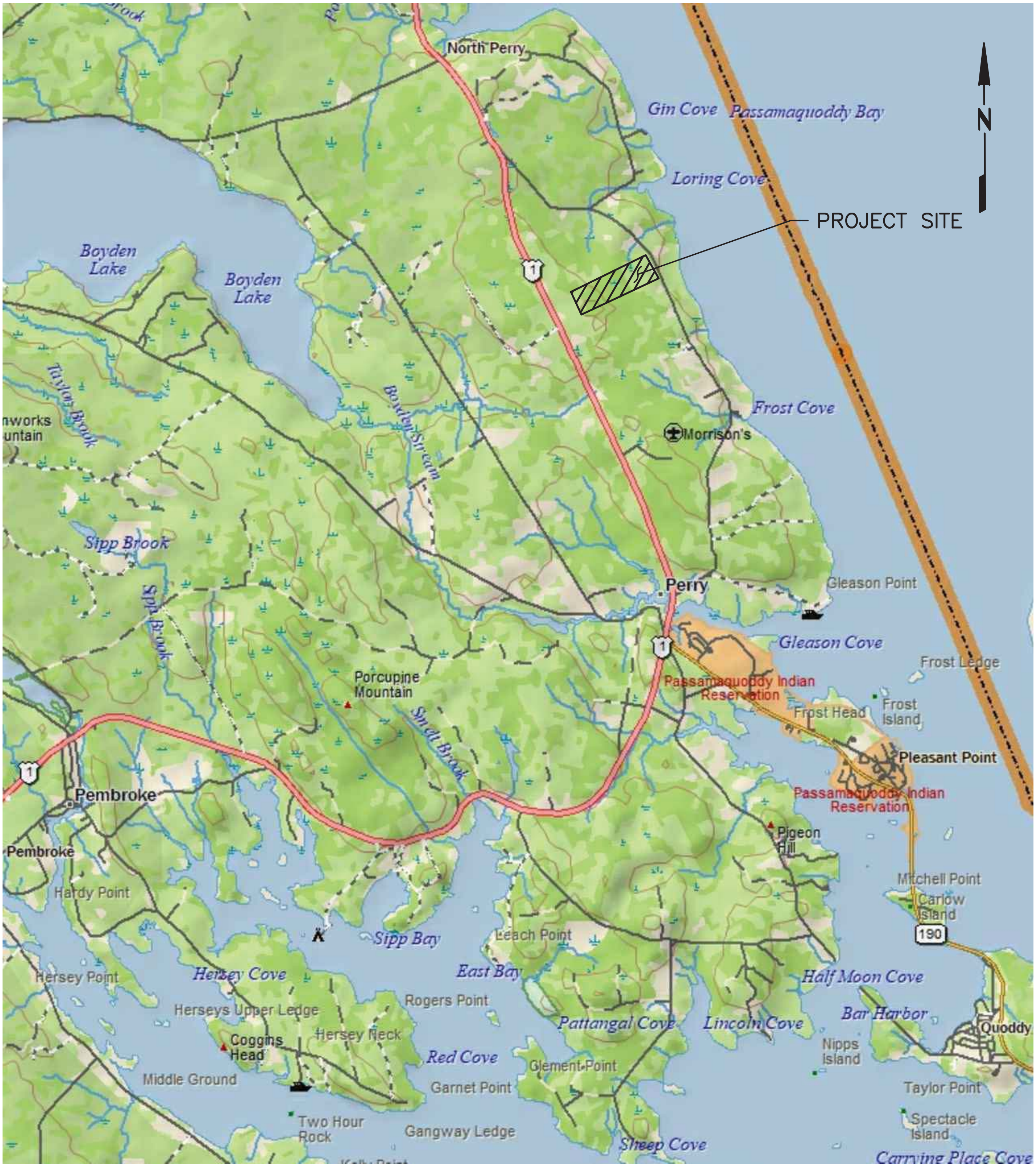
Based on the results of testing at this site and the absence of water level impacts beyond the property boundaries, we do not expect pumping wells at the developed site to adversely change arsenic concentration at existing neighboring wells.

As recommended in the 2019 Site Evaluation Report, the housing units should be outfitted with treatment systems to remove arsenic, iron and manganese. Residential water treatment systems that are available from water treatment companies to reduce arsenic levels below MCL include reverse osmosis and ion exchange.

4.0 REFERENCES

U.S. Coast Guard Eastport Housing Final Site Evaluation Report, Amec Foster Wheeler HDR JV, August 12, 2019.

FIGURES



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Prepared/Date: WJW 6/04/20
Checked/Date: CRH 6/04/20

USCG 576 Shore Road Perry, Maine	Amec Foster Wheeler HDR JOINT VENTURE	LOCATION MAP Eastport Housing Site Development Project 3350-00-007 Figure 1

C:\Users\william.whitten\OneDrive – Wood PLC\Projects\USCG– COAST GUARD\Perry Maine\8.0 Drawings\Figures\SWP\Figure 1 – Locus.dwg Thu, 04 Jun 2020 – 6:53am william.whitten


EXISTING STRUCTURES (TYP)
OLD FARM POND
75-FT WETLAND SETBACK (TYP)
EXISTING WATER SUPPLY WELL #2
3-BEDROOM UNIT (TYP)
FUTURE DEVELOPMENT WATER SUPPLY WELL (APPROXIMATE LOCATION) (TYP)
RIGHT OF WAY TO REMAINING LAND
COMMUNITY BUILDING
MAINTENANCE BUILDING
FRESHWATER FORRESTED/SHRUB WETLAND (TYP)
4-BEDROOM UNIT (TYP)
POSSIBLE PROPERTY LINES (TYP)
APPROX. LOCATION EXISTING STREAM(TYP)
PUMPING WELL (TYP)
EXISTING TREELINE (TYP)
EXISTING TREES (TYP)
EXISTING WATER SUPPLY WELL #1
EXISTING CULVERT (TYP)
EXISTING GRAVEL DRIVE
POSSIBLE LEACH FIELD LOCATION (TYP)
Shore Road
OW-1 (1.1)
OW-2 (0.0)
E-2 (74.8)
E-1 (20.8)
MW-1 (3.6)
MW-2 (18.7)
MW-3 (5.1)
VICINITY MAP
Gin Cove Road
River Road - Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
EXISTING STRUCTURES
OLD FARM POND
EXISTING STREAM
SHED
WOOD FURNACE
EXISTING TREE (TYP)
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING HOUSE
EXISTING BUILDING
EXISTING BUILDINGS (TYP)
LEGEND
OW-2 APPROXIMATE LOCATION OBSERVATION WELL
MW-1 EXISTING MONITORING WELL
FUTURE DEVELOPMENT WATER SUPPLY WELL (APPROXIMATE)
E-1 EXISTING WATER SUPPLY WELL
E-1 (20.8) PUMPING WELL AND OBSERVED DRAWDOWN FROM STATIC WATER LEVEL
5 INTERPRETED CONTOUR OF OBSERVED DRAWDOWN FROM STATIC WATER LEVEL
0 50 100 200
SCALE IN FEET
Prepared/Date: WJW 6/10/20
Checked/Date: PSB 6/10/20
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Fig. 2 - Pumping and Observation Wells

TABLES

Table 2
Summary of Groundwater Sample Collection 2020

U.S. Coast Guard Eastport Housing
Supplemental Groundwater Evaluation Report

Sample Identification	Sample Date Time		Comments
Preliminary Samples			
USCGOW-1	5/12/2020	8:30	Purged 5 gallons with Geopump.
USCGOW-2	5/12/2020	7:50	Grab from artesian flow
USCGEW-1	5/12/2020	10:20	Grab from pumping discharge
USCGEW-2	5/12/2020	10:40	Grab from pumping discharge
USCGMW-1	5/12/2020	9:15	Purged 5 gallons with Geopump.
USCGMW-2	5/12/2020	10:45	Grab from pumping discharge
USCGMW-3	5/12/2020	9:03	Purged 5 gallons with Geopump.
Mid-Test Samples			
USCGOW-1B	5/13/2020	19:10	Purged approximately 1 gallon with Geopump
USCGOW-2B	5/13/2020	19:45	Grab from artesian flow
USCGEW-1B	5/13/2020	20:10	Grab from pumping discharge
USCGEW-2B	5/13/2020	20:20	Grab from pumping discharge
USCGMW-1B	5/13/2020	19:40	Purged approximately 1 gallon with Geopump
USCGMW-2B	5/13/2020	20:30	Grab from pumping discharge
USCGMW-3B	5/13/2020	19:20	Purged approximately 1 gallon with Geopump
USCGEW-1BD	5/13/2020	20:10	Grab from pumping discharge, duplicate sample collected.
Post Pumping Samples			
USCGOW-1C	5/15/2020	11:05	Purged approximately 1 gallon with Geopump
USCGOW-2C	5/15/2020	9:05	Grab from artesian flow
USCGEW-1C	5/15/2020	5:45	Grab from pumping discharge
USCGEW-2C	5/15/2020	5:50	Grab from pumping discharge
USCGMW-1C	5/15/2020	11:10	Purged approximately 1 gallon with Geopump
USCGMW-2C	5/15/2020	5:55	Grab from pumping discharge
USCGMW-3C	5/15/2020	11:20	Purged approximately 1 gallon with Geopump
USCGMW-2CD	5/15/2020	5:55	Grab from pumping discharge, duplicate sample collected.

Table 3
Groundwater Analytical Results - Arsenic

U.S. Coast Guard Eastport Housing
Supplemental Groundwater Evaluation Report

Sample Identification	Analytical Result	Units	Drawdown	Comments
Pumping Wells				
EW-1	**46**	ug/L	Unknown	Sample collected 6/12/2019
USCG EW-1	**3.8 J**	ug/L	0	Initial sample
USCG EW-1B	**11**	ug/L	14.97	Pumping Test Midpoint sample
USCG EW-1BD	**10**	ug/L	14.97	Pumping Test Midpoint sample, Duplicate
USCG EW-1C	**13**	ug/L	20.76	End of Test Sample
USCG EW-2	**54.5**	ug/L	0	Initial sample
USCG EW-2B	**41.2**	ug/L	62.85	Pumping Test Midpoint sample
USCG EW-2C	**43.2**	ug/L	74.81	End of Test Sample
MW-2	**16.5**	ug/L	Unknown	Sample collected 6/12/2019
USCG MW-2	**12**	ug/L	0	Initial sample
USCG MW-2B	**22.5**	ug/L	15.91	Pumping Test Midpoint sample
USCG MW-2C	**25.7**	ug/L	18.65	End of Test Sample
USCG MW-2CD	**27.9**	ug/L	18.65	End of Test Sample, Duplicate
Observation Wells				
MW-1	**8.4**	ug/L	Unknown	Sample collected 6/12/2019
USCG MW-1	**41.7**	ug/L	0	Initial sample
USCG MW-1B	**45.8**	ug/L	2.72	Pumping Test Midpoint sample
USCG MW-1C	**45.2**	ug/L	3.6	End of Test Sample
MW-3	**29**	ug/L	Unknown	Sample collected 6/12/2019
USCG MW-3	**18.5**	ug/L	0	Initial sample
USCG MW-3B	**17.2**	ug/L	4.2	Pumping Test Midpoint sample
USCG MW-3C	**19.2**	ug/L	5.05	End of Test Sample
USCG OW-1	**36.8**	ug/L	0	Initial sample
USCG OW-1B	**25.7**	ug/L	0.72	Pumping Test Midpoint sample
USCG OW-1C	**29.1**	ug/L	1.07	End of Test Sample
USCG OW-2	**36.4**	ug/L	0	Initial sample
USCG OW-2B	**37.2**	ug/L	0	Pumping Test Midpoint sample
USCG OW-2C	**37.5**	ug/L	0	End of Test Sample

Notes:

MECDC Groundwater Criteria - Adopted USEPA MCL in March 2018 - Arsenic = 10 ug/L.

Bold Indicates Analyte Detected

Bold and Highlighted cells indicate an exceedance of applicable standards

ug/L = micrograms per liter

Qualifier

J = estimated value

APPENDIX A

BORING LOGS

SOIL BORING LOG

wood.

511 Congress Street, Portland Maine 04101

Project Name: USCG Housing Eastport		Boring ID: OW-~~2~~ 1
Project Location: Perry, ME		Page No. 1 (90)
Project No.: 3350000007.002	Client: USCG	of 2
Boring Location: 576 Shore Rd Perry ME	Refusal Depth: NA	Total Depth: 201.5' BGS	Bore Hole ID/OD: 6"
Weather: Partly sunny, 45-50°F, calm	Soil Drilled: 5'	Method: Air Hammer	Casing Size: 6" ID
Subcontractor: Shannon Drilling		Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 5/4/20	Date Completed: 5/5/20	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe	Checked By:	
Reference Elevation: TBD	Water Level: 5.44 TOC/4' BGS	Time: 5/5/20 1100	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	PID Field Scan	Lab Tests Performed	Sample Description and Classification	USCS Group Symbol	Remarks
	NA	NA	NA	NA	Encountered bedrock at ≈5' BGS.	NA	1350
10					Reddish brown conglomerate		
20							
30					Installed 40' of 6" ID Steel casing to ≈ 38.5' BGS.		
40							1415
50							
60					No significant flow from borehole.		1445
70					Change to gray material at ≈ 70'		
80					Flow from borehole ≈ 3-5 GPM		1450
90							
100							1510
110							
120					Flow from borehole ≈ 12-15 GPM		1520
130					125-130 Rock changes back to reddish brown.		
140							1540
150							
160							1550

NOTES: Well located at wood line north of existing house (≈100')

SOIL BORING LOG

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing Eastport	Boring ID: OW-21
	Project Location: Perry, ME	Page No: 2 (80)
	Project No.: 335000007/002 Client: USCG	of: 2
Boring Location: 576 Shore Rd. Perry ME	Refusal Depth: N/A Total Depth: 201.5' BGS	Bore Hole ID/OD: 6"
Weather: Partly sunny w/showers 45-50° F	Soil Drilled: 5' Method: Air Hammer	Casing Size: 6" ID
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: N/A
Driller: Chris Getchell	Date Started: 5/4/20 Date Completed: 5/5/20	Sampler ID/OD: N/A
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rawcliffe Checked By:	
Reference Elevation: TBD	Water Level 5.49' TOC/≈4' BGS Time: 5/5/20 1100	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	PID Field Scan	Lab Tests Performed	Sample Description and Classification	USCS Group Symbol	Remarks
170	N/A	N/A	N/A	N/A	165' Rock is brown to grayish brown 170 Rock is reddish brown	N/A	
180							1600
190							
200					Flow from borehole ≈20 GPM. (Large potential error at this flow rate)		1610
210					Bottom of borehole = 201.5' BGS		
					Well measurements 5/5/20 GW to TOC = 5.49' BOW to TOC = 203.0' Stick up on casing = 1.5' AGS		

NOTES: Well located at wood line north of existing house (≈100')

SOIL BORING LOG

wood. 511 Congress Street, Portland Maine 04101	Project Name: USCG Housing - Eastport	Boring ID: OW-2
	Project Location: Perry Maine	Page No: 1
	Project No: 3350200?7.002 Client: USCG	of: 2
Boring Location: 576 Shore Rd Perry ME	Refusal Depth: NA / Total Depth: 206'	Bore Hole ID/OD: 6"
Weather: Overcast, 45-50°F, calm	Soil Drilled: 7' / Method: Air Hammer	Casing Size: 6" ID
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: NA
Driller: Chris Getchell	Date Started: 5/4/20 / Date Completed: 5/4/20	Sampler ID/OD: NA
Rig Type/Model: ?Rig Pneumatic	Logged By: J. Rumcliffe / Checked By:	
Reference Elevation: TBD	Water Level: 21.9' TOC / Time: 5/5/20 1120	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	PID Field Scan	Lab Tests Performed	Sample Description and Classification	USCS Group Symbol	Remarks
10	NA	NA	NA	NA	Encountered bedrock at 5-7' BGS.	NA	1000
20					Reddish brown conglomerate.		
30							
40					Installed 40' of 6" ID Steel casing. to ≈ 38.1' BGS.		1035
50							
60					No significant flow from borehole		1110
70							
80					Encountered some flow from borehole at 75-80' BGS (est 4-6 GPM)		1115
90					More flow from 80-85' BGS		
100					Change to gray conglomerate material at ≈ 90'		1125
110							
120					Checked flow from borehole ≈ 7-8 GPM		1140
130							
140					Change back to reddish brown conglomerate at ≈ 130' BGS		1200
150							
160							1210

NOTES: Well located in field SE corner of property ≈ 100' from Shore Road.

SOIL BORING LOG

wood.

511 Congress Street, Portland Maine 04101

Project Name: USCG Eastport Housing		Boring ID: OW-2
Project Location: Perry, Maine		Page No 2
Project No.: 3350000 7.002	Client: USCG	of 2
Boring Location: 576 Shore Rd, Perry Me	Refusal Depth: N/A / Total Depth: 201.6' bgs	Bore Hole ID/OD: 6"
Weather: Overcast, 50° F Calm	Soil Drilled: 7' / Method: Air Hammer	Casing Size: 6" ID
Subcontractor: Shannon Drilling	Protection Level: D	Sampler: N/A
Driller: Chris Getchell	Date Started: 5/4/20 / Date Completed: 5/4/20	Sampler ID/OD: NA
Rig Type/Model: Chicago Pneumatic	Logged By: J. Rumbaugh / Checked By:	
Reference Elevation: TBD	Water Level: 7.4' bgs / Time: 5/5/20 1120	

Depth (feet bgs)	Sample Number	Penetration/ Recovery (feet)	PID Field Scan	Lab Tests Performed	Sample Description and Classification	USCS Group Symbol	Remarks
170					Reddish brown conglomerate		
180							1220
190							**
200					Flow at 200' = 12 GPM Bottom of boring = ~~200' BGS~~ 201.6' BGS		1230
					Well measurements 5/5/20 GW to TOC = 0 (artesian) BOW to TOC = 203.5' Stickup on casing = 1.9' AGS		

NOTES: Well located in field, SE corner of property, ~100' off Shore Road

APPENDIX B

PUMPING TEST FIELD DATA RECORD

Pumping Test Data Record

USCG Easport Housing Project, 576 Shore Road, Perry, ME 04667

		Observation Wells				Pumping Wells					
		OW-1	OW-2	MW-1	MW-3	E-1	E-2	MW-2	Pumping Rate		
Date	Time	Water Level (ft TOC)							E-1	E-2	MW-2
5/12/2020	7:05	4.55	0	2.94	12.49	7.96	14.53	1.93			
	9:26	4.54	0	3.41	12.61	8	15.74	1.96			
	9:51								Start E-1		
	9:56									Start E-2	Start MW-2
	9:56									1.6	
	10:01						21.95			1.45	
	10:05						24.41	7.02		1.5	1.5
	10:08					10.68			1		
	10:11							*9.5*			1.4
	10:16						29.4	*10*		1.2	NM
	10:19					12.49			1.25		
	10:25					13.63			1.25		
	10:28						33.35			1.2	
	10:37					14.86			1.25		
	10:45					15.31			1.25		
	10:46						38.04			1.2	
	10:52							10.08			1.25
	11:00					16.03			1.25		
	11:04	4.68									
	11:09						41.23			1.2	
	11:11				12.74						
	11:15							10.4			1.2
	11:18			3.23							
	11:20		0								
	11:07						42.05			1.2	
	11:26						45.38			1.15	
	11:30					17.25			1.25		
	11:38						47.62			1.4	
	11:42							10.85			1.2
	11:46							11.3			1.5
	12:00					17.95			1.25		
	12:04	4.76									
	12:09						50.45			1.25	
	12:11				13.02						
	12:15							12.33			1.4
	12:18			3.48							
	12:20		0								
	13:00					19.01			1.25		
	13:04	4.83									
	13:09						56.02			1.4	
	13:11				13.36						

	13:15							12.43			1.4
	13:18			3.71							
	13:20		0								
	14:00					20.58			1.2		
	14:04	4.89									
	14:09						59.02			1.25	
	14:11				13.67						
	14:15							12.65			1.3
	14:18			3.89							
	14:20		0								
	15:00					21			1.25		
	15:04	4.86									
	15:09						61.98			1.25	
	15:11				13.87						
	15:15							12.92			1.25
	15:18			4.01							
	15:20		0								
	16:01					21.22			1.25		
	16:05	4.88									
	16:10						64.02			1.25	
	16:13				14.12						
	16:15							13.17			1.25
	16:19			4.14							
	16:23		0								
	17:05					21.38			1.2		
	17:08	4.91									
	17:16						65.88			1.2	
	17:18				14.38						
	17:23							13.41			1.25
	17:26			4.26							
	17:28		0								
	18:02					21.49			1.2		
	18:05	4.93									
	18:10						67.95			1.2	
	18:13				14.51						
	18:19							13.58			1.25
	18:22			4.34							
	18:25		0								
	19:03					21.59			1.2		
	19:18	4.96									
	19:21						69.36			1.2	
	19:25				14.83						
	19:29							13.73			1.25
	19:38			4.46							
	19:40		0								
	20:04					20.57			1.1		

	20:15	4.98									
	20:20						69.73			1.2	
	20:23				15.03						
	20:28							16.8			1.4
	20:30			4.54							
	20:32		0								
	21:06					23.76			1.3		
	21:10	5.08									
	21:15						70.23			1.2	
	21:17				15.24						
	21:21							17.03			1.35
	21:27			4.66							
	21:29		0								
	22:07					23.92			1.3		
	22:12	5.09									
	22:17						70.71			1.2	
	22:20				15.39						
	22:23							16.59			1.5
	22:27			4.83							
	22:30		0								
	23:00					24.09			1.3		
	23:04	5.03									
	23:08						71.06			1.2	
	23:10				15.51						
	23:13							16.68			1.5
	23:17			4.85							
	23:20		0								
	0:00					24.21			1.5		
	0:03	5.06									
	0:07						71.45			1.3	
	0:10				15.62						
	0:12							16.8			1.5
	0:17			4.96							
	0:19		0								
5/13/2020	1:02					24.3			1.3		
	1:06	5.08									
	1:10						71.76			1.3	
	1:13				15.71						
	1:15							16.93			1.5
	1:20			5.06							
	1:23		0								
	2:01					24.39			1.3		
	2:05	5.08									
	2:09						72.08			1.3	
	2:11				15.79						
	2:15							17.02			1.5

	2:19			5.04							
	2:22		0								
	3:03					24.45			1.3		
	3:08	5.09									
	3:10						72.28			1.3	
	3:15				15.88						
	3:17							17.09			1.5
	3:22			5.17							
	3:25		0								
	4:00					WL stuck			1.4		
	4:19						72.69			1.3	
	4:21	5.13									
	4:25				15.93						
	4:28							17.14			1.5
	4:32			5.24							
	4:36		0								
	5:00					WL stuck			1.3		
	5:02	5.15									
	5:08						73.02			1.3	
	5:12				15.98						
	5:15							17.2			1.5
	5:20			5.34							
	5:25		0								
	6:00					24.05			1.3		
	6:04	5.19									
	6:09						73.35			1.3	
	6:11				16.02						
	6:15							17.24			1.5
	6:20			5.34							
	6:22		0								
	7:00					23.79			1.3		
	7:04	5.2									
	7:09						73.62			1.25	
	7:11				16.06						
	7:15							17.26			1.5
	7:20			5.36							
	7:22		0								
	8:00					23.12			1.3		
	8:04	5.19									
	8:06						73.83			1.25	
	8:10				16.18						
	8:14							17.37			1.5
	8:17			5.38							
	8:20		0								
	9:00					23.05			1.3		
	9:04	5.2									

	9:09						74.59			1.25	
	9:12				16.22						
	9:16							17.43			1.5
	9:20			5.41							
	9:23		0								
	10:00					23.04			1.25		
	10:02	5.21									
	10:06						75.08			1.25	
	10:09				16.31						
	10:15							17.46			1.5
	10:17			5.43							
	10:18		0								
	11:00					23.04			1.25		
	11:02	5.2									
	11:07						75.41			1.25	
	11:09				16.36						
	11:14							17.53			1.5
	11:16			5.48							
	11:18		0								
	12:00					22.97			1.25		
	12:01	5.23									
	12:06						75.2			1.25	
	12:08				16.36						
	12:13							17.56			1.5
	12:15			5.52							
	12:17		0								
	13:00					23.94			1.25		
	13:01	5.23									
	13:05						75.02			1.25	
	13:08				16.39						
	13:12							17.58			1.5
	13:15			5.56							
	13:16		0								
	14:02					22.94			1.2		
	14:04	5.22									
	14:10						75.06			1.2	
	14:13				16.47						
	14:18							17.65			1.35
	14:22			5.58							
	14:24		0								
	15:02					22.93			1.2		
	15:05	5.22									
	15:09						75.02			1.25	
	15:12				16.52						
	15:18							17.64			1.35
	15:20			5.61							

	15:22		0								
	16:05					22.85			1.2		
	16:10	5.24									
	16:13						75.07			1.25	
	16:16				16.54						
	16:21							17.72			1.35
	16:23			5.62							
	16:25		0								
	17:03					22.92			1.1		
	17:11	5.25									
	17:14						75.35			1.2	
	17:16				16.56						
	17:21							17.75			1.35
	17:25			5.64							
	17:27		0								
	18:05					22.94			1.2		
	18:07	5.26									
	18:12						76.54			1.25	
	18:14				16.61						
	18:20							17.79			1.35
	18:23			5.64							
	18:25		0								
	19:02					22.93			1.2		
	19:06	5.26									
	19:11						77.38			1.25	
	19:18				16.69						
	19:21							17.79			1.35
	19:29			5.66							
	19:34		0								
	20:03					22.92			1.2		
	20:09	5.28									
	20:14						77.27			1.25	
	20:17				16.78						
	20:22							17.84			1.3
	20:25			5.74							
	20:27		0								
	21:05					22.94			1.15		
	21:08	5.3									
	21:12						77.26			1.25	
	21:17				16.79						
	21:25							17.88			1.3
	21:27		0	5.71							
	21:31										
	22:07					22.98			1.2		
	22:11	5.3									
	22:19						77.05			1.25	

	22:22				16.8						
	22:25							17.96			1.5
	22:29			5.71							
	22:33		0								
	23:00					22.99			1.25		
	23:05	5.32									
	23:08						77			1.3	
	23:11				16.82						
	23:14							17.98			1.45
	23:19			5.73							
	23:24		0								
5/14/2020	0:00					23.05			1.2		
	0:06	5.34									
	0:10						76.99			1.2	
	0:13				16.83						
	0:16							18.02			1.4
	0:21			5.75							
	0:25		0								
	1:08					23.11			1.2		
	1:12	5.35									
	1:14						76.89			1.2	
	1:20				16.85						
	1:22							18.06			1.4
	1:26			5.78							
	1:29		0								
	2:01					23.14			1.2		
	2:05	5.36									
	2:07						76.85			1.2	
	2:12				16.85						
	2:14							18.09			1.4
	2:19			5.8							
	2:24		0								
	3:11					22.82			1.25		
	3:15	5.38									
	3:17						76.84			1.25	
	3:22				16.85						
	3:25							18.13			1.5
	3:29			5.82							
	3:33		0								
	4:21					21.63			1.2		
	4:26	5.38									
	4:31						76.79			1.2	
	4:34				16.83						
	4:38							18.14			1.5
	4:42			5.8							
	4:45		0								

	5:08					21.92			1.2		
	5:12	5.33									
	5:17						76.86			1.25	
	5:21				16.89						
	5:23							18.14			1.4
	5:28			5.79							
	5:30		0								
	6:00					21.31			1.25		
	6:03	5.38									
	6:08						77.5			1.25	
	6:12				16.84						
	6:17							18.05			1.5
	6:19			5.78							
	6:21		0								
	7:02					20.68			1.2		
	7:04	5.38									
	7:08						77.74			1.25	
	7:11				16.84						
	7:15							18.16			1.5
	7:18			5.76							
	7:19		0								
	8:01					20.49			1.2		
	8:03	5.38									
	8:07						77.36			1.25	
	8:10				16.88						
	8:15							18.18			1.5
	8:17			5.74							
	8:18		0								
	9:04					20.12			0.9		
	9:11	5.38									
	9:15						77.63			1.25	
	9:18				16.91						
	9:24							18.88			1.5
	9:26			5.76							
	9:30		0								
	10:01					21.92			1.2		
	10:03	5.38									
	10:05						77.57			1.25	
	10:10				16.99						
	10:15							19.03			1.5
	10:17			5.79							
	10:18		0								
	11:02					21.97			1.2		
	11:03	5.38									
	11:07						77.49			1.25	
	11:10				17.04						

	11:14							19.18			1.5
	11:17			5.83							
	11:19		0								
	12:01					21.98			1.2		
	12:03	5.38									
	12:07						77.76			1.25	
	12:10				17.08						
	12:15							19.16			1.5
	12:17			5.87							
	12:20		0								
	13:02					21.98			1.2		
	13:04	5.39									
	13:08						77.68			1.25	
	13:11				17.07						
	13:15							19.18			1.5
	13:18			5.89							
	13:20		0								
	14:02					20.66			1		
	14:21	5.39									
	14:25						79.73			1.25	
	14:29				17.19						
	14:34							19.28			1.4
	14:37			5.86							
	14:39		0								
	15:03					27.03			1.5		
	15:05	5.42									
	15:10						84.84			1.5	
	15:12				17.24						
	15:16							19.27			1.4
	15:18			5.99							
	15:20		0								
	16:02					28.22			1.5		
	16:05	5.45									
	16:12						86.55			1.4	
	16:15				17.3						
	16:19							19.42			1.4
	16:21			6.09							
	16:23		0								
	17:02					28.24			1.5		
	17:04	5.48									
	17:10						86.58			1.35	
	17:14				17.35						
	17:17							19.44			1.5
	17:21			6.17							
	17:23		0								
	18:02					28.04			1.45		

	18:06	5.48									
	18:10						87.03			1.4	
	18:13				17.39						
	18:18							19.43			1.5
	18:27			6.23							
	18:29		0								
	19:01					28.07			1.45		
	19:05	5.51									
	19:09						87.36			1.4	
	19:12				17.46						
	19:16							20.58			1.5
	19:19			6.33							
	19:21		0								
	20:01					28.18			1.4		
	20:05	5.52									
	20:09						87.55			1.35	
	20:20				17.53						
	20:24							20.2			1.45
	20:27			6.37							
	20:29		0								
	21:02					28.27			1.45		
	21:07	5.55									
	21:11						89.34			1.4	
	21:17				17.56						
	21:21							20.22			1.5
	21:25			6.39							
	21:28		0								
	22:10					28.34			1.5		
	22:14	5.55									
	22:16						88.86			1.4	
	22:21				17.58						
	22:23							19.98			1.45
	22:28			6.41							
	22:30		0								
	23:05					28.39			1.5		
	23:09	5.56									
	23:11						88.45			1.4	
	23:16				17.58						
	23:19							20.03			1.45
	23:26			6.42							
	23:29		0								
5/15/2020	0:00					28.45			1.5		
	0:04	5.58									
	0:07						88.2			1.4	
	0:13				17.59						
	0:16							19.9			1.4

	0:26			6.44							
	0:29		0								
	1:04					28.49			1.5		
	1:08	5.59									
	1:11						87.91			1.3	
	1:16				17.59						
	1:18							19.83			1.5
	1:28			6.46							
	1:31		0								
	2:02					28.55			1.5		
	2:06	5.59									
	2:10						87.68			1.3	
	2:17							19.81			1.5
	2:22				17.58						
	2:28			6.49							
	2:31		0								
	3:06					28.59			1.5		
	3:10	5.59									
	3:15						87.69			1.3	
	3:21							19.62			1.5
	3:26				17.56						
	3:32			6.5							
	3:35		0								
	4:19					28.65			1.5		
	4:23	5.6									
	4:25						87.7			1.25	
	4:31				17.55						
	4:34							19.25			1.5
	4:38			6.51							
	4:41		0								
	5:16					28.68			1.5		
	5:20	5.61									
	5:24						87.74			1.4	
	5:27				17.54						
	5:30							19.19			1.5
	5:36			6.52							
	5:39		0								
	5:54					28.72			1.5		
	5:55	5.58									
	5:57						87.82			1.4	
	5:59				17.54						
	6:01							19.18			1.5
	6:03			6.54							
	6:04		0								
	6:04						Pump off	Pump off		0	0
	6:06					Pump off			0		

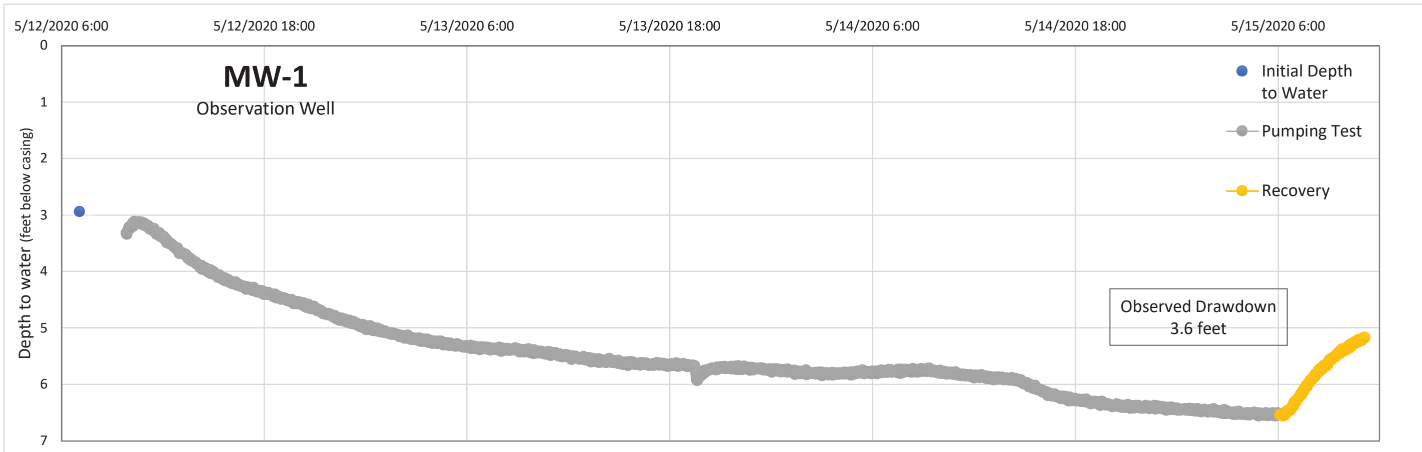
	6:11					24.21					
	6:14						81.53				
	6:15							13.28			
	6:23					19.48					
	6:25						74.48				
	6:27							10.17			
	6:34					17.33					
	6:36						69.54				
	6:38							8.63			
	6:45					15.52					
	6:47						65.23				
	6:48							7.67			
	7:00					13.97			0		
	7:02	5.54									
	7:03						58.97			0	
	7:06				17.32						
	7:08							6.71			0
	7:10			6.26							
	7:12		0								
	7:16					12.98					
	7:18						54.91				
	7:19							6.33			
	7:33					12.32					
	7:36						49.57				
	7:38							5.94			
	8:00					11.47			0		
	8:01	5.45									
	8:03						43.71			0	
	8:05				16.89						
	8:07							5.62			0
	8:09			5.85							
	8:10		0								
	8:18					11.08					
	8:21						40.44				
	8:24							5.32			
	8:34					10.86					
	8:36						38.02				
	8:38							5.22			
	9:00					10.58			0		
	9:01	5.4									
	9:03						34.48			0	
	9:05				16.53						
	9:07							4.98			0
	9:09			5.56							

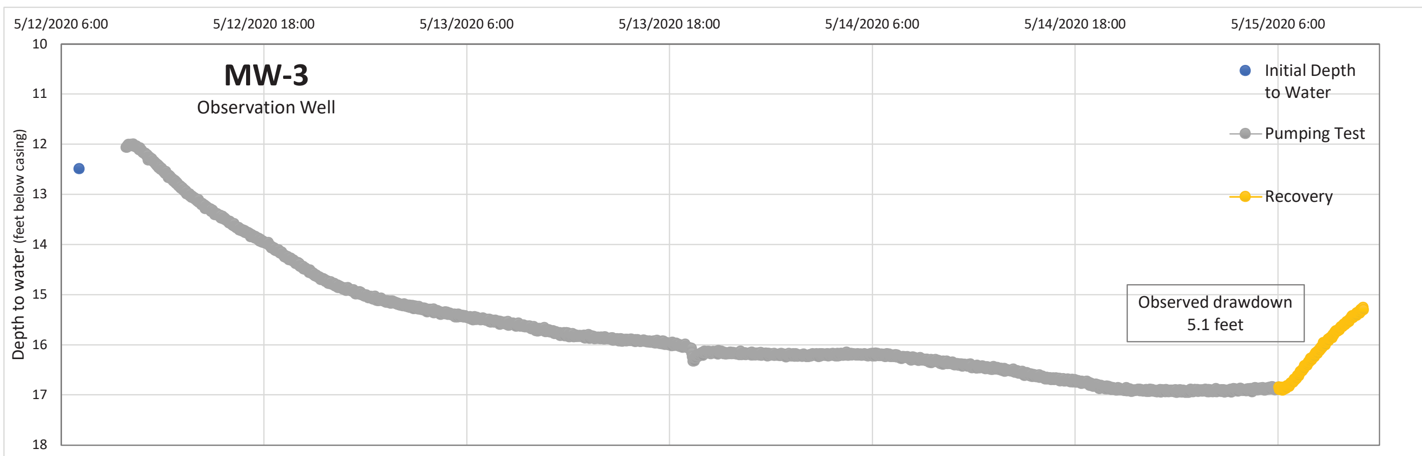
	9:11		0								
	9:19					10.37					
	9:21						32.47				
	9:24							4.88			
	9:38					10.23					
	9:40						30.69				
	9:42							4.79			
	10:00					10.04			0		
	10:01	5.36									
	10:03						28.78			0	
	10:05				16.36						
	10:07							4.65			0
	10:09			5.33							
	10:10		0								
	10:28					9.89					
	10:30						26.82				
	10:32							4.54			
	10:59					9.74			0		
	11:00	5.32									
	11:02						25.06			0	
	11:04				15.91						
	11:06							4.39			0
	11:08			5.17							
	11:10		0								
	11:11	Final readings Test Completed. Packing up equipment.									

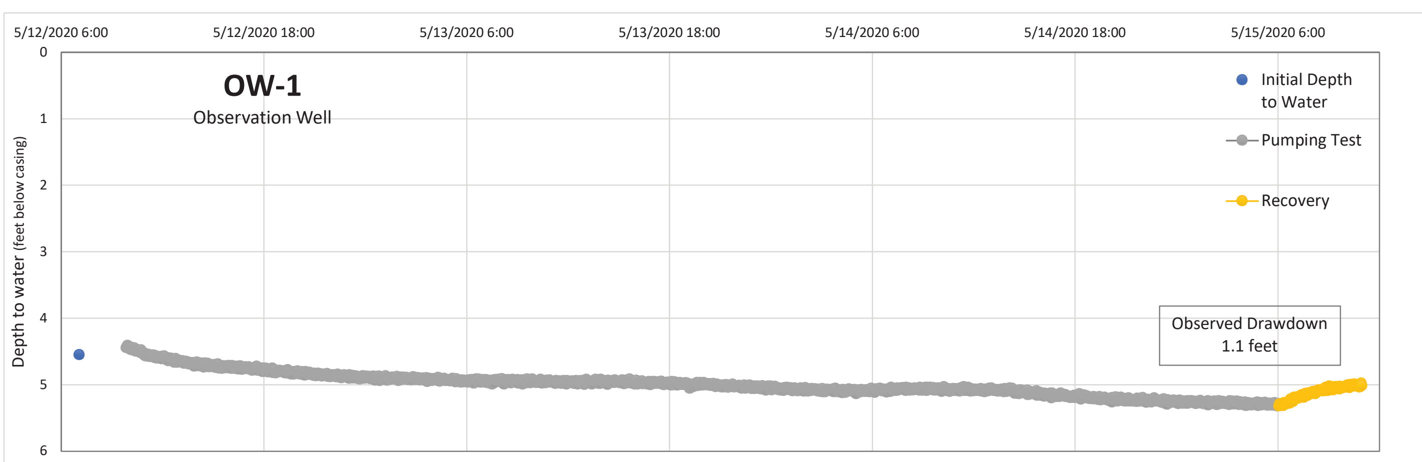
APPENDIX C

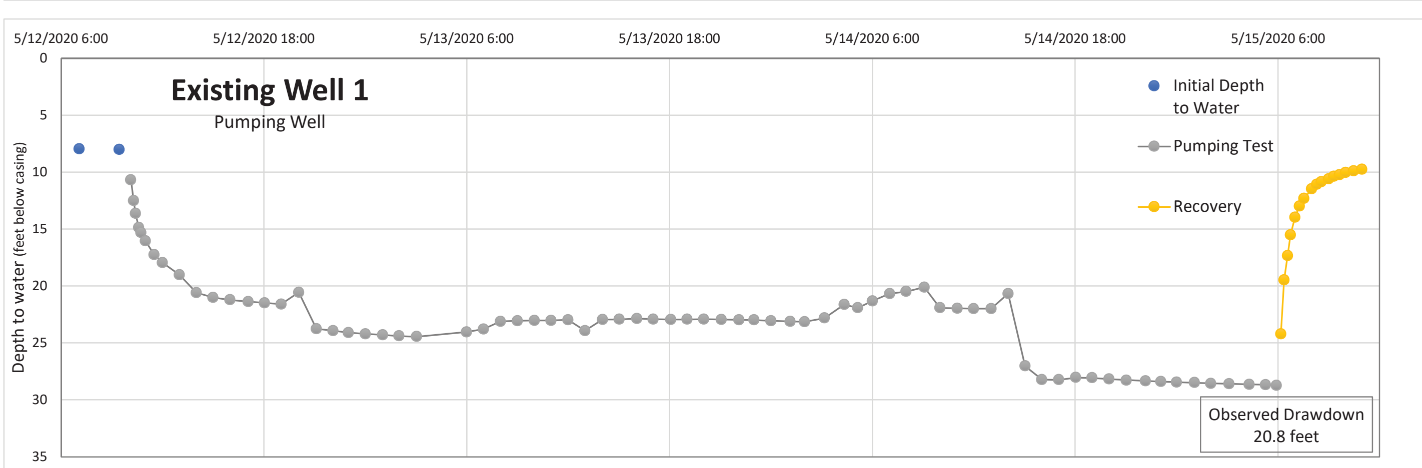
PUMPING TEST HYDROGRAPHS

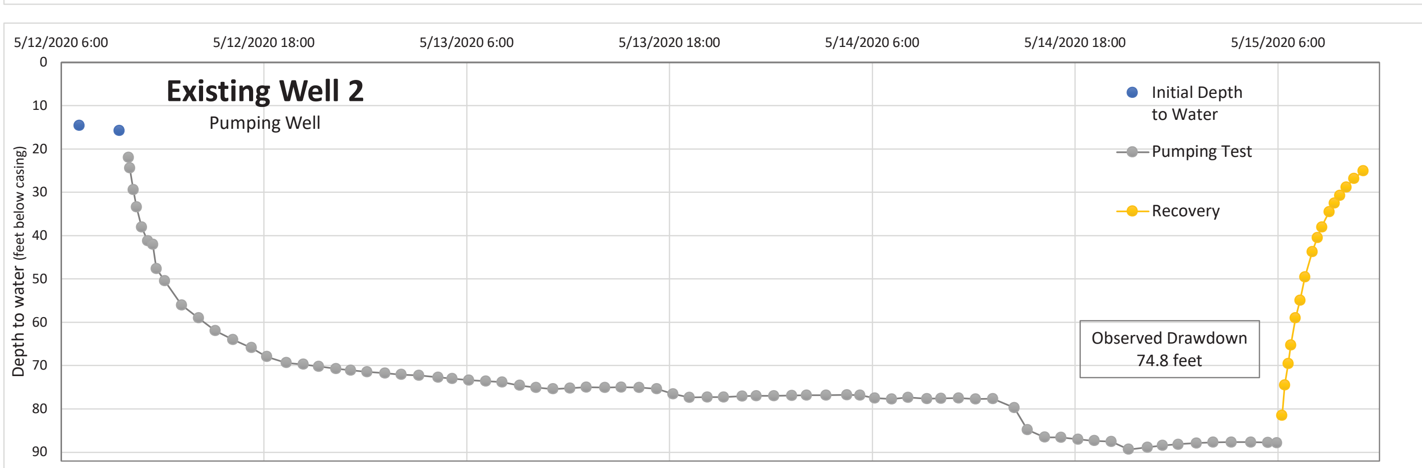
Attachment B
Pumping Test
United States Coast Guard
Eastport Housing Site Evaluation

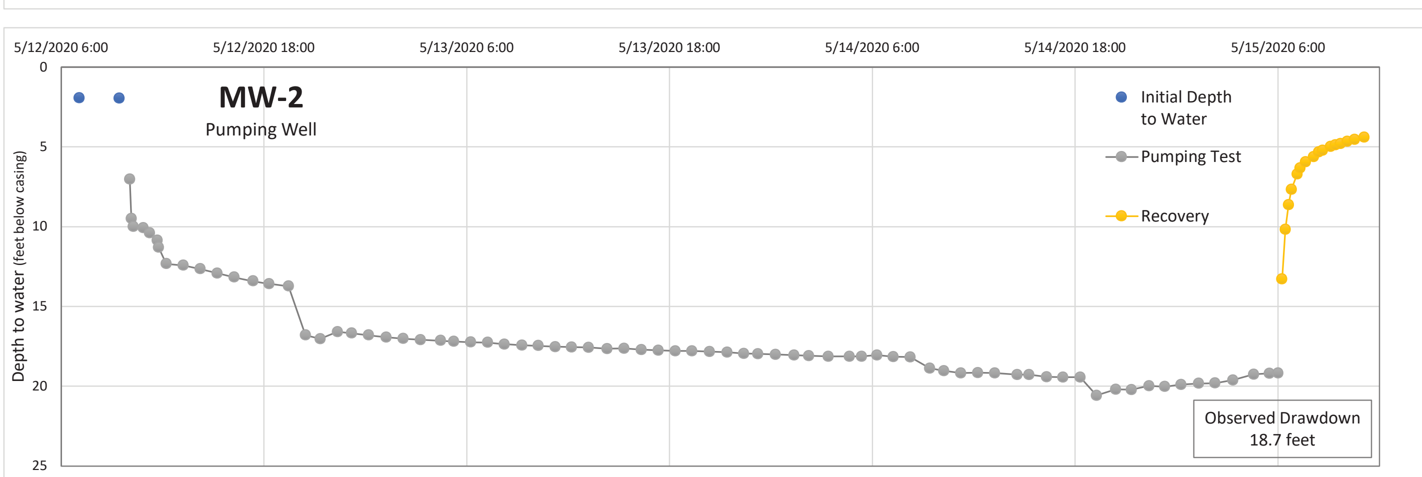












Created by: LMT 6/3/2020
Checked by: JBR 6/3/2020

Amec Foster Wheeler HDR
JOINT VENTURE

APPENDIX D

LABORATORY ANALYTICAL REPORT

WOOD ENVIRONMENT
& INFRASTRUCTURE
USCG EASTPORT
SN3779

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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SAMPLE DATA PACKAGE

Katahdin ANALYTICAL SERVICES

NH ELAP Lab ID 2001 (DW, NPW, SCM)
NYSDOH ELAP Lab ID 11121 (AE - T015)

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
WOOD ENVIRONMENT & INFRASTRUCTURE
USCG EASTPORT
SN3779

Sample Receipt

The following samples were received on May 15, 2020 and were logged in under Katahdin Analytical Services work order number SN3779 for a hardcopy due date of May 27, 2020.

KATAHDIN Sample No.	WOOD ENVIRONMENT & INFRASTRUCTURE Sample Identification
SN3779-1	USCG OW-2
SN3779-2	USCG OW-1
SN3779-3	USCG MW-3
SN3779-4	USCG MW-1
SN3779-5	USCG EW-1
SN3779-6	USCG EW-2
SN3779-7	USCG MW-2
SN3779-8	USCG OW-1B
SN3779-9	USCG MW-3B
SN3779-10	USCG MW-1B
SN3779-11	USCG OW-2B
SN3779-12	USCG EW-1B
SN3779-13	USCG EW-1BD
SN3779-14	USCG EW-2B
SN3779-15	USCG MW-2B
SN3779-16	USCG EW-1C
SN3779-17	USCG EW-2C
SN3779-18	USCG MW-2C
SN3779-19	USCG MW-2CD
SN3779-20	USCG OW-1C
SN3779-21	USCG OW-2C
SN3779-22	USCG MW-1C
SN3779-23	USCG MW-3C

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.
We certify that the test results provided in this report meet all the requirements of the NELAP standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

P.O. Box 540, Scarborough, ME 04070 Tel: (207) 874-2400 Fax: (207) 775-4029 600 Technology Way, Scarborough, ME 04074
www.katahdinlab.com

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SN3779 were prepared and analyzed for metals in accordance with USEPA Method 200.7 of "Methods for Chemical Analysis of Water and Wastes", USEPA document EPA-600/4-79-020.

Inductively-Coupled Plasma Atomic Emission Spectroscopic Analysis (ICP)

Aqueous-matrix Katahdin Sample Numbers SN3779-(1-17) were digested for ICP analysis on 5/18/20 (QC Batch NE18ICW2) in accordance with USEPA Method 200.7. Katahdin Sample Number SN3779-5 was prepared with duplicate matrix-spiked aliquots.

Aqueous-matrix Katahdin Sample Numbers SN3779-(18-23) were digested for ICP analysis on 5/21/20 (QC Batch NE21ICW2) in accordance with USEPA Method 200.7. Katahdin Sample Number SN3779-18 was prepared with duplicate matrix-spiked aliquots.

ICP analyses of Katahdin Work Order SN3779 sample digestates were performed using a Thermo iCAP 6500 ICP spectrometer in accordance with USEPA Method 200.7. All samples were analyzed within holding times and all analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of arsenic in the matrix-spiked aliquots of Katahdin Sample Numbers SN3779-(5, 18) are within project acceptance criteria.

The relative percent difference between the duplicate matrix-spiked analyses of Katahdin Sample Numbers SN3779-(5, 18) is within project acceptance criteria (<20% relative difference between duplicate sample aliquots).

The measured recoveries of arsenic in the post-digestion spiked aliquots of Katahdin Sample Numbers SN3779-(5, 18) are within project acceptance criteria (70%-130% recovery of the added element).

The serial dilution analyses of Katahdin Sample Numbers SN3779-(5, 18) are within project acceptance criteria (<5% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond

Leslie Dimond 05.28.20
Quality Assurance Officer

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: WOOD	KAS PM: HMM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: Client	
KAS Work Order#: SN3779	KIMS Review By: HMM	Received By: JCB	
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 5.15.20 1605	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 10.8 — Thermometer ID: IR-1
Samples received at <6 °C w/o freezing?				✓	Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?				✓	The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?				✓	
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	
11. Bottleware Prepped on:					

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: WOOD E&I
Contact: Peter Baker
Phone #: (207) 232-5037
Fax #: ( )

Address: 511 Congress Str
City: Portland
State: ME
Zip Code: 04101

Purchase Order #:
Proj. Name / No.: USCG Eastport
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): Jerry Rawcliffe / Jerry Rawcliffe
Copies To:

LAB USE ONLY
WORK ORDER #: SN3779
KATAHDIN PROJECT NUMBER:

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☒ CLIENT
AIRBILL NO:
TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

Filt. ☐Y ☒N — Arsenic 200.7 / 1x250ml poly/HNO3

★	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Arsenic 200.7 1x250ml poly/HNO3
	USCGOW-2	5/12/20/0750	GW	1	1
	USCGOW-1	/0830		1	1
	USCGMW-3	/0903		1	1
	USCGMW-1	/0915		1	1
	USCGEW-1	/1020		1	1
	USCGEW-2	/1040		1	1
	USCGMW-2	/1045		1	1
	USCGOW-1B	5/13/20/1910	GW	1	1
	USCGMW-3B	/1920		1	1
	~~USCGMW-1B~~ USCGOW-2B	/1948 1945		~~1~~ 1	~~1~~ 1
	USCGEW-1B	/2010		1	1
	USCGEW-1BD	/2010		1	1
	USCGEW-2B	/2020		1	1
	USCGMW-2B	/2030		1	1
	USCGEW-1C	5/15/20/0545	GW	1	1
	USCGEW-2C	/0550		1	1
	USCGMW-2C	/0555		1	1
	USCGMW-2CD	/0555		1	1
	USCGOW-1C	/1105		1	1
	USCGOW-2C	/0905		1	1
	USCGMW-1C	/1110		1	1
	USCGMW-3C	/1120		1	1

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	5/15/20 1604	[signature]			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 18, 2020

01:23 PM

Login Number: SN3779

Account: HARDIN001 Web

Wood Environment & Infrastructure

Project: WOOD-EASTPORT

Quote/Incoming: WOOD-EASTPORT

Primary Report Address:

Peter Baker
Wood Environment & Infrastructure
511 Congress Street

Portland,ME 04112
peter.baker@woodplc.com

Primary Invoice Address:

AP Processing
Wood Environment & Infrastructure
1105 Lakewood Parkway
Suite 300
Alpharetta,GA 30009

Report CC Addresses:

Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD 5.1. ND to LOD with J flags.
CHECK NO.	:	
CLIENT PO#	:	non-PO
CLIENT PROJECT MANAGE	:	Chuck Lyman
CONTRACT	:	
COOLER TEMPERATURE	:	10.8
DELIVERY SERVICES	:	Client
EDD FORMAT	:	KAS064QC-XLS
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	USCG Eastport
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	PDF, EDD and invoice to peter.baker@woodplc.com and charles.lyman@woodplc.com
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	

HHM

1:30 pm, May 18, 2020

Login Number: SN3779 **Quote/Incoming:** WOOD-EASTPORT

Account: HARDIN001 Web

Wood Environment & Infrastructure

Project: WOOD-EASTPORT

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-1	USCG OW-2	12-MAY-20 07:50	15-MAY-20			27-MAY-20	
SN3779-2	USCG OW-1	12-MAY-20 08:30	15-MAY-20			27-MAY-20	
SN3779-3	USCG MW-3	12-MAY-20 09:03	15-MAY-20			27-MAY-20	
SN3779-4	USCG MW-1	12-MAY-20 09:15	15-MAY-20			27-MAY-20	
SN3779-5	USCG EW-1	12-MAY-20 10:20	15-MAY-20			27-MAY-20	
SN3779-6	USCG EW-2	12-MAY-20 10:40	15-MAY-20			27-MAY-20	
SN3779-7	USCG MW-2	12-MAY-20 10:45	15-MAY-20			27-MAY-20	
SN3779-8	USCG OW-1B	13-MAY-20 19:10	15-MAY-20			27-MAY-20	
SN3779-9	USCG MW-3B	13-MAY-20 19:20	15-MAY-20			27-MAY-20	
SN3779-10	USCG MW-1B	13-MAY-20 19:40	15-MAY-20			27-MAY-20	

Sample details (each sample):

Sample	Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
SN3779-1	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-1	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-2	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-2	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-3	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-3	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-4	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-4	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-5	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-5	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-6	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-6	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-7	Aqueous	S	E200.7-ARSENIC	08-NOV-20	250mL Plastic+HNO3		
SN3779-7	Aqueous	S	E200.7-PREP	08-NOV-20	250mL Plastic+HNO3		
SN3779-8	Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
SN3779-8	Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		
SN3779-9	Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
SN3779-9	Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		
SN3779-10	Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
SN3779-10	Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

HHM

1:30 pm, May 18, 2020

Login Number: SN3779

Quote/Incoming: WOOD-EASTPORT

Account: HARDIN001 Web

Wood Environment & Infrastructure

Project: WOOD-EASTPORT

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-11	USCG OW-2B	13-MAY-20 19:45	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-12	USCG EW-1B	13-MAY-20 20:10	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-13	USCG EW-1BD	13-MAY-20 20:10	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-14	USCG EW-2B	13-MAY-20 20:20	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-15	USCG MW-2B	13-MAY-20 20:30	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	09-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	09-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-16	USCG EW-1C	15-MAY-20 05:45	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-17	USCG EW-2C	15-MAY-20 05:50	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-18	USCG MW-2C	15-MAY-20 05:55	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-19	USCG MW-2CD	15-MAY-20 05:55	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-20	USCG OW-1C	15-MAY-20 11:05	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

HHM

1:31 pm, May 18, 2020

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

May. 18, 2020
01:23 PM

Login Number: SN3779 **Quote/Incoming:** WOOD-EASTPORT

Account: HARDIN001 Web
Wood Environment & Infrastructure

Project: WOOD-EASTPORT

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-21	USCG OW-2C	15-MAY-20 09:05	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-22	USCG MW-1C	15-MAY-20 11:10	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SN3779-23	USCG MW-3C	15-MAY-20 11:20	15-MAY-20			27-MAY-20	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E200.7-ARSENIC	11-NOV-20	250mL Plastic+HNO3		
Aqueous	S	E200.7-PREP	11-NOV-20	250mL Plastic+HNO3		

Total Samples: 23 ***Total Analyses: 46***

HHM

1:31 pm, May 18, 2020

SAMPLE DATA SUMMARY PACKAGE

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG OW-2

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-001

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	36.4			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-1

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	36.8			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG MW-3

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-003

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	18.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-1

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-004

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	41.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-005

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	3.8	J		P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-2

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	54.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-2

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-007

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	12			P	1	8.0	1.4	5.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-1B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	LOQ	ADJUSTED MDL	LOD
7440-38-2	ARSENIC, TOTAL	25.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-3B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	17.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-1B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	45.8			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services | **Client Field ID:** USCG OW-2B

Matrix: WATER | **SDG Name:** SN3779

Percent Solids: 0.00 | **Lab Sample ID:** SN3779-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	37.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG EW-1B

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-012

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	11			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1BD

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	LOQ	ADJUSTED MDL	LOD
7440-38-2	ARSENIC, TOTAL	10			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-2B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	41.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services | **Client Field ID:** USCG MW-2B

Matrix: WATER | **SDG Name:** SN3779

Percent Solids: 0.00 | **Lab Sample ID:** SN3779-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	22.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, TOTAL	13			P	1	8.0	1.4	5.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services | **Client Field ID:** USCG EW-2C

Matrix: WATER | **SDG Name:** SN3779

Percent Solids: 0.00 | **Lab Sample ID:** SN3779-017

Concentration Units : ug/L

								ADJUSTED	
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	43.2			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-2C

SDG Name: SN3779

Lab Sample ID: SN3779-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	25.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG MW-2CD

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-019

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	27.9			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-1C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	29.1			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-2C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-021

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	37.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-1C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-022

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	45.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services | **Client Field ID:** USCG MW-3C

Matrix: WATER | **SDG Name:** SN3779

Percent Solids: 0.00 | **Lab Sample ID:** SN3779-023

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	19.2			P	1	8.0	1.4	5.0

Comments:

METALS DATA

Sample Data Section

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.
J	Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SN3779 **SOW No.** SW846

Client Field ID	Lab Sample ID
USCG EW-1	SN3779-005
USCG EW-1B	SN3779-012
USCG EW-1BD	SN3779-013
USCG EW-1C	SN3779-016
USCG EW-1P	SN3779-005P
USCG EW-1S	SN3779-005S
USCG EW-2	SN3779-006
USCG EW-2B	SN3779-014
USCG EW-2C	SN3779-017
USCG MW-1	SN3779-004
USCG MW-1B	SN3779-010
USCG MW-1C	SN3779-022
USCG MW-2	SN3779-007
USCG MW-2B	SN3779-015
USCG MW-2C	SN3779-018
USCG MW-2CD	SN3779-019
USCG MW-2CP	SN3779-018P
USCG MW-2CS	SN3779-018S
USCG MW-3	SN3779-003
USCG MW-3B	SN3779-009
USCG MW-3C	SN3779-023
USCG OW-1	SN3779-002
USCG OW-1B	SN3779-008
USCG OW-1C	SN3779-020

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Alex Pimentel

Date: 5/27/20 Title: Analyst

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SN3779 **SOW No.** SW846

Client Field ID	Lab Sample ID
USCG OW-2	SN3779-001
USCG OW-2B	SN3779-011
USCG OW-2C	SN3779-021

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Alex Pimentel

Date: 5/27/20 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-2

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-001

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	36.4			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-1

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	36.8			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-3

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	18.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG MW-1

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-004

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	41.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	3.8	J		P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-2

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-006

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, TOTAL	54.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-2

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-007

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	12			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG OW-1B

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-008

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	25.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-3B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-009

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	17.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-1B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-010

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, TOTAL	45.8			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-2B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-011

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	37.2			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	11			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1BD

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-013

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, TOTAL	10			P	1	8.0	1.4	5.0

Comments:

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-2B

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	41.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG MW-2B

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-015

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	22.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-1C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-016

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	13			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG EW-2C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	43.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG MW-2C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	25.7			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: USCG MW-2CD

Matrix: WATER

SDG Name: SN3779

Percent Solids: 0.00

Lab Sample ID: SN3779-019

Concentration Units : ug/L

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7440-38-2	ARSENIC, TOTAL	27.9			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-1C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	29.1			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** USCG OW-2C

Matrix: WATER **SDG Name:** SN3779

Percent Solids: 0.00 **Lab Sample ID:** SN3779-021

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	37.5			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-1C

SDG Name: SN3779

Lab Sample ID: SN3779-022

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	45.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services | **Client Field ID:** USCG MW-3C

Matrix: WATER | **SDG Name:** SN3779

Percent Solids: 0.00 | **Lab Sample ID:** SN3779-023

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, TOTAL	19.2			P	1	8.0	1.4	5.0

Comments:

FORM I - IN

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICV

File: INE21A May 21, 2020 15:46

Analyte	True	Found	%R (1)
ALUMINUM	10000.0	9927.00	99.3
ARSENIC	400.0	381.60	95.4
CALCIUM	10000.0	9964.00	99.6
IRON	10000.0	9968.00	99.7
MAGNESIUM	10000.0	10270.00	102.7

SAMPLE: CCV

File: INE21A May 21, 2020 16:09

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12140.00	97.1
ARSENIC	500.0	490.30	98.1
CALCIUM	12500.0	12140.00	97.1
IRON	12500.0	12190.00	97.5
MAGNESIUM	12500.0	12460.00	99.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE21A May 21, 2020 16:31

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12470.00	99.8
ARSENIC	500.0	495.30	99.1
CALCIUM	12500.0	12500.00	100.0
IRON	12500.0	12520.00	100.2
MAGNESIUM	12500.0	12560.00	100.5

SAMPLE: CCV

File: INE21A May 21, 2020 17:23

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12270.00	98.2
ARSENIC	500.0	494.30	98.9
CALCIUM	12500.0	12230.00	97.8
IRON	12500.0	12330.00	98.6
MAGNESIUM	12500.0	12520.00	100.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE21A May 21, 2020 18:14

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12170.00	97.4
ARSENIC	500.0	496.30	99.3
CALCIUM	12500.0	12220.00	97.8
IRON	12500.0	12080.00	96.6
MAGNESIUM	12500.0	12610.00	100.9

SAMPLE: CCV

File: INE21A May 21, 2020 19:05

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12450.00	99.6
ARSENIC	500.0	497.50	99.5
CALCIUM	12500.0	12380.00	99.0
IRON	12500.0	12580.00	100.6
MAGNESIUM	12500.0	12610.00	100.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE21A May 21, 2020 19:57

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12270.00	98.2
ARSENIC	500.0	488.50	97.7
CALCIUM	12500.0	12210.00	97.7
IRON	12500.0	12440.00	99.5
MAGNESIUM	12500.0	12360.00	98.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICV

File: INE22A May 22, 2020 10:01

Analyte	True	Found	%R (1)
ALUMINUM	10000.0	10120.00	101.2
ARSENIC	400.0	380.10	95.0
CALCIUM	10000.0	10180.00	101.8
IRON	10000.0	10220.00	102.2
MAGNESIUM	10000.0	10090.00	100.9

SAMPLE: CCV

File: INE22A May 22, 2020 10:24

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12770.00	102.2
ARSENIC	500.0	494.70	98.9
CALCIUM	12500.0	12740.00	101.9
IRON	12500.0	12710.00	101.7
MAGNESIUM	12500.0	12440.00	99.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE22A May 22, 2020 10:48

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12940.00	103.5
ARSENIC	500.0	503.60	100.7
CALCIUM	12500.0	12950.00	103.6
IRON	12500.0	12800.00	102.4
MAGNESIUM	12500.0	12680.00	101.4

SAMPLE: CCV

File: INE22A May 22, 2020 11:41

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12920.00	103.4
ARSENIC	500.0	497.80	99.6
CALCIUM	12500.0	12890.00	103.1
IRON	12500.0	12670.00	101.4
MAGNESIUM	12500.0	12550.00	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE22A May 22, 2020 12:32

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	13140.00	105.1
ARSENIC	500.0	508.70	101.7
CALCIUM	12500.0	13150.00	105.2
IRON	12500.0	13030.00	104.2
MAGNESIUM	12500.0	12890.00	103.1

SAMPLE: CCV

File: INE22A May 22, 2020 13:26

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	13020.00	104.2
ARSENIC	500.0	505.40	101.1
CALCIUM	12500.0	12960.00	103.7
IRON	12500.0	12840.00	102.7
MAGNESIUM	12500.0	12850.00	102.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE22A May 22, 2020 14:17

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12700.00	101.6
ARSENIC	500.0	497.50	99.5
CALCIUM	12500.0	12660.00	101.3
IRON	12500.0	12540.00	100.3
MAGNESIUM	12500.0	12600.00	100.8

SAMPLE: CCV

File: INE22A May 22, 2020 15:11

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12910.00	103.3
ARSENIC	500.0	496.60	99.3
CALCIUM	12500.0	12860.00	102.9
IRON	12500.0	12680.00	101.4
MAGNESIUM	12500.0	12530.00	100.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCV

File: INE22A May 22, 2020 16:04

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	13100.00	104.8
ARSENIC	500.0	495.80	99.2
CALCIUM	12500.0	13010.00	104.1
IRON	12500.0	12850.00	102.8
MAGNESIUM	12500.0	12530.00	100.2

SAMPLE: CCV

File: INE22A May 22, 2020 17:14

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12850.00	102.8
ARSENIC	500.0	486.70	97.3
CALCIUM	12500.0	12790.00	102.3
IRON	12500.0	12630.00	101.0
MAGNESIUM	12500.0	12280.00	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: PQL

File: INE21A May 21, 2020 15:54

Analyte	TRUE	FOUND	% R
ALUMINUM	300.0	318.10	106.0
ARSENIC	8.0	8.91	111.4
CALCIUM	100.0	94.80	94.8
IRON	100.0	106.10	106.1
MAGNESIUM	100.0	110.90	110.9

FORM II (Part 3) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: PQL

File: INE22A May 22, 2020 10:10

Analyte	TRUE	FOUND	% R
ALUMINUM	300.0	312.10	104.0
ARSENIC	8.0	8.38	104.8
CALCIUM	100.0	98.78	98.8
IRON	100.0	108.80	108.8
MAGNESIUM	100.0	110.40	110.4

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICB

File: INE21A May 21, 2020 15:50

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	6.544	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE21A May 21, 2020 16:13

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	4.077	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE21A May 21, 2020 16:35

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCB

File: INE21A May 21, 2020 17:27

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	4.717	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE21A May 21, 2020 18:19

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE21A May 21, 2020 19:10

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	6.582	J
MAGNESIUM	3.348	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCB

File: INE21A May 21, 2020 20:01

Analyte	Result	C
ALUMINUM	15.790	J
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	6.264	J
MAGNESIUM	3.754	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICB

File: INE22A May 22, 2020 10:05

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	4.817	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 10:28

Analyte	Result	C
ALUMINUM	11.170	J
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 10:52

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.709	J
MAGNESIUM	2.900	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCB

File: INE22A May 22, 2020 11:45

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 12:36

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 13:30

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	6.649	J
MAGNESIUM	2.900	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCB

File: INE22A May 22, 2020 14:21

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	4.360	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 15:15

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	5.544	J
MAGNESIUM	2.900	U

SAMPLE: CCB

File: INE22A May 22, 2020 16:08

Analyte	Result	C
ALUMINUM	10.000	U
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	5.949	J
MAGNESIUM	2.900	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: CCB

File: INE22A May 22, 2020 17:18

Analyte	Result	C
ALUMINUM	10.200	J
ARSENIC	1.400	U
CALCIUM	11.000	U
IRON	5.651	J
MAGNESIUM	2.900	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWNE18ICW2

Matrix: WATER **SDG Name:** SN3779

QC Batch ID: NE18ICW2

Concentration Units : ug/L

Analyte	RESULT	C
ARSENIC	5.0	U

FORM III (Part 2) - IN

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWNE21ICW2

Matrix: WATER **SDG Name:** SN3779

QC Batch ID: NE21ICW2

Concentration Units : ug/L

Analyte	RESULT	C
ARSENIC	5.0	U

FORM III (Part 2) - IN

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICSA

File: INE21A May 21, 2020 15:58

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	474400.00	94.9
ARSENIC	0	1.17	
CALCIUM	500000.00	455300.00	91.1
IRON	200000.00	184000.00	92.0
MAGNESIUM	500000.00	427700.00	85.5

SAMPLE: ICSAB

File: INE21A May 21, 2020 16:04

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	476400.00	95.3
ARSENIC	100.00	98.35	98.0
CALCIUM	500000.00	455300.00	91.1
IRON	200000.00	184400.00	92.2
MAGNESIUM	500000.00	434600.00	86.9

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Concentration Units: ug/L

SAMPLE: ICSA

File: INE22A May 22, 2020 10:14

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	503000.00	100.6
ARSENIC	0	0.04	
CALCIUM	500000.00	471300.00	94.3
IRON	200000.00	194100.00	97.0
MAGNESIUM	500000.00	431100.00	86.2

SAMPLE: ICSAB

File: INE22A May 22, 2020 10:19

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	496800.00	99.4
ARSENIC	100.00	100.90	101.0
CALCIUM	500000.00	469800.00	94.0
IRON	200000.00	192000.00	96.0
MAGNESIUM	500000.00	430500.00	86.1

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG EW-1P

SDG Name: SN3779

Lab Sample ID: SN3779-005P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, TOTAL	111		3.8	J	100	107.2		87	113	P

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: WATER
Percent Solids: 0.00

Client Field ID: USCG EW-1S
SDG Name: SN3779
Lab Sample ID: SN3779-005S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	Control Limits (%R) High	M
ARSENIC, TOTAL	107		3.8	J	100	103.6		87	113	P

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-2CP

SDG Name: SN3779

Lab Sample ID: SN3779-018P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	Control Limits (%R) High	M
ARSENIC, TOTAL	131		25.7		100	105.5		87	113	P

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-2CS

SDG Name: SN3779

Lab Sample ID: SN3779-018S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, TOTAL	138		25.7		100	112.4		87	113	P

Comments:

FORM V (Part 1) - IN

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG EW-1A

SDG Name: SN3779

Lab Sample ID: SN3779-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	Control Limits (%R) High	M
ARSENIC, TOTAL	479		3.8	J	500	95.1		80	120	P

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-2CA

SDG Name: SN3779

Lab Sample ID: SN3779-018A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, TOTAL	496		25.7		500	94.0		80	120	P

Comments:

5D
SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG EW-1

SDG Name: SN3779

Lab Sample ID: SN3779-005

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ARSENIC, TOTAL		107		111		3.3		P

Comments:

FORM VD - IN

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: WATER

Percent Solids: 0.00

Client Field ID: USCG MW-2C

SDG Name: SN3779

Lab Sample ID: SN3779-018

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ARSENIC, TOTAL		138		131		5.1		P

Comments:

FORM VD - IN

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWNE18ICW2

Matrix: WATER **SDG Name:** SN3779

QC Batch ID: NE18ICW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ARSENIC	100	104	104.0	87	113

FORM VII - IN

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWNE21ICW2

Matrix: WATER **SDG Name:** SN3779

QC Batch ID: NE21ICW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ARSENIC	100	106	106.1	87	113

FORM VII - IN

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services

Matrix: WATER

Client Field ID: USCG EW-1L

SDG Name: SN3779

Lab Sample ID: SN3779-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ARSENIC, TOTAL	3.8	J	7.0	U	100.0		P

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services

Matrix: WATER

Client Field ID: USCG MW-2CL

SDG Name: SN3779

Lab Sample ID: SN3779-018L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ARSENIC, TOTAL	25.7		27	J	5.1		P

FORM IX - IN

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 01/22/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	300	10	P
ARSENIC	8.0	1.4	P
CALCIUM	100	11	P
IRON	100	3.6	P
MAGNESIUM	100	2.9	P

FORM X - IN

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 06/11/2010

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ARSENIC	5.0	ug/L	P	EPA 200.7 / EPA 200.7

FORM X - IN

10

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 01/19/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ARSENIC	1.4	ug/L	P	EPA 200.7 / EPA 200.7

FORM X - IN

ICP INTERELEMENT CORRECTION FACTORS

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument Name: THERMO ICAP 6500 **Instrument ID:** I **Date:** 10/31/2019

Analyte	Wavelength (nm)	Al	Ca	Fe	Mg	As	Cr	Co	Cu	Mn	Mo	Ni	Ti	V
		Interelement Correction Factors for:												
ALUMINUM	396.15	0.0	0.0004837	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0299385	0.0	0.0	0.0
ANTIMONY	206.83	0.0000046	0.0	0.0000158	0.0	0.0000731	0.0053159	0.0	0.0	0.0	-0.0000148	-0.0004021	0.0	-0.0011428
ARSENIC	189.04	0.0000103	0.0	-0.0001057	0.0	0.0	0.0001984	0.0	0.0	0.0	0.0018390	0.0	0.0	0.0
BARIUM	455.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BERYLLIUM	313.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0006836	0.0000896
BORON	208.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0328838	0.0	0.0	0.0
CADMIUM	226.50	0.0	0.0	0.0000944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0001135	0.0000801	0.0
CALCIUM	315.89	0.0	0.0	0.0	0.0	0.0	-0.0002011	0.0007850	0.0	0.0	0.0	0.0	0.0	0.0
CHROMIUM	267.72	0.0	0.0	-0.0000006	0.0	0.0	0.0	0.0	0.0	0.0000828	0.0	0.0	0.0	-0.0000100
COBALT	228.62	0.0	0.0	0.0000045	0.0	0.0	-0.0001286	0.0	0.0	0.0	0.0	0.0001562	0.0022114	0.0
COPPER	327.40	0.0000079	0.0	-0.0000147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0006988	0.0002004
GOLD	242.79	0.0	0.0	0.0001110	0.0	0.0	0.0	0.0	0.0	0.0058700	0.0	0.0	0.0	0.0
IRON	259.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LEAD	220.35	-0.0000865	0.0	0.0000372	0.0	0.0	-0.0000772	-0.0000211	0.0000931	0.0	-0.0012809	0.0000645	-0.0000220	0.0
LITHIUM	670.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAGNESIUM	202.58	0.0	0.0	0.0000557	0.0	0.0	0.0	0.1395100	0.0	0.0	0.0145280	0.0	0.0001229	0.0
MANGANESE	257.61	0.0000017	0.0	0.0000273	0.0000391	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOLYBDENUM	202.03	0.0	0.0	0.0	0.0	0.0	0.0000270	0.0	0.0	-0.0000204	0.0	0.0	0.0	-0.0001163
NICKEL	231.60	0.0	0.0	-0.0000260	0.0	0.0	0.0	0.0001789	0.0	0.0	0.0011098	0.0	0.0	0.0
POTASSIUM	766.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SELENIUM	196.09	0.0000345	0.0	0.0000204	0.0	0.0000996	0.0	0.0002593	0.0	0.0003979	0.0	0.0	0.0	0.0001059
SILICON	251.61	0.0	0.0	-0.0000932	0.0	0.0	0.0	0.0	0.0	0.0	0.0093424	0.0	0.0253899	0.0
SILVER	328.07	0.0	0.0	-0.0003035	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0008413	0.0
SODIUM	589.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STRONTIUM	421.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THALLIUM	190.86	0.0000086	0.0	0.0000026	0.0	0.0	0.0	0.0014338	0.0001027	-0.0015199	-0.0000004	0.0	-0.0006457	-0.0032486
TIN	189.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TITANIUM	334.90	0.0	0.0	0.0	0.0	0.0	0.0001510	0.0	0.0	0.0	0.0002068	0.0	0.0	0.0
VANADIUM	292.40	0.0	0.0	0.0000127	0.0	0.0	-0.0026455	0.0	0.0	-0.0007989	-0.0089144	0.0	0.0003126	0.0
ZINC	206.20	0.0	0.0	0.0	0.0	0.0	-0.0010444	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FORM XI - IN

12

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 01/13/2020

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	5.00	500000	P
ARSENIC	45.00	20000	P
CALCIUM	5.00	500000	P
IRON	5.00	250000	P
MAGNESIUM	45.00	200000	P

FORM XII - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** NE18ICW2

Matrix: WATER **SDG Name:** SN3779

Method: P **Prep Date:** 05/18/2020

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWNE18ICW2	LCSWNE18ICW2	0.05	0.05	
PBWNE18ICW2	PBWNE18ICW2	0.05	0.05	
USCG OW-2	SN3779-001	0.05	0.05	A
USCG OW-1	SN3779-002	0.05	0.05	A
USCG MW-3	SN3779-003	0.05	0.05	A
USCG MW-1	SN3779-004	0.05	0.05	A
USCG EW-1	SN3779-005	0.05	0.05	A
USCG EW-1P	SN3779-005P	0.05	0.05	A
USCG EW-1S	SN3779-005S	0.05	0.05	A
USCG EW-2	SN3779-006	0.05	0.05	A
USCG MW-2	SN3779-007	0.05	0.05	A
USCG OW-1B	SN3779-008	0.05	0.05	A
USCG MW-3B	SN3779-009	0.05	0.05	A
USCG MW-1B	SN3779-010	0.05	0.05	A
USCG OW-2B	SN3779-011	0.05	0.05	A
USCG EW-1B	SN3779-012	0.05	0.05	A
USCG EW-1BD	SN3779-013	0.05	0.05	A
USCG EW-2B	SN3779-014	0.05	0.05	A
USCG MW-2B	SN3779-015	0.05	0.05	A
USCG EW-1C	SN3779-016	0.05	0.05	A
USCG EW-2C	SN3779-017	0.05	0.05	A

FORM XIII - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** NE21ICW2

Matrix: WATER **SDG Name:** SN3779

Method: P **Prep Date:** 05/21/2020

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWNE21ICW2	LCSWNE21ICW2	0.05	0.05	
PBWNE21ICW2	PBWNE21ICW2	0.05	0.05	
USCG MW-2C	SN3779-018	0.05	0.05	A
USCG MW-2CP	SN3779-018P	0.05	0.05	A
USCG MW-2CS	SN3779-018S	0.05	0.05	A
USCG MW-2CD	SN3779-019	0.05	0.05	A
USCG OW-1C	SN3779-020	0.05	0.05	A
USCG OW-2C	SN3779-021	0.05	0.05	A
USCG MW-1C	SN3779-022	0.05	0.05	A
USCG MW-3C	SN3779-023	0.05	0.05	A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE21A

Date: 05/21/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
Blank		1	15:37	AL	AS	CA	FE	MG
Std 1		1	15:41	AL	AS	CA	FE	MG
ICV		1	15:46	AL	AS	CA	FE	MG
ICB		1	15:50	AL	AS	CA	FE	MG
PQL		1	15:54	AL	AS	CA	FE	MG
ICSA		1	15:58	AL	AS	CA	FE	MG
ICSAB		1	16:04	AL	AS	CA	FE	MG
CCV		1	16:09	AL	AS	CA	FE	MG
CCB		1	16:13	AL	AS	CA	FE	MG
ZZZZZZ		1	16:17					
ZZZZZZ		1	16:26					
CCV		1	16:31	AL	AS	CA	FE	MG
CCB		1	16:35	AL	AS	CA	FE	MG
ZZZZZZ		50	16:40					
ZZZZZZ		1	16:44					
ZZZZZZ		1	16:48					
ZZZZZZ		1	16:52					
ZZZZZZ		2	16:57					
ZZZZZZ		1	17:01					
ZZZZZZ		1	17:06					
ZZZZZZ		1	17:10					
ZZZZZZ		5	17:15					
ZZZZZZ		5	17:19					
CCV		1	17:23	AL	AS	CA	FE	MG
CCB		1	17:27	AL	AS	CA	FE	MG
ZZZZZZ		5	17:32					
ZZZZZZ		5	17:36					

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ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE21A

Date: 05/21/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
ZZZZZZ		5	17:40					
ZZZZZZ		5	17:44					
PBWNE18ICW2		1	17:49		AS			
LCSWNE18ICW2		1	17:53		AS			
SN3779-001	USCG OW-2	1	17:57		AS			
SN3779-002	USCG OW-1	1	18:02		AS			
SN3779-003	USCG MW-3	1	18:06		AS			
SN3779-004	USCG MW-1	1	18:10		AS			
CCV		1	18:14	AL	AS	CA	FE	MG
CCB		1	18:19	AL	AS	CA	FE	MG
SN3779-005	USCG EW-1	1	18:23		AS			
SN3779-005L	USCG EW-1L	5	18:27		AS			
SN3779-005A	USCG EW-1A	1	18:31		AS			
SN3779-005S	USCG EW-1S	1	18:36		AS			
SN3779-005P	USCG EW-1P	1	18:40		AS			
SN3779-006	USCG EW-2	1	18:44		AS			
SN3779-007	USCG MW-2	1	18:48		AS			
SN3779-008	USCG OW-1B	1	18:53		AS			
SN3779-009	USCG MW-3B	1	18:57		AS			
SN3779-010	USCG MW-1B	1	19:01		AS			
CCV		1	19:05	AL	AS	CA	FE	MG
CCB		1	19:10	AL	AS	CA	FE	MG
SN3779-011	USCG OW-2B	1	19:14		AS			
SN3779-012	USCG EW-1B	1	19:18		AS			
SN3779-013	USCG EW-1BD	1	19:22		AS			
SN3779-014	USCG EW-2B	1	19:27		AS			
SN3779-015	USCG MW-2B	1	19:31		AS			

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE21A

Date: 05/21/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
SN3779-016	USCG EW-1C	1	19:35		AS			
SN3779-017	USCG EW-2C	1	19:40		AS			
ZZZZZZ		1	19:44					
ZZZZZZ		1	19:48					
ZZZZZZ		1	19:53					
CCV		1	19:57	AL	AS	CA	FE	MG
CCB		1	20:01	AL	AS	CA	FE	MG

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE22A

Date: 05/22/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
Blank		1	09:53	AL	AS	CA	FE	MG
Std 1		1	09:57	AL	AS	CA	FE	MG
ICV		1	10:01	AL	AS	CA	FE	MG
ICB		1	10:05	AL	AS	CA	FE	MG
PQL		1	10:10	AL	AS	CA	FE	MG
ICSA		1	10:14	AL	AS	CA	FE	MG
ICSAB		1	10:19	AL	AS	CA	FE	MG
CCV		1	10:24	AL	AS	CA	FE	MG
CCB		1	10:28	AL	AS	CA	FE	MG
ZZZZZZ		1	10:33					
ZZZZZZ		1	10:42					
CCV		1	10:48	AL	AS	CA	FE	MG
CCB		1	10:52	AL	AS	CA	FE	MG
ZZZZZZ		1	10:56					
ZZZZZZ		1	11:01					
ZZZZZZ		1	11:05					
ZZZZZZ		2	11:09					
ZZZZZZ		1	11:13					
ZZZZZZ		1	11:18					
ZZZZZZ		1	11:23					
ZZZZZZ		1	11:27					
ZZZZZZ		1	11:31					
ZZZZZZ		1	11:36					
CCV		1	11:41	AL	AS	CA	FE	MG
CCB		1	11:45	AL	AS	CA	FE	MG
ZZZZZZ		5	11:49					
ZZZZZZ		1	11:54					

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE22A

Date: 05/22/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
ZZZZZZ		1	11:58					
ZZZZZZ		1	12:02					
ZZZZZZ		1	12:06					
ZZZZZZ		1	12:11					
ZZZZZZ		1	12:15					
ZZZZZZ		1	12:19					
ZZZZZZ		1	12:23					
ZZZZZZ		1	12:28					
CCV		1	12:32	AL	AS	CA	FE	MG
CCB		1	12:36	AL	AS	CA	FE	MG
ZZZZZZ		1	12:41					
ZZZZZZ		1	12:45					
ZZZZZZ		1	12:50					
ZZZZZZ		1	12:54					
ZZZZZZ		1	12:58					
ZZZZZZ		1	13:03					
ZZZZZZ		1	13:08					
ZZZZZZ		1	13:13					
ZZZZZZ		1	13:17					
ZZZZZZ		1	13:22					
CCV		1	13:26	AL	AS	CA	FE	MG
CCB		1	13:30	AL	AS	CA	FE	MG
ZZZZZZ		1	13:34					
ZZZZZZ		1	13:39					
ZZZZZZ		1	13:43					
ZZZZZZ		1	13:47					
ZZZZZZ		5	13:51					

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE22A

Date: 05/22/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
ZZZZZZ		1	13:56					
ZZZZZZ		1	14:00					
ZZZZZZ		1	14:04					
ZZZZZZ		1	14:08					
ZZZZZZ		5	14:13					
CCV		1	14:17	AL	AS	CA	FE	MG
CCB		1	14:21	AL	AS	CA	FE	MG
ZZZZZZ		1	14:26					
ZZZZZZ		1	14:30					
ZZZZZZ		1	14:34					
ZZZZZZ		1	14:38					
ZZZZZZ		1	14:42					
ZZZZZZ		1	14:47					
ZZZZZZ		1	14:51					
ZZZZZZ		1	14:55					
ZZZZZZ		1	15:00					
ZZZZZZ		1	15:05					
CCV		1	15:11	AL	AS	CA	FE	MG
CCB		1	15:15	AL	AS	CA	FE	MG
PBWNE21ICW2		1	15:19		AS			
LCSWNE21ICW2		1	15:24		AS			
ZZZZZZ		1	15:28					
SN3779-018	USCG MW-2C	1	15:34		AS			
SN3779-018L	USCG MW-2CL	5	15:39		AS			
SN3779-018A	USCG MW-2CA	1	15:43		AS			
SN3779-018S	USCG MW-2CS	1	15:47		AS			
SN3779-018P	USCG MW-2CP	1	15:51		AS			

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SN3779

Instrument ID: THERMO ICAP 6500 **File Name:** INE22A

Date: 05/22/2020 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
SN3779-019	USCG MW-2CD	1	15:56		AS			
SN3779-020	USCG OW-1C	1	16:00		AS			
CCV		1	16:04	AL	AS	CA	FE	MG
CCB		1	16:08	AL	AS	CA	FE	MG
SN3779-021	USCG OW-2C	1	16:13		AS			
SN3779-022	USCG MW-1C	1	16:17		AS			
SN3779-023	USCG MW-3C	1	16:22		AS			
ZZZZZZ		1	16:26					
ZZZZZZ		1	16:30					
ZZZZZZ		1	16:35					
ZZZZZZ		1	16:39					
ZZZZZZ		1	16:43					
ZZZZZZ		1	16:48					
ZZZZZZ		1	16:53					
CCV		1	17:14	AL	AS	CA	FE	MG
CCB		1	17:18	AL	AS	CA	FE	MG

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: I (Thermo iCAP 6500) **ANALYST:** ~~MC~~ RS **ANALYSIS DATE:** 05/21/2020

METHOD: ICP **FILE NAME:** INE21A

- ☒ 200.7
- ☒ 6010
- ☒ DOD
- ☐ ______

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
____________ (initals) on ____________ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW19407	05/03/2020	05/03/2021	0 ug/L
Standard 1	MW19381	05/06/2020	08/06/2020	Varies by Element
ICV	MW19415	05/21/2020	08/21/2020	Varies by Element
PQL	MW19372	05/01/2020	08/01/2020	Varies by Element
LRS1	MW19361	04/28/2020	07/28/2020	Varies by Element
LRS2	MW19408	05/14/2020	08/14/2020	Varies by Element
ICSA	MW19391	05/11/2020	08/11/2020	Varies by Element
ICSAB	MW19393	05/11/2020	08/11/2020	Varies by Element
CCV	MW19414	05/19/2020	08/19/2020	Varies by Element
Internal Standard	MW19401	05/13/2020	08/13/2020	5.0 mg/L Yttrium

Additional Comments and Notes:

The opening PQL failed high for Sb, samples with concentrations below the PQL were accepted along with passing BQC. ✓

REVIEWED
AT 5/27/20
KATAHDIN ANALYTICAL
METALS SECTION

Dilutions: Some samples were diluted based on history or due to interfering element concentrations.

Dilution preparations are as follows:

2x diln.: 4.0mL of sample (pipet M25) + 4.0mL of MW19407 (pipet M25)

5x diln.: 1.6 mL of sample (pipet M25) + 6.4 mL of MW19407 (pipet M25)

Post Spike: 0.004mL MS2257 (pipet M17), 0.08mL MS2220 (pipet M27), 0.04mL MS2219 and MS2231(pipet M27), to 8.0mL of sample (pipet M25) (Unless otherwise specified).

INSTRUMENT RUNLOG

Instrument: ICAP 6500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Blank	1.000	INE21A	5/21/2020	15:37	RS
Std 1	1.000	INE21A	5/21/2020	15:41	RS
ICV	1.000	INE21A	5/21/2020	15:46	RS
ICB	1.000	INE21A	5/21/2020	15:50	RS
PQL	1.000	INE21A	5/21/2020	15:54	RS
ICSA	1.000	INE21A	5/21/2020	15:58	RS
ICSAB	1.000	INE21A	5/21/2020	16:04	RS
CCV	1.000	INE21A	5/21/2020	16:09	RS
CCB	1.000	INE21A	5/21/2020	16:13	RS
LRS1	1.000	INE21A	5/21/2020	16:17	RS
LRS2	1.000	INE21A	5/21/2020	16:26	RS
CCV	1.000	INE21A	5/21/2020	16:31	RS
CCB	1.000	INE21A	5/21/2020	16:35	RS
SN3667-002	50.00	INE21A	5/21/2020	16:40	RS
PBSNE18ICS2	1.000	INE21A	5/21/2020	16:44	RS
LCSONE18ICS2	1.000	INE21A	5/21/2020	16:48	RS
LC2ONE18ICS2	1.000	INE21A	5/21/2020	16:52	RS
SN3681-001	2.000	INE21A	5/21/2020	16:57	RS
SN3681-002	1.000	INE21A	5/21/2020	17:01	RS
PBWNE18ICW1	1.000	INE21A	5/21/2020	17:06	RS
LCSWNE18ICW1	1.000	INE21A	5/21/2020	17:10	RS
SN3734-001	5.000	INE21A	5/21/2020	17:15	RS
SN3734-002	5.000	INE21A	5/21/2020	17:19	RS
CCV	1.000	INE21A	5/21/2020	17:23	RS
CCB	1.000	INE21A	5/21/2020	17:27	RS
SN3736-001	5.000	INE21A	5/21/2020	17:32	RS
SN3736-002	5.000	INE21A	5/21/2020	17:36	RS
SN3736-003	5.000	INE21A	5/21/2020	17:40	RS
SN3736-004	5.000	INE21A	5/21/2020	17:44	RS
PBWNE18ICW2	1.000	INE21A	5/21/2020	17:49	RS
LCSWNE18ICW2	1.000	INE21A	5/21/2020	17:53	RS
SN3779-001	1.000	INE21A	5/21/2020	17:57	RS
SN3779-002	1.000	INE21A	5/21/2020	18:02	RS
SN3779-003	1.000	INE21A	5/21/2020	18:06	RS
SN3779-004	1.000	INE21A	5/21/2020	18:10	RS
CCV	1.000	INE21A	5/21/2020	18:14	RS
CCB	1.000	INE21A	5/21/2020	18:19	RS
SN3779-005	1.000	INE21A	5/21/2020	18:23	RS
SN3779-005L	5.000	INE21A	5/21/2020	18:27	RS
SN3779-005A	1.000	INE21A	5/21/2020	18:31	RS
SN3779-005S	1.000	INE21A	5/21/2020	18:36	RS
SN3779-005P	1.000	INE21A	5/21/2020	18:40	RS
SN3779-006	1.000	INE21A	5/21/2020	18:44	RS
SN3779-007	1.000	INE21A	5/21/2020	18:48	RS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SN3779-008	1.000	INE21A	5/21/2020	18:53	RS
SN3779-009	1.000	INE21A	5/21/2020	18:57	RS
SN3779-010	1.000	INE21A	5/21/2020	19:01	RS
CCV	1.000	INE21A	5/21/2020	19:05	RS
CCB	1.000	INE21A	5/21/2020	19:10	RS
SN3779-011	1.000	INE21A	5/21/2020	19:14	RS
SN3779-012	1.000	INE21A	5/21/2020	19:18	RS
SN3779-013	1.000	INE21A	5/21/2020	19:22	RS
SN3779-014	1.000	INE21A	5/21/2020	19:27	RS
SN3779-015	1.000	INE21A	5/21/2020	19:31	RS
SN3779-016	1.000	INE21A	5/21/2020	19:35	RS
SN3779-017	1.000	INE21A	5/21/2020	19:40	RS
PBSNE19ICS1	1.000	INE21A	5/21/2020	19:44	RS
LCSONE19ICS1	1.000	INE21A	5/21/2020	19:48	RS
LC2ONE19ICS1	1.000	INE21A	5/21/2020	19:53	RS
CCV	1.000	INE21A	5/21/2020	19:57	RS
CCB	1.000	INE21A	5/21/2020	20:01	RS
SN3762-001	1.000	INE21A	5/21/2020	20:05	RS
SN3763-023	1.000	INE21A	5/21/2020	20:10	RS
SN3763-027	1.000	INE21A	5/21/2020	20:14	RS
PBSNE19ICS2	1.000	INE21A	5/21/2020	20:18	RS
LCSONE19ICS2	1.000	INE21A	5/21/2020	20:22	RS
SN3617-006	1.000	INE21A	5/21/2020	20:27	RS
SN3617-012	1.000	INE21A	5/21/2020	20:31	RS
SN3617-018	1.000	INE21A	5/21/2020	20:35	RS
SN3680-004	1.000	INE21A	5/21/2020	20:39	RS
SN3680-008	1.000	INE21A	5/21/2020	20:44	RS
CCV	1.000	INE21A	5/21/2020	20:48	RS
CCB	1.000	INE21A	5/21/2020	20:52	RS
SN3680-012	1.000	INE21A	5/21/2020	20:57	RS
SN3697-001	1.000	INE21A	5/21/2020	21:02	RS
SN3697-002	1.000	INE21A	5/21/2020	21:06	RS
SN3697-003	1.000	INE21A	5/21/2020	21:11	RS
SN3697-003L	5.000	INE21A	5/21/2020	21:16	RS
SN3697-003A	1.000	INE21A	5/21/2020	21:20	RS
SN3697-003S	1.000	INE21A	5/21/2020	21:24	RS
SN3697-003P	1.000	INE21A	5/21/2020	21:28	RS
SN3697-004	1.000	INE21A	5/21/2020	21:33	RS
SN3697-005	1.000	INE21A	5/21/2020	21:37	RS
CCV	1.000	INE21A	5/21/2020	21:41	RS
CCB	1.000	INE21A	5/21/2020	21:46	RS
SN3763-024	1.000	INE21A	5/21/2020	21:50	RS
SN3763-028	1.000	INE21A	5/21/2020	21:55	RS
PBWNE19ICW1	1.000	INE21A	5/21/2020	22:00	RS
LCSWNE19ICW1	1.000	INE21A	5/21/2020	22:04	RS
SN3636-001	1.000	INE21A	5/21/2020	22:08	RS
SN3636-001L	5.000	INE21A	5/21/2020	22:12	RS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SN3636-001A	1.000	INE21A	5/21/2020	22:17	RS
SN3636-001S	1.000	INE21A	5/21/2020	22:21	RS
SN3636-001P	1.000	INE21A	5/21/2020	22:25	RS
SN3636-002	1.000	INE21A	5/21/2020	22:29	RS
CCV	1.000	INE21A	5/21/2020	22:34	RS
CCB	1.000	INE21A	5/21/2020	22:38	RS
SN3636-003	1.000	INE21A	5/21/2020	22:42	RS
SN3636-004	1.000	INE21A	5/21/2020	22:47	RS
SN3636-005	1.000	INE21A	5/21/2020	22:51	RS
SN3636-006	1.000	INE21A	5/21/2020	22:55	RS
SN3636-007	1.000	INE21A	5/21/2020	22:59	RS
SN3636-008	1.000	INE21A	5/21/2020	23:04	RS
SN3636-009	1.000	INE21A	5/21/2020	23:09	RS
SN3636-010	1.000	INE21A	5/21/2020	23:13	RS
SN3636-011	1.000	INE21A	5/21/2020	23:17	RS
SN3636-012	1.000	INE21A	5/21/2020	23:22	RS
CCV	1.000	INE21A	5/21/2020	23:26	RS
CCB	1.000	INE21A	5/21/2020	23:30	RS
SN3636-014	1.000	INE21A	5/21/2020	23:35	RS
SN3680-001	1.000	INE21A	5/21/2020	23:39	RS
SN3680-002	1.000	INE21A	5/21/2020	23:43	RS
SN3680-005	1.000	INE21A	5/21/2020	23:48	RS
SN3680-006	1.000	INE21A	5/21/2020	23:52	RS
PBWNE19ICW2	1.000	INE21A	5/21/2020	23:56	RS
LCSWNE19ICW2	1.000	INE21A	5/22/2020	0:01	RS
SN3680-009	1.000	INE21A	5/22/2020	0:05	RS
SN3680-010	1.000	INE21A	5/22/2020	0:10	RS
SN3763-001	1.000	INE21A	5/22/2020	0:14	RS
CCV	1.000	INE21A	5/22/2020	0:18	RS
CCB	1.000	INE21A	5/22/2020	0:22	RS
SN3763-002	1.000	INE21A	5/22/2020	0:27	RS
SN3763-003	1.000	INE21A	5/22/2020	0:31	RS
SN3763-004	1.000	INE21A	5/22/2020	0:36	RS
SN3763-005	1.000	INE21A	5/22/2020	0:40	RS
SN3763-006	1.000	INE21A	5/22/2020	0:45	RS
SN3763-007	1.000	INE21A	5/22/2020	0:49	RS
SN3763-008	1.000	INE21A	5/22/2020	0:53	RS
SN3763-009	1.000	INE21A	5/22/2020	0:58	RS
SN3763-009L	5.000	INE21A	5/22/2020	1:02	RS
SN3763-009A	1.000	INE21A	5/22/2020	1:07	RS
CCV	1.000	INE21A	5/22/2020	1:11	RS
CCB	1.000	INE21A	5/22/2020	1:15	RS
SN3763-009S	1.000	INE21A	5/22/2020	1:19	RS
SN3763-009P	1.000	INE21A	5/22/2020	1:24	RS
SN3763-010	1.000	INE21A	5/22/2020	1:28	RS
SN3763-011	1.000	INE21A	5/22/2020	1:33	RS
SN3763-012	1.000	INE21A	5/22/2020	1:37	RS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SN3763-013	1.000	INE21A	5/22/2020	1:41	RS
SN3763-014	1.000	INE21A	5/22/2020	1:46	RS
SN3763-016	1.000	INE21A	5/22/2020	1:50	RS
SN3763-017	1.000	INE21A	5/22/2020	1:55	RS
SN3763-025	1.000	INE21A	5/22/2020	1:59	RS
CCV	1.000	INE21A	5/22/2020	2:04	RS
CCB	1.000	INE21A	5/22/2020	2:08	RS
SN3763-026	1.000	INE21A	5/22/2020	2:12	RS
PBWNE19ICW3	1.000	INE21A	5/22/2020	2:17	RS
LCSWNE19ICW3	1.000	INE21A	5/22/2020	2:21	RS
SN3756-001	1.000	INE21A	5/22/2020	2:25	RS
SN3761-001	1.000	INE21A	5/22/2020	2:30	RS
SN3767-001	1.000	INE21A	5/22/2020	2:34	RS
SN3767-004	1.000	INE21A	5/22/2020	2:39	RS
SN3767-005	1.000	INE21A	5/22/2020	2:44	RS
CCV	1.000	INE21A	5/22/2020	2:48	RS
CCB	1.000	INE21A	5/22/2020	2:52	RS
PQL	1.000	INE21A	5/22/2020	2:57	RS
ICSA	1.000	INE21A	5/22/2020	3:01	RS
ICSAB	1.000	INE21A	5/22/2020	3:07	RS
CCV	1.000	INE21A	5/22/2020	3:12	RS
CCB	1.000	INE21A	5/22/2020	3:16	RS

Intensity Report

Author:

Published: 5/22/2020 7:01:01AM

Notes:

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Method Name: FAST-2016_NO_AU | Method Revision: 1,386

Analyst Name: RS

Acquire Date: 5/21/2020 3:37:40PM | Sample Type: Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.0002290	Cts/S	0.00001400	6.154	-51.85
Al3961_R		-0.001046	Cts/S	0.0004160	39.78	-15.32
As1891_A		-0.00009600	Cts/S	0.000005000	5.290	-1.385
B_2089_A		0.0002920	Cts/S	0.00002000	6.894	4.195
Ba4554_R		0.003955	Cts/S	0.0003500	8.842	57.99
Be3130_R		-0.0002540	Cts/S	0.0001230	48.37	-3.733
Ca3158_R		-0.001500	Cts/S	0.0001770	11.77	-22.00
Cd2265_A		-0.00007000	Cts/S	0.0001570	224.2	-1.010
Co2286_A		0.0008370	Cts/S	0.0001060	12.64	12.02
Cr2677_A		0.00001800	Cts/S	0.000009000	52.10	4.136
Cu3273_A		-0.0001820	Cts/S	0.00003100	16.98	-41.22
Fe2599_R		-0.00001500	Cts/S	0.0002130	1,450	-0.2231
K_7664_R		-0.009044	Cts/S	0.001681	18.59	-132.5
Li6707_R		0.002985	Cts/S	0.0005420	18.15	43.79
Mg2025_A		-0.0005270	Cts/S	0.00001600	3.081	-7.577
Mn2576_R		0.0001850	Cts/S	0.00002200	11.93	2.713
Mo2020_A		0.00002700	Cts/S	0.00002900	107.1	0.3932
Na5895_R		-0.004234	Cts/S	0.0007450	17.61	-62.04
Ni2316_A		-0.00006200	Cts/S	0.00002700	43.57	-0.8973
Pb2203_A		0.00003000	Cts/S	0.00004600	153.4	0.4286
Sb2068_A		0.00008500	Cts/S	0.000005000	6.084	1.217
Se1960_A		0.0003090	Cts/S	0.00002500	8.193	4.435
Si2516_R		0.001419	Cts/S	0.00001900	1.353	20.80
Sn1899_A		0.00009700	Cts/S	0.00005000	51.70	1.392
Sr4215_R		-0.001054	Cts/S	0.00004400	4.213	-15.45
Ti3349_A		-0.0001150	Cts/S	0.00006600	57.18	-26.07
Tl1908_A		-0.00007100	Cts/S	0.00002600	36.08	-1.025
V_2924_A		-0.00001600	Cts/S	0.000001000	3.568	-3.736
Zn2062_A		0.00005000	Cts/S	0.000003000	5.509	0.7210
Y_3600_R		14,661	Cts/S	73.611	0.50208	14,661
Y_2243_A		14,364	Cts/S	23.946	0.16671	14,364
Y_3600_A		226,750	Cts/S	2,191.5	0.96648	226,750

Std 1

Method Name: FAST-2016_NO_AU | Method Revision: 1,386

Analyst Name: RS

Acquire Date: 5/21/2020 3:41:57PM | Sample Type: Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1113	Cts/S	0.00002900	0.02642	24,130
Al3961_R		1.420	Cts/S	0.0007310	0.05144	20,820
As1891_A		0.04721	Cts/S	0.0001490	0.3147	663.6
B_2089_A		0.1419	Cts/S	0.00002100	0.01503	1,995
Ba4554_R		2.922	Cts/S	0.004116	0.1409	42,830
Be3130_R		4.432	Cts/S	0.000001000	0.00002300	64,980
Ca3158_R		1.846	Cts/S	0.0008030	0.04351	27,060
Cd2265_A		1.790	Cts/S	0.0001580	0.008806	25,170
Co2286_A		0.4454	Cts/S	0.0004990	0.1121	6,262
Cr2677_A		0.08711	Cts/S	0.0001420	0.1625	18,890
Cu3273_A		0.06932	Cts/S	0.0002500	0.3610	15,030
Fe2599_R		2.402	Cts/S	0.001033	0.04300	35,210
K_7664_R		0.9349	Cts/S	0.00001900	0.001996	13,710
Li6707_R		0.5670	Cts/S	0.002394	0.4223	8,313

Std 1

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 3:41:57PM	Sample Type:	Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Mg2025_A		0.8903	Cts/S	0.0002500	0.02810	12,520
Mn2576_R		0.5800	Cts/S	0.002294	0.3955	8,504
Mo2020_A		0.3555	Cts/S	0.0009680	0.2723	4,998
Na5895_R		2.607	Cts/S	0.0006750	0.02588	38,220
Ni2316_A		0.2332	Cts/S	0.0001730	0.07414	3,278
Pb2203_A		0.1296	Cts/S	0.0001040	0.08036	1,822
Sb2068_A		0.05885	Cts/S	0.00002200	0.03790	827.4
Se1960_A		0.03376	Cts/S	0.00005200	0.1547	474.6
Si2516_R		0.7426	Cts/S	0.002487	0.3349	10,890
Sn1899_A		0.07517	Cts/S	0.000005000	0.006851	1,057
Sr4215_R		3.787	Cts/S	0.003016	0.07963	55,520
Ti3349_A		0.1777	Cts/S	0.0003160	0.1779	38,540
Tl1908_A		0.07638	Cts/S	0.0001120	0.1461	1,074
V_2924_A		0.08063	Cts/S	0.0005780	0.7170	17,480
Zn2062_A		0.4912	Cts/S	0.0003340	0.06800	6,905
Y_3600_R		14,661	Cts/S	123.76	0.84417	14,661
Y_2243_A		14,058	Cts/S	28.115	0.19999	14,058
Y_3600_A		216,820	Cts/S	241.03	0.11116	216,820

ICV

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 3:46:04PM	Sample Type:	QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		401.2	ug/L	6.570	1.638	9,830
Al3961_R		9,927	ug/L	115.3	1.162	8,358
As1891_A		381.6	ug/L	0.6493	0.1701	258.9
B_2089_A		398.4	ug/L	1.197	0.3003	817.6
Ba4554_R		394.9	ug/L	1.888	0.4781	17,160
Be3130_R		404.9	ug/L	5.612	1.386	26,630
Ca3158_R		9,964	ug/L	79.65	0.7994	10,900
Cd2265_A		395.2	ug/L	0.7065	0.1788	10,200
Co2286_A		399.8	ug/L	1.152	0.2881	2,575
Cr2677_A		397.4	ug/L	6.037	1.519	7,646
Cu3273_A		391.7	ug/L	5.350	1.366	5,970
Fe2599_R		9,968	ug/L	128.2	1.286	14,210
K_7664_R		13,540	ug/L	111.9	0.8264	7,455
Li6707_R		401.4	ug/L	6.670	1.662	3,404
Mg2025_A		10,270	ug/L	9.201	0.08963	5,267
Mn2576_R		396.3	ug/L	4.614	1.164	3,413
Mo2020_A		390.2	ug/L	2.946	0.7549	2,001
Na5895_R		10,060	ug/L	92.36	0.9181	15,530
Ni2316_A		397.6	ug/L	0.6351	0.1597	1,336
Pb2203_A		400.6	ug/L	0.5736	0.1432	749.0
Sb2068_A	W	375.0	ug/L	7.326	1.954	318.9
Se1960_A		398.6	ug/L	0.7044	0.1767	196.7
Si2516_R		10,090	ug/L	76.43	0.7577	4,372
Sn1899_A		398.8	ug/L	0.7027	0.1762	433.2
Sr4215_R		396.4	ug/L	4.173	1.053	22,270
Ti3349_A		393.1	ug/L	5.977	1.520	15,410
Tl1908_A		405.6	ug/L	0.04320	0.01065	446.1
V_2924_A		392.0	ug/L	5.407	1.379	6,976
Zn2062_A		396.0	ug/L	0.6017	0.1519	2,806
Y_3600_R		14,839	Cts/S	17.277	0.11643	14,839
Y_2243_A		14,421	Cts/S	16.465	0.11417	14,421
Y_3600_A		220,810	Cts/S	2,586.5	1.1714	220,810

ICB

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 3:50:12PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1759	ug/L	0.2461	139.9	-47.23
Al3961_R		1.116	ug/L	2.472	221.6	-14.67
As1891_A		0.09311	ug/L	0.6056	650.4	-1.328
B_2089_A		0.8963	ug/L	0.4265	47.58	6.113
Ba4554_R		0.1977	ug/L	0.01126	5.697	67.93
Be3130_R		0.04732	ug/L	0.08330	176.0	-0.6369
Ca3158_R		-3.950	ug/L	8.206	207.7	-26.82
Cd2265_A		-0.008687	ug/L	0.01709	196.7	-1.231
Co2286_A		-0.03846	ug/L	0.09969	259.2	11.83
Cr2677_A		0.03345	ug/L	0.07957	237.9	4.768
Cu3273_A		0.1448	ug/L	0.007935	5.481	-38.76
Fe2599_R		6.544	ug/L	0.1073	1.640	9.203
K_7664_R		-1.979	ug/L	22.90	1,157	-136.6
Li6707_R		0.6787	ug/L	1.491	219.7	50.55
Mg2025_A		1.026	ug/L	1.806	176.0	-7.076
Mn2576_R		-0.4629	ug/L	0.02181	4.713	-1.249
Mo2020_A		2.341	ug/L	0.4834	20.65	12.42
Na5895_R		1.019	ug/L	12.05	1,183	-61.97
Ni2316_A		0.4457	ug/L	0.2799	62.79	0.6445
Pb2203_A		-0.9818	ug/L	0.2581	26.29	-1.416
Sb2068_A		4.214	ug/L	0.4821	11.44	4.820
Se1960_A		0.7499	ug/L	0.2277	30.37	4.820
Si2516_R		-0.8942	ug/L	21.49	2,403	20.83
Sn1899_A		0.08691	ug/L	0.05575	64.15	1.494
Sr4215_R		-0.3717	ug/L	0.1555	41.84	-36.86
Ti3349_A		-0.04403	ug/L	0.02015	45.77	-27.76
Tl1908_A		0.2324	ug/L	0.4056	174.5	-0.7747
V_2924_A		-0.02192	ug/L	0.1459	665.6	-4.362
Zn2062_A		-0.1219	ug/L	0.003473	2.850	-0.1405
Y_3600_R		14,989	Cts/S	164.21	1.0955	14,989
Y_2243_A		14,440	Cts/S	30.648	0.21225	14,440
Y_3600_A		225,920	Cts/S	47.716	0.021121	225,920

PQL

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 3:54:31PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		10.48	ug/L	0.04068	0.3883	214.0
Al3961_R		318.1	ug/L	7.578	2.382	251.5
As1891_A		8.914	ug/L	0.7153	8.025	4.745
B_2089_A		48.53	ug/L	0.4196	0.8647	102.7
Ba4554_R		5.525	ug/L	0.04360	0.7891	296.7
Be3130_R		5.049	ug/L	0.02333	0.4621	326.7
Ca3158_R		94.80	ug/L	1.424	1.502	81.35
Cd2265_A		5.057	ug/L	0.01698	0.3358	130.8
Co2286_A		10.37	ug/L	0.0005630	0.005429	79.40
Cr2677_A		10.08	ug/L	0.08830	0.8756	202.8
Cu3273_A		25.43	ug/L	0.1783	0.7011	358.9
Fe2599_R		106.1	ug/L	2.147	2.024	150.4
K_7664_R		1,009	ug/L	8.105	0.8030	429.5
Li6707_R		100.8	ug/L	1.052	1.044	884.5
Mg2025_A		110.9	ug/L	0.5661	0.5105	50.35
Mn2576_R		4.903	ug/L	0.001604	0.03272	44.72
Mo2020_A		10.26	ug/L	0.1541	1.502	53.53
Na5895_R		1,030	ug/L	7.921	0.7688	1,528
Ni2316_A		10.74	ug/L	0.2184	2.033	35.59

PQL

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 3:54:31PM　　Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		4.976	ug/L	0.2481	4.986	9.778
Sb2068_A	W	10.24	ug/L	0.05695	0.5563	9.170
Se1960_A		10.98	ug/L	1.547	14.09	9.843
Si2516_R		191.0	ug/L	4.639	2.428	103.0
Sn1899_A		101.2	ug/L	0.2944	0.2910	112.0
Sr4215_R		10.03	ug/L	0.2204	2.197	546.0
Ti3349_A		14.53	ug/L	0.2006	1.380	558.4
Tl1908_A		15.62	ug/L	0.1517	0.9709	16.34
V_2924_A		9.517	ug/L	0.1065	1.119	169.9
Zn2062_A		20.29	ug/L	0.05223	0.2574	145.9
Y_3600_R		14,777	Cts/S	110.57	0.74826	14,777
Y_2243_A		14,563	Cts/S	21.410	0.14702	14,563
Y_3600_A		226,210	Cts/S	768.91	0.33991	226,210

ICSA

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 3:58:47PM　　Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.487	ug/L	0.1115	7.498	-1,531
Al3961_R	R	474,400	ug/L	24.16	0.005092	387,600
As1891_A		1.168	ug/L	0.5069	43.41	-10.32
B_2089_A		0.3337	ug/L	0.05713	17.12	4.483
Ba4554_R		-0.1931	ug/L	0.2612	135.3	48.82
Be3130_R		-0.1720	ug/L	0.03841	22.33	-14.76
Ca3158_R	R	455,300	ug/L	5,306	1.165	484,300
Cd2265_A		1.373	ug/L	0.1371	9.986	228.9
Co2286_A		0.1702	ug/L	0.04066	23.90	11.59
Cr2677_A		1.432	ug/L	0.2268	15.83	26.39
Cu3273_A		0.1632	ug/L	0.06646	40.73	-19.26
Fe2599_R	R	184,000	ug/L	3,480	1.892	254,400
K_7664_R		78.03	ug/L	5.821	7.460	-87.77
Li6707_R		6.411	ug/L	2.034	31.73	95.02
Mg2025_A	R	427,700	ug/L	270.9	0.06335	201,700
Mn2576_R		-1.855	ug/L	0.3813	20.56	1.807
Mo2020_A		-0.6064	ug/L	0.1969	32.47	-2.505
Na5895_R		41.63	ug/L	4.805	11.54	1.654
Ni2316_A		0.7716	ug/L	0.3797	49.21	-16.23
Pb2203_A		-0.8986	ug/L	1.380	153.6	-88.42
Sb2068_A		1.743	ug/L	2.706	155.3	10.03
Se1960_A		1.275	ug/L	1.036	81.27	8.335
Si2516_R		-33.09	ug/L	2.448	7.399	11.49
Sn1899_A		1.456	ug/L	0.5041	34.61	2.748
Sr4215_R	W	4.794	ug/L	0.1663	3.470	246.2
Ti3349_A		1.875	ug/L	0.3415	18.21	43.31
Tl1908_A		-0.1139	ug/L	0.4716	414.1	-0.5420
V_2924_A		-0.9222	ug/L	0.02078	2.253	22.34
Zn2062_A		0.5049	ug/L	0.03514	6.960	3.965
Y_3600_R		14,395	Cts/S	5.8628	0.040728	14,395
Y_2243_A		13,320	Cts/S	15.861	0.11908	13,320
Y_3600_A		199,290	Cts/S	3,830.9	1.9223	199,290

ICSAB

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:04:06PM　　Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

ICSAB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:04:06PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		209.2	ug/L	2.799	1.338	3,116
Al3961_R	R	476,400	ug/L	7,623	1.600	391,000
As1891_A		98.35	ug/L	0.1288	0.1309	50.44
B_2089_A		471.7	ug/L	0.5862	0.1243	882.1
Ba4554_R		491.2	ug/L	1.523	0.3100	20,780
Be3130_R		489.6	ug/L	0.4292	0.08766	31,380
Ca3158_R	R	455,300	ug/L	729.3	0.1602	486,500
Cd2265_A		900.3	ug/L	0.9859	0.1095	21,370
Co2286_A		450.9	ug/L	0.004986	0.001106	2,648
Cr2677_A		472.1	ug/L	2.384	0.5050	8,186
Cu3273_A		491.2	ug/L	2.603	0.5298	6,775
Fe2599_R	R	184,400	ug/L	3,625	1.965	256,200
K_7664_R		20,400	ug/L	26.75	0.1311	11,010
Li6707_R		515.4	ug/L	0.9010	0.1748	4,246
Mg2025_A	R	434,600	ug/L	246.1	0.05662	202,400
Mn2576_R		463.7	ug/L	1.073	0.2314	3,907
Mo2020_A		462.8	ug/L	2.242	0.4845	2,164
Na5895_R		20,360	ug/L	33.42	0.1641	30,690
Ni2316_A		878.2	ug/L	2.225	0.2534	2,669
Pb2203_A		41.83	ug/L	0.05366	0.1283	-15.18
Sb2068_A		582.3	ug/L	1.114	0.1913	458.7
Se1960_A		53.72	ug/L	5.242	9.758	31.40
Si2516_R		1,908	ug/L	7.428	0.3894	830.0
Sn1899_A		452.2	ug/L	0.6227	0.1377	447.8
Sr4215_R		495.8	ug/L	0.7873	0.1588	27,140
Ti3349_A		481.2	ug/L	3.414	0.7094	17,010
Tl1908_A		84.91	ug/L	0.5004	0.5894	85.84
V_2924_A		475.4	ug/L	1.621	0.3409	7,667
Zn2062_A		893.8	ug/L	1.368	0.1531	5,778
Y_3600_R		14,460	Cts/S	85.206	0.58926	14,460
Y_2243_A		13,153	Cts/S	16.029	0.12186	13,153
Y_3600_A		199,050	Cts/S	1,072.2	0.53867	199,050

CCV

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:09:23PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		494.9	ug/L	7.543	1.524	12,180
Al3961_R		12,140	ug/L	50.74	0.4179	10,280
As1891_A		490.3	ug/L	3.711	0.7568	332.9
B_2089_A		490.9	ug/L	1.714	0.3492	1,006
Ba4554_R		489.1	ug/L	4.322	0.8837	21,340
Be3130_R		488.6	ug/L	2.337	0.4783	32,300
Ca3158_R		12,140	ug/L	53.41	0.4399	13,360
Cd2265_A		490.7	ug/L	2.103	0.4284	12,660
Co2286_A		497.0	ug/L	2.582	0.5195	3,196
Cr2677_A		495.8	ug/L	8.159	1.646	9,575
Cu3273_A		486.4	ug/L	10.49	2.156	7,452
Fe2599_R		12,190	ug/L	42.49	0.3486	17,470
K_7664_R		12,200	ug/L	120.6	0.9883	6,738
Li6707_R		484.8	ug/L	8.834	1.822	4,123
Mg2025_A		12,460	ug/L	65.42	0.5251	6,390
Mn2576_R		488.7	ug/L	0.1986	0.04064	4,230
Mo2020_A		492.8	ug/L	3.512	0.7128	2,525
Na5895_R		12,320	ug/L	67.55	0.5482	19,140
Ni2316_A		493.5	ug/L	2.739	0.5550	1,658

CCV

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:09:23PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		496.1	ug/L	2.017	0.4067	926.8
Sb2068_A		488.0	ug/L	1.542	0.3159	414.6
Se1960_A		494.1	ug/L	5.838	1.181	242.7
Si2516_R		12,400	ug/L	132.4	1.068	5,397
Sn1899_A		488.5	ug/L	3.167	0.6484	530.0
Sr4215_R		488.6	ug/L	3.146	0.6438	27,590
Ti3349_A		489.2	ug/L	8.617	1.761	19,260
Tl1908_A		505.4	ug/L	2.520	0.4986	555.9
V_2924_A		488.0	ug/L	9.573	1.962	8,718
Zn2062_A		490.0	ug/L	2.453	0.5007	3,469
Y_3600_R		14,917	Cts/S	20.004	0.13410	14,917
Y_2243_A		14,413	Cts/S	41.318	0.28667	14,413
Y_3600_A		221,670	Cts/S	3,183.0	1.4359	221,670

CCB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:13:31PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.5479	ug/L	0.2032	37.10	-37.00
Al3961_R		-4.274	ug/L	9.131	213.7	-18.77
As1891_A		0.3074	ug/L	0.6965	226.6	-1.178
B_2089_A		1.227	ug/L	0.2342	19.08	6.727
Ba4554_R		-0.01986	ug/L	0.05100	256.9	56.97
Be3130_R		-0.07807	ug/L	0.06222	79.71	-8.779
Ca3158_R		-1.920	ug/L	2.165	112.8	-24.01
Cd2265_A		-0.02542	ug/L	0.05810	228.5	-1.658
Co2286_A		-0.2048	ug/L	0.06486	31.67	10.73
Cr2677_A		-0.1255	ug/L	0.05503	43.84	1.606
Cu3273_A		-0.2196	ug/L	0.1379	62.81	-43.64
Fe2599_R		4.077	ug/L	3.263	80.03	5.518
K_7664_R		-38.31	ug/L	19.79	51.67	-153.4
Li6707_R		-1.659	ug/L	2.773	167.1	29.93
Mg2025_A		2.731	ug/L	1.497	54.82	-6.200
Mn2576_R		-0.05836	ug/L	0.08924	152.9	2.211
Mo2020_A		1.821	ug/L	0.4693	25.78	9.705
Na5895_R		1.931	ug/L	10.03	519.3	-58.92
Ni2316_A		0.3882	ug/L	0.2409	62.05	0.4390
Pb2203_A		0.3698	ug/L	0.3707	100.2	1.119
Sb2068_A		0.8556	ug/L	0.8701	101.7	1.943
Se1960_A		0.7913	ug/L	0.8689	109.8	4.822
Si2516_R		15.49	ug/L	11.33	73.12	27.33
Sn1899_A		0.4287	ug/L	0.6440	150.2	1.857
Sr4215_R		-0.3587	ug/L	0.04225	11.78	-35.27
Ti3349_A		-0.02527	ug/L	0.1227	485.5	-26.52
Tl1908_A		0.3057	ug/L	0.09786	32.02	-0.6926
V_2924_A		-0.2053	ug/L	0.1404	68.39	-7.515
Zn2062_A		-0.01904	ug/L	0.03254	170.9	0.5889
Y_3600_R		14,619	Cts/S	40.913	0.27985	14,619
Y_2243_A		14,388	Cts/S	51.964	0.36117	14,388
Y_3600_A		221,610	Cts/S	1,438.0	0.64891	221,610

LRS1

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:17:49PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LRS1

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:17:49PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A	R	2,197	ug/L	6.739	0.3067	52,940
Al3961_R		237.1	ug/L	5.564	2.347	358.7
As1891_A	RF	22,330	ug/L	38.88	0.1741	14,390
B_2089_A	R	21,690	ug/L	92.95	0.4285	41,110
Ba4554_R	R	21,190	ug/L	253.5	1.197	925,000
Be3130_R	R	20,830	ug/L	273.5	1.313	1,381,000
Ca3158_R		242.4	ug/L	5.124	2.114	260.0
Cd2265_A	R	20,860	ug/L	321.1	1.539	507,200
Co2286_A	R	22,010	ug/L	52.67	0.2393	133,000
Cr2677_A	R	21,120	ug/L	83.78	0.3968	396,800
Cu3273_A	R	20,960	ug/L	142.8	0.6814	314,300
Fe2599_R		776.2	ug/L	2.854	0.3677	1,115
K_7664_R		54.66	ug/L	9.651	17.66	-104.4
Li6707_R	R	20,780	ug/L	46.89	0.2257	175,400
Mg2025_A		-721.4	ug/L	28.78	3.990	1,179
Mn2576_R	R	20,810	ug/L	153.4	0.7371	180,500
Mo2020_A	R	5,508	ug/L	2.727	0.04950	26,620
Na5895_R		67.77	ug/L	4.600	6.787	42.53
Ni2316_A	R	21,980	ug/L	96.48	0.4391	69,380
Pb2203_A	RF	22,160	ug/L	90.99	0.4106	39,140
Sb2068_A	R	22,020	ug/L	82.18	0.3732	17,580
Se1960_A	RF	22,490	ug/L	51.44	0.2287	10,230
Si2516_R		486.8	ug/L	97.99	20.13	342.3
Sn1899_A	R	21,740	ug/L	62.95	0.2896	22,190
Sr4215_R	R	21,400	ug/L	415.9	1.943	1,213,000
Ti3349_A	R	20,830	ug/L	275.1	1.321	798,900
Tl1908_A	R	21,640	ug/L	52.08	0.2406	22,500
V_2924_A	R	20,800	ug/L	128.9	0.6198	363,300
Zn2062_A	R	21,310	ug/L	83.38	0.3913	142,300
Y_3600_R		14,961	Cts/S	171.45	1.1460	14,961
Y_2243_A		13,596	Cts/S	26.294	0.19340	13,596
Y_3600_A		215,780	Cts/S	771.61	0.35758	215,780

LRS2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:26:13PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.528	ug/L	1.193	78.09	-1,827
Al3961_R	R	473,600	ug/L	4,472	0.9444	381,700
As1891_A		2.849	ug/L	0.1252	4.393	-11.53
B_2089_A		25.44	ug/L	0.9797	3.851	49.77
Ba4554_R		0.9694	ug/L	0.006721	0.6934	96.32
Be3130_R		0.3213	ug/L	0.0003980	0.1238	16.03
Ca3158_R	R	460,900	ug/L	3,365	0.7301	483,500
Cd2265_A		1.951	ug/L	0.08650	4.434	281.1
Co2286_A		0.5821	ug/L	0.1598	27.46	13.64
Cr2677_A		0.5022	ug/L	0.01367	2.722	9.531
Cu3273_A		1.103	ug/L	0.03290	2.982	-14.66
Fe2599_R	R	226,700	ug/L	2,748	1.212	309,200
K_7664_R	R	289,500	ug/L	551.6	0.1905	155,100
Li6707_R		13.64	ug/L	0.9458	6.936	151.6
Mg2025_A	RF	173,100	ug/L	284.4	0.1643	79,540
Mn2576_R		16.77	ug/L	0.2458	1.465	83.14
Mo2020_A		5.820	ug/L	1.320	22.68	27.20
Na5895_R	R	194,500	ug/L	1,464	0.7529	288,400
Ni2316_A		1.248	ug/L	0.6285	50.34	-18.26

LRS2

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:26:13PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-3.805	ug/L	0.8056	21.17	-88.22
Sb2068_A		1.965	ug/L	0.04321	2.199	11.26
Se1960_A		8.331	ug/L	0.03969	0.4763	11.11
Si2516_R	R	46,660	ug/L	140.9	0.3019	19,270
Sn1899_A		3.971	ug/L	0.6757	17.02	5.126
Sr4215_R		2.694	ug/L	0.09396	3.488	130.0
Ti3349_A		12.77	ug/L	0.4846	3.794	416.5
Tl1908_A		0.8190	ug/L	0.4078	49.79	0.3405
V_2924_A		-0.6742	ug/L	0.1240	18.39	34.19
Zn2062_A		2.630	ug/L	0.08929	3.395	17.42
Y_3600_R		14,199	Cts/S	16.401	0.11551	14,199
Y_2243_A		12,975	Cts/S	16.985	0.13091	12,975
Y_3600_A		193,260	Cts/S	240.02	0.12420	193,260

CCV

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:31:43PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		501.4	ug/L	4.686	0.9346	12,380
Al3961_R		12,470	ug/L	2.103	0.01687	10,480
As1891_A		495.3	ug/L	7.943	1.604	336.1
B_2089_A		507.5	ug/L	5.443	1.073	1,039
Ba4554_R		503.0	ug/L	4.039	0.8030	21,800
Be3130_R		501.9	ug/L	2.533	0.5046	32,940
Ca3158_R		12,500	ug/L	15.24	0.1219	13,660
Cd2265_A		494.0	ug/L	6.719	1.360	12,740
Co2286_A		500.2	ug/L	7.134	1.426	3,215
Cr2677_A		501.6	ug/L	3.049	0.6079	9,716
Cu3273_A		496.3	ug/L	1.522	0.3066	7,629
Fe2599_R		12,520	ug/L	3.251	0.02596	17,820
K_7664_R		12,550	ug/L	89.56	0.7137	6,884
Li6707_R		497.9	ug/L	2.693	0.5408	4,203
Mg2025_A		12,560	ug/L	171.0	1.361	6,440
Mn2576_R		502.7	ug/L	0.2033	0.04044	4,320
Mo2020_A		496.6	ug/L	9.385	1.890	2,543
Na5895_R		12,650	ug/L	8.821	0.06971	19,510
Ni2316_A		497.4	ug/L	7.465	1.501	1,670
Pb2203_A		498.9	ug/L	5.358	1.074	931.5
Sb2068_A		492.0	ug/L	6.640	1.350	417.7
Se1960_A		495.8	ug/L	8.411	1.697	243.3
Si2516_R	W	13,580	ug/L	94.93	0.6991	5,867
Sn1899_A		492.7	ug/L	6.880	1.396	534.2
Sr4215_R		502.1	ug/L	0.3554	0.07078	28,160
Ti3349_A		498.2	ug/L	4.528	0.9089	19,680
Tl1908_A		508.7	ug/L	6.339	1.246	559.2
V_2924_A		497.6	ug/L	2.319	0.4660	8,919
Zn2062_A		493.4	ug/L	6.432	1.303	3,491
Y_3600_R		14,811	Cts/S	61.737	0.41682	14,811
Y_2243_A		14,405	Cts/S	143.76	0.99800	14,405
Y_3600_A		222,340	Cts/S	251.77	0.11324	222,340

CCB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:35:51PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 4:35:51PM	Sample Type:	QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.5637	ug/L	0.02636	4.676	-36.71
Al3961_R		-2.251	ug/L	3.080	136.9	-17.64
As1891_A		-0.2814	ug/L	0.2496	88.72	-1.578
B_2089_A	W	10.68	ug/L	0.6989	6.541	25.59
Ba4554_R		0.06154	ug/L	0.06122	99.48	62.32
Be3130_R		-0.08610	ug/L	0.01631	18.94	-9.587
Ca3158_R		-2.674	ug/L	4.940	184.7	-25.63
Cd2265_A		-0.02935	ug/L	0.05415	184.5	-1.762
Co2286_A		-0.1645	ug/L	0.2313	140.6	10.99
Cr2677_A		-0.2308	ug/L	0.1215	52.65	-0.4215
Cu3273_A		-0.1395	ug/L	0.5632	403.8	-42.52
Fe2599_R		2.912	ug/L	1.141	39.19	3.982
K_7664_R		21.13	ug/L	27.12	128.4	-124.1
Li6707_R		0.9642	ug/L	0.7008	72.68	53.13
Mg2025_A		-0.9739	ug/L	2.575	264.4	-8.077
Mn2576_R		-0.1755	ug/L	0.1434	81.73	1.246
Mo2020_A		2.144	ug/L	0.2592	12.09	11.36
Na5895_R		16.83	ug/L	4.217	25.06	-37.26
Ni2316_A		0.2842	ug/L	0.2974	104.6	0.09897
Pb2203_A		-0.1264	ug/L	0.01851	14.65	0.1895
Sb2068_A		0.3495	ug/L	0.5711	163.4	1.514
Se1960_A		1.731	ug/L	0.7111	41.09	5.272
Si2516_R		10.18	ug/L	13.74	134.9	25.80
Sn1899_A		-0.009975	ug/L	0.4618	4,630	1.383
Sr4215_R		-0.3938	ug/L	0.1257	31.91	-38.42
Ti3349_A		0.1473	ug/L	0.2745	186.4	-19.73
Tl1908_A		-0.09760	ug/L	0.1086	111.3	-1.134
V_2924_A		-0.1333	ug/L	0.4216	316.3	-6.276
Zn2062_A		-0.05322	ug/L	0.08823	165.8	0.3470
Y_3600_R		15,069	Cts/S	229.59	1.5236	15,069
Y_2243_A		14,382	Cts/S	18.702	0.13004	14,382
Y_3600_A		222,150	Cts/S	508.53	0.22892	222,150

SN3667-002

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 4:40:09PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		16.25	ug/L	5.747	35.36	-41.18
Al3961_R		650.0	ug/L	20.37	3.135	-3.202
As1891_A		28.17	ug/L	7.948	28.22	-0.9659
B_2089_A		436.9	ug/L	5.396	1.235	21.55
Ba4554_R		78.31	ug/L	12.89	16.46	125.7
Be3130_R		-5.346	ug/L	3.027	56.62	-10.76
Ca3158_R		57,880	ug/L	556.6	0.9616	1,240
Cd2265_A		1.336	ug/L	0.04357	3.262	-0.3083
Co2286_A		-5.284	ug/L	4.629	87.60	10.95
Cr2677_A		0.1952	ug/L	5.257	2,694	3.972
Cu3273_A		-7.726	ug/L	2.185	28.28	-41.23
Fe2599_R		212.1	ug/L	9.985	4.709	5.793
K_7664_R	W	8,431,000	ug/L	64,920	0.7700	93,790
Li6707_R		3,272	ug/L	22.68	0.6932	588.4
Mg2025_A		50.56	ug/L	76.70	151.7	-6.693
Mn2576_R		5.158	ug/L	12.83	248.7	3.613
Mo2020_A		851.3	ug/L	2.358	0.2770	84.31
Na5895_R	W	1,354,000	ug/L	10,010	0.7394	41,650
Ni2316_A		38.15	ug/L	9.590	25.14	1.963

SN3667-002

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:40:09PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-8.251	ug/L	1.837	22.26	0.08538
Sb2068_A		-19.82	ug/L	7.656	38.62	0.8410
Se1960_A		-36.97	ug/L	42.53	115.0	3.941
Si2516_R		1,235	ug/L	289.6	23.45	31.55
Sn1899_A		4.847	ug/L	14.33	295.7	1.447
Sr4215_R		2,388	ug/L	11.10	0.4648	2,653
Ti3349_A		-7.500	ug/L	8.080	107.7	-29.99
Tl1908_A		17.70	ug/L	12.77	72.16	-0.6174
V_2924_A		-20.75	ug/L	0.7267	3.501	-12.42
Zn2062_A		407.1	ug/L	1.217	0.2989	56.19
Y_3600_R		14,750	Cts/S	35.035	0.23752	14,750
Y_2243_A		13,865	Cts/S	154.89	1.1171	13,865
Y_3600_A		214,340	Cts/S	315.25	0.14708	214,340

PBSNE18ICS2

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:44:27PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4213	ug/L	0.4157	98.68	-40.77
Al3961_R		13.89	ug/L	3.343	24.06	-3.794
As1891_A		-0.5248	ug/L	0.2912	55.49	-1.771
B_2089_A		8.011	ug/L	0.02658	0.3318	20.51
Ba4554_R		0.4417	ug/L	0.05751	13.02	77.85
Be3130_R		-0.05851	ug/L	0.02933	50.13	-7.643
Ca3158_R		10.53	ug/L	1.110	10.54	-10.73
Cd2265_A		-0.004809	ug/L	0.03657	760.5	-1.129
Co2286_A		-0.2264	ug/L	0.2556	112.9	10.74
Cr2677_A		0.2545	ug/L	0.1223	48.07	9.047
Cu3273_A		0.4870	ug/L	0.4576	93.97	-33.14
Fe2599_R		16.68	ug/L	4.060	24.33	23.57
K_7664_R		87.89	ug/L	15.47	17.60	-85.02
Li6707_R		2.120	ug/L	0.9726	45.87	62.09
Mg2025_A		18.02	ug/L	0.1181	0.6554	1.608
Mn2576_R		0.006882	ug/L	0.04097	595.3	2.807
Mo2020_A		0.8059	ug/L	0.1040	12.91	4.584
Na5895_R		57.57	ug/L	5.816	10.10	26.44
Ni2316_A		0.2403	ug/L	0.05708	23.75	-0.08135
Pb2203_A		-0.4843	ug/L	0.4962	102.5	-0.4844
Sb2068_A		-0.2276	ug/L	0.6534	287.0	0.7995
Se1960_A		0.3116	ug/L	0.5533	177.5	4.659
Si2516_R		12.49	ug/L	4.280	34.28	26.45
Sn1899_A		26.71	ug/L	0.6283	2.352	30.69
Sr4215_R		-0.2182	ug/L	0.2019	92.55	-27.94
Ti3349_A		0.1209	ug/L	0.3674	303.9	-20.99
Tl1908_A		0.1342	ug/L	0.2162	161.1	-0.8944
V_2924_A		-0.2984	ug/L	0.5580	187.0	-9.245
Zn2062_A		2.893	ug/L	0.02176	0.7522	21.49
Y_3600_R		14,847	Cts/S	31.236	0.21038	14,847
Y_2243_A		14,598	Cts/S	70.577	0.48346	14,598
Y_3600_A		224,320	Cts/S	952.26	0.42451	224,320

LCSONE18ICS2

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:48:46PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LCSONE18ICS2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:48:46PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		48.99	ug/L	0.04747	0.09688	1,155
Al3961_R		1,952	ug/L	3.080	0.1578	1,641
As1891_A		99.29	ug/L	0.8390	0.8451	65.93
B_2089_A		474.9	ug/L	1.723	0.3629	950.5
Ba4554_R		1,961	ug/L	4.605	0.2349	85,390
Be3130_R		49.58	ug/L	0.06444	0.1300	3,273
Ca3158_R		2,472	ug/L	13.10	0.5299	2,703
Cd2265_A		246.9	ug/L	0.6898	0.2794	6,319
Co2286_A		507.7	ug/L	2.496	0.4917	3,242
Cr2677_A		200.3	ug/L	0.3697	0.1846	3,877
Cu3273_A		246.1	ug/L	1.561	0.6340	3,757
Fe2599_R		1,007	ug/L	5.210	0.5175	1,442
K_7664_R		9,959	ug/L	2.806	0.02817	5,475
Li6707_R		495.9	ug/L	2.618	0.5279	4,217
Mg2025_A		5,035	ug/L	16.41	0.3259	2,580
Mn2576_R		489.7	ug/L	0.2153	0.04397	4,240
Mo2020_A		102.3	ug/L	0.9090	0.8887	520.4
Na5895_R		7,559	ug/L	13.70	0.1812	11,720
Ni2316_A		499.9	ug/L	0.3779	0.07559	1,660
Pb2203_A		99.73	ug/L	0.1430	0.1434	185.4
Sb2068_A		99.76	ug/L	0.7939	0.7958	81.25
Se1960_A		99.60	ug/L	0.4497	0.4515	52.17
Si2516_R		936.5	ug/L	0.7174	0.07660	429.5
Sn1899_A		528.0	ug/L	1.600	0.3030	568.6
Sr4215_R		501.1	ug/L	2.018	0.4027	28,300
Ti3349_A		497.2	ug/L	0.3115	0.06265	19,590
Tl1908_A		100.9	ug/L	0.6163	0.6107	110.4
V_2924_A		488.0	ug/L	0.6671	0.1367	8,783
Zn2062_A		488.5	ug/L	0.8245	0.1688	3,436
Y_3600_R		14,917	Cts/S	75.841	0.50841	14,917
Y_2243_A		14,309	Cts/S	48.131	0.33638	14,309
Y_3600_A		222,010	Cts/S	598.31	0.26950	222,010

LC2ONE18ICS2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:52:57PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		49.44	ug/L	0.03219	0.06510	1,154
Al3961_R		1,987	ug/L	3.529	0.1776	1,663
As1891_A		98.83	ug/L	1.612	1.631	65.53
B_2089_A		473.2	ug/L	1.917	0.4052	946.1
Ba4554_R		1,980	ug/L	26.10	1.318	85,850
Be3130_R		49.85	ug/L	0.02636	0.05287	3,278
Ca3158_R		2,474	ug/L	20.72	0.8378	2,693
Cd2265_A		247.1	ug/L	1.335	0.5402	6,314
Co2286_A		509.7	ug/L	2.365	0.4641	3,250
Cr2677_A		202.9	ug/L	0.8378	0.4128	3,888
Cu3273_A		248.6	ug/L	1.173	0.4718	3,756
Fe2599_R		1,010	ug/L	2.058	0.2039	1,440
K_7664_R		9,996	ug/L	112.6	1.126	5,471
Li6707_R		495.8	ug/L	2.284	0.4607	4,198
Mg2025_A		5,011	ug/L	30.01	0.5987	2,565
Mn2576_R		493.7	ug/L	3.060	0.6199	4,256
Mo2020_A		102.2	ug/L	0.5316	0.5201	519.4
Na5895_R		7,588	ug/L	17.69	0.2331	11,710
Ni2316_A		501.6	ug/L	2.294	0.4572	1,663

LC2ONE18ICS2

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:52:57PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		100.2	ug/L	0.7920	0.7905	186.0
Sb2068_A		99.99	ug/L	0.2530	0.2531	81.38
Se1960_A		100.3	ug/L	0.9847	0.9817	52.45
Si2516_R		963.5	ug/L	10.65	1.105	439.3
Sn1899_A		525.4	ug/L	3.238	0.6163	565.0
Sr4215_R		501.9	ug/L	1.351	0.2692	28,220
Ti3349_A		501.2	ug/L	1.177	0.2348	19,550
Tl1908_A		100.4	ug/L	0.7605	0.7572	109.8
V_2924_A		492.2	ug/L	3.273	0.6650	8,769
Zn2062_A		490.0	ug/L	2.916	0.5950	3,442
Y_3600_R		14,853	Cts/S	210.41	1.4166	14,853
Y_2243_A		14,291	Cts/S	78.462	0.54905	14,291
Y_3600_A		219,750	Cts/S	184.55	0.083981	219,750

SN3681-001

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 4:57:07PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		15.22	ug/L	0.1061	0.6973	-1,232
Al3961_R	W	157,400	ug/L	446.9	0.2839	66,750
As1891_A		13.19	ug/L	2.685	20.35	-5.029
B_2089_A		15.02	ug/L	2.185	14.55	19.52
Ba4554_R		1,607	ug/L	12.48	0.7769	35,120
Be3130_R		1.373	ug/L	0.2459	17.91	-348.4
Ca3158_R		13,640	ug/L	97.57	0.7154	7,516
Cd2265_A		0.3400	ug/L	0.01803	5.302	171.9
Co2286_A		103.9	ug/L	0.6512	0.6266	450.2
Cr2677_A		350.7	ug/L	2.595	0.7400	3,408
Cu3273_A		389.5	ug/L	4.443	1.141	2,862
Fe2599_R	W	256,400	ug/L	423.8	0.1653	184,200
K_7664_R	W	95,650	ug/L	298.5	0.3120	26,880
Li6707_R		200.8	ug/L	6.923	3.448	891.8
Mg2025_A	W	87,630	ug/L	130.5	0.1489	22,590
Mn2576_R	W	4,449	ug/L	29.07	0.6536	19,280
Mo2020_A		5.399	ug/L	0.1106	2.049	13.97
Na5895_R		3,886	ug/L	22.45	0.5776	2,973
Ni2316_A		167.1	ug/L	0.06655	0.03984	267.5
Pb2203_A		23.31	ug/L	0.6194	2.657	13.14
Sb2068_A		2.880	ug/L	2.976	103.3	7.727
Se1960_A		1.373	ug/L	2.832	206.3	5.888
Si2516_R		2,981	ug/L	3.083	0.1034	713.2
Sn1899_A		30.14	ug/L	1.028	3.412	17.88
Sr4215_R		53.24	ug/L	0.06038	0.1134	1,493
Ti3349_A	W	17,850	ug/L	123.7	0.6934	353,300
Tl1908_A		-6.999	ug/L	1.524	21.78	-16.72
V_2924_A		640.4	ug/L	7.703	1.203	5,916
Zn2062_A		446.8	ug/L	0.03354	0.007508	1,598
Y_3600_R		14,959	Cts/S	27.878	0.18637	14,959
Y_2243_A		14,556	Cts/S	6.7303	0.046237	14,556
Y_3600_A		222,810	Cts/S	630.58	0.28301	222,810

SN3681-002

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:01:23PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3681-002

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:01:23PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		5.752	ug/L	1.705	29.64	-1,711
Al3961_R	W	127,800	ug/L	188.3	0.1474	110,800
As1891_A		7.529	ug/L	0.02239	0.2973	-6.858
B_2089_A		8.021	ug/L	0.1440	1.795	20.57
Ba4554_R	W	1,380	ug/L	3.143	0.2277	61,660
Be3130_R		0.9542	ug/L	0.1139	11.93	-537.5
Ca3158_R		11,210	ug/L	30.99	0.2765	12,650
Cd2265_A		0.4083	ug/L	0.1279	31.33	233.7
Co2286_A		78.19	ug/L	0.8860	1.133	670.5
Cr2677_A		137.0	ug/L	2.434	1.776	2,626
Cu3273_A		156.0	ug/L	1.751	1.123	2,180
Fe2599_R	RW	167,800	ug/L	3,260	1.943	246,500
K_7664_R	W	58,440	ug/L	48.69	0.08332	33,610
Li6707_R		143.7	ug/L	1.266	0.8812	1,285
Mg2025_A	W	55,010	ug/L	287.5	0.5226	28,400
Mn2576_R	W	2,348	ug/L	2.349	0.1001	20,800
Mo2020_A		2.586	ug/L	0.2673	10.34	13.35
Na5895_R		1,103	ug/L	1.691	0.1533	1,697
Ni2316_A		110.4	ug/L	0.2442	0.2212	354.3
Pb2203_A		23.67	ug/L	0.7136	3.014	27.28
Sb2068_A		2.271	ug/L	0.6419	28.26	9.695
Se1960_A		-1.258	ug/L	1.052	83.60	5.357
Si2516_R		2,170	ug/L	10.94	0.5039	1,053
Sn1899_A		28.05	ug/L	0.09121	0.3252	32.10
Sr4215_R		26.76	ug/L	0.02304	0.08607	1,535
Ti3349_A	RW	13,280	ug/L	119.3	0.8985	518,000
Tl1908_A		-5.170	ug/L	0.3970	7.679	-23.31
V_2924_A		372.9	ug/L	5.371	1.440	6,835
Zn2062_A		283.2	ug/L	1.459	0.5151	2,029
Y_3600_R		15,296	Cts/S	16.484	0.10776	15,296
Y_2243_A		14,574	Cts/S	34.194	0.23463	14,574
Y_3600_A		219,590	Cts/S	3,166.6	1.4420	219,590

PBWNE18ICW1

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:06:30PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.06366	ug/L	0.4583	719.9	-49.39
Al3961_R		23.59	ug/L	2.726	11.56	4.325
As1891_A		-0.6717	ug/L	0.9110	135.6	-1.854
B_2089_A		3.193	ug/L	0.05255	1.646	10.64
Ba4554_R		-0.1156	ug/L	0.3493	302.1	53.83
Be3130_R		-0.1129	ug/L	0.002858	2.531	-11.33
Ca3158_R		-4.235	ug/L	5.771	136.3	-26.86
Cd2265_A		-0.05707	ug/L	0.02478	43.42	-2.466
Co2286_A		-0.1196	ug/L	0.1940	162.2	11.36
Cr2677_A		-0.08241	ug/L	0.04490	54.48	2.446
Cu3273_A		1.149	ug/L	0.5555	48.34	-22.61
Fe2599_R		18.76	ug/L	1.919	10.23	26.56
K_7664_R		16.94	ug/L	46.20	272.7	-125.0
Li6707_R		-0.2680	ug/L	2.045	763.0	41.92
Mg2025_A		17.49	ug/L	0.6971	3.985	1.325
Mn2576_R		0.1489	ug/L	0.1160	77.89	4.019
Mo2020_A		0.3939	ug/L	0.1524	38.69	2.420
Na5895_R		23.99	ug/L	15.53	64.76	-25.44
Ni2316_A		0.02905	ug/L	0.08721	300.3	-0.7985

PBWNE18ICW1

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:06:30PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.5960	ug/L	0.5731	96.16	-0.6963
Sb2068_A		-0.4537	ug/L	0.6795	149.8	0.8337
Se1960_A		0.09459	ug/L	1.099	1,162	4.514
Si2516_R		7.658	ug/L	12.66	165.3	24.42
Sn1899_A		0.6765	ug/L	0.1047	15.48	2.137
Sr4215_R		-0.1917	ug/L	0.02334	12.17	-26.44
Ti3349_A		2.711	ug/L	0.4605	16.99	81.38
Tl1908_A		0.001559	ug/L	0.4615	29,610	-1.036
V_2924_A		-0.1438	ug/L	0.1073	74.61	-6.251
Zn2062_A		1.569	ug/L	0.07328	4.670	11.89
Y_3600_R		14,844	Cts/S	262.78	1.7703	14,844
Y_2243_A		14,465	Cts/S	78.292	0.54127	14,465
Y_3600_A		222,110	Cts/S	588.72	0.26506	222,110

LCSWNE18ICW1

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:10:48PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.45	ug/L	0.1963	0.3674	1,239
Al3961_R		2,144	ug/L	17.67	0.8240	1,759
As1891_A		102.5	ug/L	0.1726	0.1684	68.24
B_2089_A		490.6	ug/L	3.243	0.6610	983.8
Ba4554_R		2,124	ug/L	7.559	0.3558	90,230
Be3130_R		52.55	ug/L	0.2877	0.5474	3,384
Ca3158_R		2,610	ug/L	6.247	0.2393	2,784
Cd2265_A		254.0	ug/L	1.355	0.5335	6,513
Co2286_A		528.5	ug/L	2.152	0.4072	3,381
Cr2677_A		213.9	ug/L	0.3889	0.1818	4,054
Cu3273_A		265.0	ug/L	0.2005	0.07567	3,963
Fe2599_R		1,076	ug/L	8.430	0.7833	1,504
K_7664_R		10,480	ug/L	34.93	0.3332	5,627
Li6707_R		524.0	ug/L	4.309	0.8223	4,342
Mg2025_A		5,227	ug/L	28.43	0.5438	2,685
Mn2576_R		527.0	ug/L	3.121	0.5922	4,449
Mo2020_A		104.3	ug/L	0.6530	0.6263	531.5
Na5895_R		8,001	ug/L	9.688	0.1211	12,100
Ni2316_A		521.2	ug/L	2.174	0.4171	1,734
Pb2203_A		103.0	ug/L	0.06811	0.06616	191.8
Sb2068_A		102.3	ug/L	0.3099	0.3030	83.72
Se1960_A		103.0	ug/L	1.062	1.031	53.92
Si2516_R		1,079	ug/L	2.161	0.2004	479.0
Sn1899_A		514.8	ug/L	0.9921	0.1927	555.6
Sr4215_R		529.7	ug/L	2.433	0.4593	29,170
Ti3349_A		528.3	ug/L	0.02793	0.005286	20,380
Tl1908_A		104.8	ug/L	1.190	1.135	115.0
V_2924_A		521.9	ug/L	0.05731	0.01098	9,198
Zn2062_A		509.7	ug/L	2.353	0.4617	3,592
Y_3600_R		14,546	Cts/S	62.850	0.43206	14,546
Y_2243_A		14,338	Cts/S	19.368	0.13509	14,338
Y_3600_A		217,350	Cts/S	157.25	0.072348	217,350

SN3734-001

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:15:00PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3734-001

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 5:15:00PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.183	ug/L	1.004	84.81	-44.19
Al3961_R		26.82	ug/L	16.78	62.57	-5.640
As1891_A		0.3496	ug/L	3.719	1,064	-1.318
B_2089_A		28.54	ug/L	2.980	10.44	15.51
Ba4554_R		16.89	ug/L	0.7569	4.482	207.0
Be3130_R		-0.4779	ug/L	0.3932	82.28	-10.17
Ca3158_R		37,000	ug/L	35.24	0.09525	8,176
Cd2265_A		-0.2502	ug/L	0.09008	36.00	-2.242
Co2286_A		1.547	ug/L	0.4710	30.44	13.78
Cr2677_A		1.464	ug/L	0.5018	34.28	9.835
Cu3273_A		6.804	ug/L	1.358	19.95	-18.97
Fe2599_R		94.76	ug/L	7.211	7.610	27.07
K_7664_R		3,586	ug/L	76.71	2.139	270.4
Li6707_R		2.944	ug/L	4.266	144.9	49.75
Mg2025_A		3,617	ug/L	29.52	0.8161	355.0
Mn2576_R		988.0	ug/L	2.314	0.2342	1,721
Mo2020_A		22.10	ug/L	0.6785	3.070	22.60
Na5895_R	W	342,800	ug/L	1,313	0.3829	107,300
Ni2316_A		8.158	ug/L	1.336	16.37	4.566
Pb2203_A		-2.061	ug/L	1.284	62.30	-0.3425
Sb2068_A		-2.770	ug/L	3.171	114.5	0.7295
Se1960_A		-2.749	ug/L	4.893	178.0	4.158
Si2516_R		6,315	ug/L	28.67	0.4540	571.3
Sn1899_A		2.873	ug/L	2.404	83.70	1.982
Sr4215_R		207.1	ug/L	1.113	0.5374	2,337
Ti3349_A		1.108	ug/L	0.9479	85.56	-16.44
Tl1908_A		0.08081	ug/L	2.595	3,212	-1.212
V_2924_A		-0.5665	ug/L	0.5234	92.39	-7.252
Zn2062_A		3.890	ug/L	0.09332	2.399	6.119
Y_3600_R		14,993	Cts/S	49.684	0.33138	14,993
Y_2243_A		14,147	Cts/S	13.155	0.092986	14,147
Y_3600_A		217,970	Cts/S	379.44	0.17408	217,970

SN3734-002

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 5:19:19PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.807	ug/L	2.155	119.2	-82.99
Al3961_R		135.5	ug/L	4.592	3.388	15.73
As1891_A		6.364	ug/L	10.79	169.5	-0.8061
B_2089_A		29.17	ug/L	2.068	7.090	15.95
Ba4554_R		34.11	ug/L	0.1969	0.5772	354.9
Be3130_R		-0.3039	ug/L	0.3524	116.0	-8.177
Ca3158_R		57,020	ug/L	36.69	0.06434	12,520
Cd2265_A		-0.1848	ug/L	0.2412	130.5	3.365
Co2286_A		1.552	ug/L	0.07763	5.001	13.97
Cr2677_A		5.848	ug/L	0.001057	0.01808	28.00
Cu3273_A		3.297	ug/L	0.9992	30.30	-30.75
Fe2599_R		23,090	ug/L	107.1	0.4638	6,601
K_7664_R		3,991	ug/L	63.74	1.597	313.8
Li6707_R		11.59	ug/L	9.832	84.82	63.79
Mg2025_A		5,009	ug/L	2.354	0.04700	495.8
Mn2576_R	W	6,003	ug/L	15.17	0.2527	10,360
Mo2020_A		40.98	ug/L	0.3663	0.8938	41.57
Na5895_R	W	214,100	ug/L	709.3	0.3313	66,480
Ni2316_A		3.980	ug/L	0.3786	9.513	1.443

SN3734-002

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:19:19PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-2.619	ug/L	0.1575	6.013	-0.2499
Sb2068_A		0.2161	ug/L	1.482	685.9	1.393
Se1960_A		3.808	ug/L	0.4342	11.40	5.034
Si2516_R		13,540	ug/L	30.83	0.2277	1,191
Sn1899_A		0.7389	ug/L	0.7184	97.23	1.532
Sr4215_R		253.7	ug/L	1.129	0.4449	2,844
Ti3349_A		77.22	ug/L	0.3609	0.4674	573.2
Tl1908_A		-3.236	ug/L	3.131	96.78	-3.071
V_2924_A		32.44	ug/L	1.905	5.872	104.4
Zn2062_A		6.108	ug/L	0.2289	3.747	9.218
Y_3600_R		14,878	Cts/S	134.80	0.90607	14,878
Y_2243_A		14,177	Cts/S	23.689	0.16709	14,177
Y_3600_A		217,960	Cts/S	117.71	0.054005	217,960

CCV

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:23:35PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		499.5	ug/L	0.2646	0.05297	12,380
Al3961_R		12,270	ug/L	75.00	0.6115	10,460
As1891_A		494.3	ug/L	2.163	0.4376	336.1
B_2089_A		491.0	ug/L	3.433	0.6993	1,008
Ba4554_R		493.2	ug/L	0.9916	0.2010	21,680
Be3130_R		493.0	ug/L	0.3659	0.07422	32,820
Ca3158_R		12,230	ug/L	21.83	0.1785	13,550
Cd2265_A		490.6	ug/L	2.497	0.5089	12,680
Co2286_A		500.0	ug/L	2.620	0.5239	3,221
Cr2677_A		501.7	ug/L	1.032	0.2056	9,750
Cu3273_A		493.4	ug/L	3.034	0.6149	7,608
Fe2599_R		12,330	ug/L	51.67	0.4191	17,790
K_7664_R		12,340	ug/L	15.79	0.1279	6,864
Li6707_R		488.4	ug/L	2.524	0.5167	4,183
Mg2025_A		12,520	ug/L	67.00	0.5351	6,432
Mn2576_R		490.5	ug/L	0.9281	0.1892	4,276
Mo2020_A		495.0	ug/L	4.150	0.8384	2,540
Na5895_R		12,480	ug/L	14.95	0.1198	19,520
Ni2316_A		492.6	ug/L	3.320	0.6740	1,657
Pb2203_A		494.5	ug/L	3.225	0.6522	925.2
Sb2068_A		488.3	ug/L	3.562	0.7294	415.5
Se1960_A		496.0	ug/L	2.459	0.4957	243.9
Si2516_R		12,550	ug/L	38.09	0.3034	5,503
Sn1899_A		487.6	ug/L	1.728	0.3543	529.8
Sr4215_R		496.1	ug/L	1.196	0.2411	28,220
Ti3349_A		495.7	ug/L	0.3646	0.07356	19,640
Tl1908_A		507.2	ug/L	1.979	0.3903	558.7
V_2924_A		494.7	ug/L	1.199	0.2424	8,895
Zn2062_A		489.4	ug/L	2.545	0.5201	3,470
Y_3600_R		15,022	Cts/S	31.573	0.21017	15,022
Y_2243_A		14,434	Cts/S	67.776	0.46956	14,434
Y_3600_A		223,050	Cts/S	660.16	0.29597	223,050

CCB

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:27:43PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:27:43PM　　Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.5628	ug/L	0.05247	9.323	-37.00
Al3961_R		8.688	ug/L	10.40	119.7	-8.194
As1891_A		0.2858	ug/L	0.9765	341.6	-1.205
B_2089_A		2.101	ug/L	0.5718	27.21	8.545
Ba4554_R		0.1624	ug/L	0.1736	106.9	66.02
Be3130_R		-0.1474	ug/L	0.005535	3.756	-13.53
Ca3158_R		-2.665	ug/L	1.122	42.10	-25.30
Cd2265_A		-0.01945	ug/L	0.02316	119.1	-1.519
Co2286_A		-0.1031	ug/L	0.09033	87.61	11.49
Cr2677_A		-0.2269	ug/L	0.08373	36.91	-0.3491
Cu3273_A		0.6687	ug/L	0.1439	21.52	-30.23
Fe2599_R		4.717	ug/L	0.05835	1.237	6.537
K_7664_R		22.77	ug/L	8.032	35.28	-122.0
Li6707_R		0.4584	ug/L	3.709	809.0	48.36
Mg2025_A		2.470	ug/L	0.2715	10.99	-6.388
Mn2576_R		-0.02728	ug/L	0.1175	430.6	2.522
Mo2020_A		1.632	ug/L	0.4405	26.99	8.825
Na5895_R		13.36	ug/L	20.53	153.7	-42.32
Ni2316_A		0.1807	ug/L	0.3696	204.5	-0.2626
Pb2203_A		-0.7110	ug/L	0.5039	70.86	-0.9123
Sb2068_A		0.1996	ug/L	0.01221	6.117	1.401
Se1960_A		0.7766	ug/L	1.175	151.3	4.862
Si2516_R		6.783	ug/L	8.436	124.4	24.09
Sn1899_A		-0.01498	ug/L	0.1810	1,208	1.392
Sr4215_R		-0.2550	ug/L	0.01327	5.204	-30.12
Ti3349_A		-0.04628	ug/L	0.3513	759.2	-27.60
Tl1908_A		0.4972	ug/L	0.05237	10.53	-0.4862
V_2924_A		-0.01675	ug/L	0.06131	366.1	-4.145
Zn2062_A		-0.01100	ug/L	0.01321	120.1	0.6525
Y_3600_R		14,908	Cts/S	2.6692	0.017904	14,908
Y_2243_A		14,528	Cts/S	28.296	0.19478	14,528
Y_3600_A		223,750	Cts/S	104.22	0.046577	223,750

SN3736-001

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:32:02PM　　Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		2.065	ug/L	0.9748	47.21	-44.47
Al3961_R		79.20	ug/L	13.78	17.40	9.949
As1891_A		4.380	ug/L	1.525	34.80	-0.8123
B_2089_A		12.59	ug/L	0.5527	4.391	9.051
Ba4554_R		116.2	ug/L	0.9766	0.8405	1,069
Be3130_R		-0.3062	ug/L	0.08230	26.88	-7.829
Ca3158_R		84,840	ug/L	957.2	1.128	18,650
Cd2265_A		-0.1513	ug/L	0.2118	140.0	-1.050
Co2286_A		-0.4184	ug/L	1.167	279.0	11.25
Cr2677_A		1.349	ug/L	1.409	104.5	9.473
Cu3273_A		1.112	ug/L	4.028	362.2	-35.69
Fe2599_R		3,093	ug/L	38.71	1.252	884.8
K_7664_R		10,060	ug/L	490.8	4.881	995.7
Li6707_R		56.01	ug/L	6.781	12.11	138.4
Mg2025_A		15,980	ug/L	15.52	0.09718	1,586
Mn2576_R		1,751	ug/L	28.26	1.614	3,028
Mo2020_A		2.865	ug/L	0.2209	7.711	3.220
Na5895_R	W	652,000	ug/L	5,162	0.7917	202,800
Ni2316_A		1.131	ug/L	1.452	128.4	-0.1904

SN3736-001

Method Name: FAST-2016_NO_AU	Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:32:02PM	Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-4.692	ug/L	3.174	67.65	-1.259
Sb2068_A		2.726	ug/L	1.360	49.89	1.664
Se1960_A		4.495	ug/L	4.399	97.86	4.859
Si2516_R		9,933	ug/L	270.9	2.727	880.3
Sn1899_A		3.189	ug/L	0.9089	28.50	2.039
Sr4215_R		636.0	ug/L	2.828	0.4447	7,161
Ti3349_A		-1.789	ug/L	0.9319	52.08	-38.31
Tl1908_A		-0.4689	ug/L	0.3600	76.78	-1.496
V_2924_A		-0.5359	ug/L	0.2319	43.27	-7.427
Zn2062_A		2.094	ug/L	0.5275	25.20	3.603
Y_3600_R		14,893	Cts/S	267.20	1.7941	14,893
Y_2243_A		14,082	Cts/S	32.809	0.23299	14,082
Y_3600_A		214,160	Cts/S	946.51	0.44196	214,160

SN3736-002

Method Name: FAST-2016_NO_AU	Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:36:21PM	Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.146	ug/L	1.332	116.2	-43.12
Al3961_R		52.03	ug/L	10.83	20.81	8.930
As1891_A		1.992	ug/L	4.393	220.5	-1.083
B_2089_A		11.16	ug/L	0.2534	2.271	8.482
Ba4554_R		78.16	ug/L	0.4430	0.5667	727.7
Be3130_R		-0.7532	ug/L	0.009276	1.232	-13.53
Ca3158_R		110,200	ug/L	157.3	0.1427	23,890
Cd2265_A		-0.4521	ug/L	0.07814	17.29	-3.238
Co2286_A		0.06375	ug/L	1.499	2,352	11.78
Cr2677_A		0.8429	ug/L	1.816	215.5	7.006
Cu3273_A		1.960	ug/L	2.700	137.8	-32.79
Fe2599_R		36.22	ug/L	19.27	53.21	9.970
K_7664_R		8,242	ug/L	89.23	1.083	781.0
Li6707_R		25.40	ug/L	14.03	55.24	86.02
Mg2025_A		23,920	ug/L	99.57	0.4162	2,362
Mn2576_R		59.64	ug/L	0.1020	0.1710	105.5
Mo2020_A		8.392	ug/L	0.1933	2.303	8.729
Na5895_R	W	504,900	ug/L	263.8	0.05225	154,800
Ni2316_A		2.223	ug/L	0.7596	34.18	0.6056
Pb2203_A		-3.478	ug/L	4.186	120.4	-0.8553
Sb2068_A		-1.265	ug/L	0.2769	21.90	0.9728
Se1960_A		-2.279	ug/L	1.894	83.12	4.110
Si2516_R		8,513	ug/L	57.76	0.6785	746.8
Sn1899_A		2.185	ug/L	0.6079	27.82	1.816
Sr4215_R		753.3	ug/L	1.976	0.2623	8,364
Ti3349_A		-1.211	ug/L	0.8971	74.09	-33.59
Tl1908_A		-0.2374	ug/L	0.9781	412.1	-1.062
V_2924_A		-1.167	ug/L	0.6004	51.46	-7.768
Zn2062_A		2.840	ug/L	0.3153	11.10	4.607
Y_3600_R		14,681	Cts/S	167.19	1.1388	14,681
Y_2243_A		13,988	Cts/S	66.304	0.47400	13,988
Y_3600_A		212,330	Cts/S	493.11	0.23224	212,330

SN3736-003

Method Name: FAST-2016_NO_AU	Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:40:40PM	Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3736-003

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:40:40PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.3789	ug/L	0.9068	239.3	-53.01
Al3961_R		21.49	ug/L	35.25	164.0	10.74
As1891_A		1.201	ug/L	6.247	520.2	-1.206
B_2089_A		9.484	ug/L	0.5122	5.401	7.844
Ba4554_R		125.6	ug/L	4.401	3.505	1,155
Be3130_R		-0.2704	ug/L	0.1631	60.34	-7.389
Ca3158_R	W	157,300	ug/L	2,723	1.731	34,750
Cd2265_A		-0.4388	ug/L	0.04048	9.225	-2.872
Co2286_A		2.380	ug/L	0.6385	26.82	14.62
Cr2677_A		1.060	ug/L	0.03486	3.288	8.570
Cu3273_A		1.355	ug/L	0.1359	10.03	-34.82
Fe2599_R		1,341	ug/L	26.19	1.953	385.1
K_7664_R		7,931	ug/L	79.69	1.005	760.6
Li6707_R		29.10	ug/L	9.902	34.03	93.90
Mg2025_A		33,960	ug/L	191.3	0.5633	3,350
Mn2576_R		2,410	ug/L	24.50	1.017	4,185
Mo2020_A		11.41	ug/L	0.2943	2.580	11.66
Na5895_R	W	511,400	ug/L	8,732	1.708	159,700
Ni2316_A		2.684	ug/L	1.160	43.20	0.8876
Pb2203_A		0.05001	ug/L	0.1975	395.0	0.4473
Sb2068_A		-3.540	ug/L	2.206	62.31	0.6059
Se1960_A		-5.518	ug/L	3.050	55.28	3.914
Si2516_R		8,013	ug/L	83.93	1.047	717.4
Sn1899_A		1.524	ug/L	2.618	171.8	1.672
Sr4215_R		1,073	ug/L	19.62	1.828	12,140
Ti3349_A		-2.642	ug/L	0.1709	6.468	-44.62
Tl1908_A		-2.461	ug/L	1.554	63.17	-2.049
V_2924_A		-0.5538	ug/L	0.05546	10.01	-8.505
Zn2062_A		3.126	ug/L	0.1220	3.904	4.990
Y_3600_R		14,958	Cts/S	256.03	1.7117	14,958
Y_2243_A		13,960	Cts/S	67.109	0.48071	13,960
Y_3600_A		213,590	Cts/S	691.21	0.32362	213,590

SN3736-004

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:44:58PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		2.482	ug/L	1.304	52.55	-42.60
Al3961_R		72.06	ug/L	32.66	45.32	8.947
As1891_A		-2.375	ug/L	5.008	210.8	-1.707
B_2089_A		8.491	ug/L	0.8012	9.436	7.404
Ba4554_R		118.9	ug/L	3.280	2.758	1,087
Be3130_R		-0.1694	ug/L	0.1865	110.1	-5.990
Ca3158_R		86,190	ug/L	728.0	0.8446	18,860
Cd2265_A		-0.2735	ug/L	0.06543	23.92	-1.648
Co2286_A		-0.7377	ug/L	0.7807	105.8	10.80
Cr2677_A		0.2929	ug/L	1.972	673.4	5.556
Cu3273_A		7.293	ug/L	0.9828	13.48	-17.34
Fe2599_R		3,144	ug/L	50.79	1.615	894.9
K_7664_R		10,140	ug/L	9.249	0.09118	1,001
Li6707_R		71.62	ug/L	9.449	13.19	163.9
Mg2025_A		16,270	ug/L	19.25	0.1183	1,608
Mn2576_R		1,772	ug/L	9.166	0.5173	3,049
Mo2020_A		1.112	ug/L	0.3789	34.06	1.457
Na5895_R	W	663,600	ug/L	5,881	0.8863	205,400
Ni2316_A		2.020	ug/L	0.9711	48.08	0.3775

SN3736-004

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:44:58PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.5058	ug/L	1.213	239.8	0.6412
Sb2068_A		-0.4934	ug/L	2.722	551.7	1.122
Se1960_A		-2.513	ug/L	2.623	104.4	4.181
Si2516_R		9,934	ug/L	33.86	0.3409	876.3
Sn1899_A		3.354	ug/L	0.7779	23.19	2.065
Sr4215_R		646.9	ug/L	6.735	1.041	7,248
Ti3349_A		-2.691	ug/L	0.2302	8.557	-45.23
Tl1908_A		-1.029	ug/L	0.2599	25.26	-1.614
V_2924_A		0.01138	ug/L	1.603	14,090	-5.496
Zn2062_A		3.296	ug/L	0.09784	2.968	5.247
Y_3600_R		14,821	Cts/S	235.45	1.5886	14,821
Y_2243_A		14,019	Cts/S	7.1558	0.051043	14,019
Y_3600_A		214,490	Cts/S	1,058.0	0.49326	214,490

PBWNE18ICW2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:49:15PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2831	ug/L	0.2773	97.94	-44.22
Al3961_R		7.412	ug/L	3.062	41.31	-9.375
As1891_A		0.2367	ug/L	0.7624	322.2	-1.265
B_2089_A		0.9024	ug/L	0.2904	32.18	6.199
Ba4554_R	F	8.676	ug/L	0.04532	0.5223	439.4
Be3130_R		-0.08126	ug/L	0.07123	87.65	-9.227
Ca3158_R		1.456	ug/L	9.624	661.1	-20.88
Cd2265_A		-0.03188	ug/L	0.05159	161.8	-1.882
Co2286_A		-0.04392	ug/L	0.03937	89.64	12.13
Cr2677_A		0.1614	ug/L	0.3801	235.5	7.209
Cu3273_A		0.2678	ug/L	0.1646	61.47	-36.58
Fe2599_R		8.085	ug/L	0.03750	0.4639	11.44
K_7664_R		29.12	ug/L	50.36	173.0	-119.2
Li6707_R		0.4205	ug/L	1.861	442.6	48.33
Mg2025_A		19.32	ug/L	0.7762	4.017	2.325
Mn2576_R		-0.2442	ug/L	0.04591	18.80	0.6539
Mo2020_A		0.1151	ug/L	0.07514	65.26	1.014
Na5895_R		33.56	ug/L	6.693	19.94	-10.90
Ni2316_A		0.2639	ug/L	0.2028	76.85	-0.01693
Pb2203_A		0.1200	ug/L	0.2233	186.0	0.6734
Sb2068_A		-0.7917	ug/L	0.3122	39.43	0.5599
Se1960_A		-0.7988	ug/L	0.7361	92.15	4.189
Si2516_R		-2.571	ug/L	1.129	43.91	20.18
Sn1899_A		0.4515	ug/L	0.1784	39.52	1.943
Sr4215_R		-0.09855	ug/L	0.02195	22.27	-21.43
Ti3349_A		-0.1635	ug/L	0.2274	139.1	-32.35
Tl1908_A		-0.1891	ug/L	0.3663	193.7	-1.274
V_2924_A		0.08451	ug/L	0.3092	365.9	-2.193
Zn2062_A		0.4893	ug/L	0.09636	19.69	4.315
Y_3600_R		15,012	Cts/S	89.247	0.59451	15,012
Y_2243_A		14,849	Cts/S	33.041	0.22251	14,849
Y_3600_A		224,340	Cts/S	1,520.7	0.67785	224,340

LCSWNE18ICW2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:53:37PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LCSWNE18ICW2

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:53:37PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.18	ug/L	0.4335	0.8152	1,263
Al3961_R		2,049	ug/L	2.913	0.1422	1,772
As1891_A		104.0	ug/L	1.599	1.537	70.74
B_2089_A		497.8	ug/L	1.618	0.3250	1,019
Ba4554_R		2,039	ug/L	6.468	0.3172	91,340
Be3130_R		50.36	ug/L	0.4408	0.8754	3,420
Ca3158_R		2,561	ug/L	0.7411	0.02893	2,882
Cd2265_A		254.8	ug/L	0.7469	0.2931	6,674
Co2286_A		521.1	ug/L	1.583	0.3037	3,405
Cr2677_A		207.8	ug/L	0.4223	0.2032	4,034
Cu3273_A		254.1	ug/L	1.266	0.4982	3,891
Fe2599_R		982.2	ug/L	14.05	1.431	1,447
K_7664_R		10,360	ug/L	82.39	0.7952	5,864
Li6707_R		501.8	ug/L	2.177	0.4339	4,388
Mg2025_A		5,425	ug/L	18.52	0.3413	2,844
Mn2576_R		504.2	ug/L	3.604	0.7148	4,490
Mo2020_A		93.34	ug/L	2.665	2.855	486.0
Na5895_R		7,924	ug/L	35.35	0.4461	12,630
Ni2316_A		510.2	ug/L	1.230	0.2411	1,733
Pb2203_A		103.5	ug/L	0.3608	0.3484	197.0
Sb2068_A		103.0	ug/L	0.6806	0.6610	86.23
Se1960_A		103.6	ug/L	0.7466	0.7207	55.35
Si2516_R		1,011	ug/L	18.41	1.821	474.9
Sn1899_A		497.4	ug/L	2.363	0.4752	548.2
Sr4215_R		521.6	ug/L	2.459	0.4715	30,300
Ti3349_A		509.2	ug/L	3.669	0.7205	20,120
Tl1908_A		106.3	ug/L	0.9312	0.8762	119.1
V_2924_A		502.6	ug/L	1.351	0.2689	9,073
Zn2062_A		505.5	ug/L	1.371	0.2712	3,638
Y_3600_R		15,343	Cts/S	23.192	0.15115	15,343
Y_2243_A		14,643	Cts/S	28.810	0.19675	14,643
Y_3600_A		222,630	Cts/S	990.95	0.44511	222,630

SN3779-001

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:57:48PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4844	ug/L	0.2181	45.03	-40.86
Al3961_R		310.7	ug/L	25.26	8.129	251.1
As1891_A		36.35	ug/L	1.401	3.855	23.74
B_2089_A		52.20	ug/L	1.116	2.138	110.1
Ba4554_R		3.740	ug/L	0.03468	0.9272	224.4
Be3130_R		-0.09754	ug/L	0.08381	85.92	-10.84
Ca3158_R		1,340	ug/L	31.28	2.335	1,472
Cd2265_A		0.03226	ug/L	0.01136	35.20	0.1308
Co2286_A		0.02137	ug/L	0.2133	997.8	12.52
Cr2677_A		0.2842	ug/L	0.09160	32.23	9.483
Cu3273_A		0.6992	ug/L	0.8500	121.6	-29.44
Fe2599_R		240.8	ug/L	3.775	1.568	348.9
K_7664_R		362.4	ug/L	27.03	7.461	70.13
Li6707_R		91.51	ug/L	3.109	3.398	824.0
Mg2025_A		141.7	ug/L	2.588	1.826	65.62
Mn2576_R		4.846	ug/L	0.2843	5.866	45.15
Mo2020_A		3.244	ug/L	0.4299	13.25	17.24
Na5895_R	W	56,580	ug/L	1,195	2.112	89,140
Ni2316_A		0.7414	ug/L	0.1933	26.07	1.653

SN3779-001

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 5:57:48PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.2028	ug/L	0.005751	2.836	0.7602
Sb2068_A		0.1685	ug/L	0.1822	108.1	1.368
Se1960_A		0.7286	ug/L	1.872	256.9	4.867
Si2516_R		5,590	ug/L	107.4	1.922	2,472
Sn1899_A		2.714	ug/L	0.5766	21.25	4.390
Sr4215_R		25.42	ug/L	0.5005	1.969	1,438
Ti3349_A		14.59	ug/L	0.1051	0.7204	546.6
Tl1908_A		0.6378	ug/L	0.3032	47.54	-0.3488
V_2924_A		3.324	ug/L	0.07761	2.335	55.80
Zn2062_A		2.910	ug/L	0.01855	0.6373	21.63
Y_3600_R		15,096	Cts/S	224.49	1.4871	15,096
Y_2243_A		14,611	Cts/S	164.20	1.1238	14,611
Y_3600_A		220,550	Cts/S	1,914.0	0.86785	220,550

SN3779-002

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:02:04PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.3027	ug/L	0.05119	16.91	-105.8
Al3961_R		2,894	ug/L	14.47	0.4999	2,467
As1891_A		36.77	ug/L	1.160	3.155	23.81
B_2089_A		11.83	ug/L	0.1965	1.662	28.55
Ba4554_R		28.13	ug/L	0.5392	1.917	1,293
Be3130_R		0.09670	ug/L	0.06393	66.11	-1.884
Ca3158_R		20,460	ug/L	194.4	0.9501	22,710
Cd2265_A		0.08864	ug/L	0.006194	6.988	8.976
Co2286_A		1.422	ug/L	0.1309	9.208	22.82
Cr2677_A		3.750	ug/L	0.09435	2.516	78.35
Cu3273_A		4.111	ug/L	0.3641	8.857	21.43
Fe2599_R		6,308	ug/L	29.00	0.4597	9,109
K_7664_R		1,355	ug/L	56.44	4.164	633.4
Li6707_R		38.05	ug/L	1.081	2.841	367.4
Mg2025_A		2,100	ug/L	6.482	0.3087	1,086
Mn2576_R		90.84	ug/L	0.3160	0.3479	793.6
Mo2020_A		3.189	ug/L	0.01626	0.5098	17.07
Na5895_R		19,450	ug/L	174.5	0.8972	30,480
Ni2316_A		5.286	ug/L	0.1883	3.562	16.51
Pb2203_A		1.463	ug/L	0.1389	9.493	3.003
Sb2068_A		0.4678	ug/L	0.6212	132.8	1.887
Se1960_A		-0.4503	ug/L	1.277	283.5	4.361
Si2516_R		8,487	ug/L	81.73	0.9630	3,728
Sn1899_A		1.503	ug/L	0.1293	8.605	3.086
Sr4215_R		350.3	ug/L	3.036	0.8667	19,930
Ti3349_A		107.1	ug/L	0.3650	0.3409	4,295
Tl1908_A		0.3190	ug/L	0.1535	48.11	-0.9035
V_2924_A		8.162	ug/L	0.1745	2.137	148.7
Zn2062_A		8.417	ug/L	0.04701	0.5585	61.58
Y_3600_R		15,032	Cts/S	41.914	0.27884	15,032
Y_2243_A		14,710	Cts/S	45.666	0.31045	14,710
Y_3600_A		227,060	Cts/S	732.56	0.32262	227,060

SN3779-003

Method Name: FAST-2016_NO_AU | Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:06:20PM | Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-003

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:06:20PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1809	ug/L	0.2283	126.2	-56.37
Al3961_R		257.4	ug/L	12.77	4.962	235.4
As1891_A		18.54	ug/L	0.1262	0.6806	11.45
B_2089_A		5.830	ug/L	0.004782	0.08201	16.19
Ba4554_R		18.41	ug/L	0.01835	0.09971	892.9
Be3130_R		-0.01911	ug/L	0.05327	278.7	-7.133
Ca3158_R	W	34,350	ug/L	44.25	0.1288	39,280
Cd2265_A		-0.01264	ug/L	0.03452	273.1	-0.2959
Co2286_A		-0.03030	ug/L	0.2905	958.6	12.59
Cr2677_A		0.4984	ug/L	0.2542	51.00	14.09
Cu3273_A		1.131	ug/L	0.6933	61.30	-24.14
Fe2599_R		829.1	ug/L	3.534	0.4262	1,233
K_7664_R		1,087	ug/L	11.28	1.037	495.7
Li6707_R		15.17	ug/L	3.220	21.23	178.7
Mg2025_A		1,618	ug/L	6.851	0.4233	834.4
Mn2576_R		12.44	ug/L	0.07444	0.5983	114.8
Mo2020_A		0.5160	ug/L	0.04757	9.219	3.096
Na5895_R		5,040	ug/L	16.26	0.3225	8,087
Ni2316_A		0.3422	ug/L	0.1385	40.48	0.1708
Pb2203_A		-0.5261	ug/L	0.3225	61.29	-0.5708
Sb2068_A		-0.2810	ug/L	0.2192	77.99	1.029
Se1960_A		-0.5881	ug/L	1.296	220.4	4.255
Si2516_R		3,677	ug/L	7.013	0.1907	1,676
Sn1899_A		0.5351	ug/L	0.2014	37.64	2.016
Sr4215_R		398.6	ug/L	1.841	0.4618	23,370
Ti3349_A		42.52	ug/L	0.4123	0.9697	1,700
Tl1908_A		0.7342	ug/L	0.01393	1.897	-0.2856
V_2924_A		2.431	ug/L	0.06286	2.586	41.98
Zn2062_A		0.8573	ug/L	0.08076	9.420	6.927
Y_3600_R		15,484	Cts/S	6.7209	0.043406	15,484
Y_2243_A		14,696	Cts/S	41.714	0.28384	14,696
Y_3600_A		228,540	Cts/S	629.73	0.27555	228,540

SN3779-004

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:10:37PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4696	ug/L	0.1401	29.84	-59.92
Al3961_R		549.1	ug/L	11.92	2.171	463.8
As1891_A		41.72	ug/L	1.156	2.772	27.28
B_2089_A		115.0	ug/L	0.3424	0.2978	236.7
Ba4554_R		4.768	ug/L	0.1401	2.938	274.8
Be3130_R		-0.02492	ug/L	0.04823	193.5	-7.006
Ca3158_R		1,276	ug/L	3.934	0.3083	1,427
Cd2265_A		0.03919	ug/L	0.05763	147.1	2.525
Co2286_A		-0.006920	ug/L	0.1660	2,399	12.50
Cr2677_A		0.5031	ug/L	0.01398	2.778	13.98
Cu3273_A		0.3644	ug/L	0.02010	5.516	-35.99
Fe2599_R		2,102	ug/L	32.88	1.564	3,105
K_7664_R		456.8	ug/L	17.54	3.839	126.2
Li6707_R		158.1	ug/L	6.391	4.042	1,417
Mg2025_A		122.2	ug/L	1.587	1.299	55.52
Mn2576_R		20.00	ug/L	0.3884	1.942	180.7
Mo2020_A		2.711	ug/L	0.3020	11.14	14.44
Na5895_R	W	63,590	ug/L	421.2	0.6624	102,100
Ni2316_A		0.8989	ug/L	0.1761	19.59	1.968

SN3779-004

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:10:37PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.02208	ug/L	0.2645	1,198	0.4910
Sb2068_A		-0.1744	ug/L	0.1706	97.79	1.158
Se1960_A		0.02746	ug/L	0.7050	2,567	4.523
Si2516_R		8,638	ug/L	38.11	0.4411	3,880
Sn1899_A		0.6750	ug/L	0.1529	22.65	2.152
Sr4215_R		19.37	ug/L	0.01338	0.06908	1,112
Ti3349_A		31.26	ug/L	2.000	6.397	1,227
Tl1908_A		1.062	ug/L	0.1961	18.47	0.08328
V_2924_A		1.080	ug/L	0.09781	9.058	16.57
Zn2062_A		1.930	ug/L	0.04278	2.217	14.56
Y_3600_R		15,379	Cts/S	100.67	0.65460	15,379
Y_2243_A		14,576	Cts/S	15.798	0.10839	14,576
Y_3600_A		225,420	Cts/S	1,931.8	0.85699	225,420

CCV

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:14:54PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		499.3	ug/L	3.806	0.7623	12,440
Al3961_R		12,170	ug/L	133.8	1.099	10,510
As1891_A		496.3	ug/L	1.359	0.2738	334.2
B_2089_A		502.6	ug/L	0.8715	0.1734	1,021
Ba4554_R		502.0	ug/L	5.780	1.152	22,340
Be3130_R		493.1	ug/L	4.678	0.9486	33,250
Ca3158_R		12,220	ug/L	93.18	0.7622	13,720
Cd2265_A		501.3	ug/L	0.1770	0.03531	12,830
Co2286_A		501.5	ug/L	0.006754	0.001347	3,198
Cr2677_A		487.4	ug/L	2.902	0.5955	9,524
Cu3273_A		491.3	ug/L	2.044	0.4160	7,618
Fe2599_R		12,080	ug/L	71.18	0.5890	17,660
K_7664_R		12,170	ug/L	78.03	0.6412	6,854
Li6707_R		480.8	ug/L	2.048	0.4260	4,172
Mg2025_A		12,610	ug/L	12.52	0.09926	6,416
Mn2576_R		496.1	ug/L	5.398	1.088	4,380
Mo2020_A		494.1	ug/L	1.335	0.2703	2,511
Na5895_R		12,080	ug/L	68.46	0.5667	19,140
Ni2316_A		506.7	ug/L	0.1989	0.03925	1,688
Pb2203_A		509.3	ug/L	0.5198	0.1021	943.6
Sb2068_A		499.2	ug/L	0.1339	0.02682	420.4
Se1960_A		499.8	ug/L	0.3116	0.06235	243.3
Si2516_R		12,680	ug/L	153.1	1.208	5,630
Sn1899_A		501.5	ug/L	0.1817	0.03623	539.5
Sr4215_R		484.9	ug/L	4.086	0.8427	27,930
Ti3349_A		491.6	ug/L	2.531	0.5148	19,580
Tl1908_A		512.5	ug/L	1.126	0.2196	559.0
V_2924_A		488.2	ug/L	3.872	0.7931	8,827
Zn2062_A		501.2	ug/L	0.1493	0.02979	3,519
Y_3600_R		15,216	Cts/S	98.726	0.64882	15,216
Y_2243_A		14,293	Cts/S	40.734	0.28500	14,293
Y_3600_A		224,290	Cts/S	881.94	0.39322	224,290

CCB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:19:02PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:19:02PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4819	ug/L	0.3799	78.83	-39.35
Al3961_R		-0.4274	ug/L	3.666	857.6	-16.20
As1891_A		0.9016	ug/L	1.100	122.1	-0.7734
B_2089_A		1.212	ug/L	0.03580	2.954	6.701
Ba4554_R		-0.1697	ug/L	0.2134	125.8	52.57
Be3130_R		-0.08836	ug/L	0.02346	26.55	-9.828
Ca3158_R		-4.082	ug/L	4.329	106.0	-27.38
Cd2265_A		0.01405	ug/L	0.02854	203.2	-0.6455
Co2286_A		-0.1631	ug/L	0.09343	57.30	11.02
Cr2677_A		0.06450	ug/L	0.2701	418.8	5.365
Cu3273_A		0.2385	ug/L	0.6464	271.0	-37.23
Fe2599_R		3.510	ug/L	0.3877	11.05	4.898
K_7664_R		22.90	ug/L	15.51	67.74	-124.2
Li6707_R		-0.4525	ug/L	1.293	285.7	41.49
Mg2025_A		2.619	ug/L	0.6693	25.56	-6.268
Mn2576_R		0.004220	ug/L	0.4973	11,780	2.844
Mo2020_A		1.569	ug/L	0.4079	26.00	8.434
Na5895_R		0.08203	ug/L	0.7674	935.5	-64.18
Ni2316_A		0.2565	ug/L	0.007044	2.747	-0.007610
Pb2203_A		-1.012	ug/L	0.1955	19.31	-1.469
Sb2068_A		0.5305	ug/L	1.081	203.8	1.669
Se1960_A		0.09911	ug/L	1.006	1,015	4.499
Si2516_R		16.63	ug/L	4.920	29.58	28.89
Sn1899_A		0.6268	ug/L	0.2359	37.64	2.077
Sr4215_R		-0.2695	ug/L	0.1847	68.54	-31.51
Ti3349_A		0.1137	ug/L	0.2629	231.1	-21.43
Tl1908_A		0.4554	ug/L	0.2040	44.80	-0.5291
V_2924_A		-0.2490	ug/L	0.3902	156.7	-8.456
Zn2062_A		0.02983	ug/L	0.003327	11.15	0.9347
Y_3600_R		15,192	Cts/S	37.978	0.24999	15,192
Y_2243_A		14,418	Cts/S	18.206	0.12628	14,418
Y_3600_A		225,640	Cts/S	721.83	0.31991	225,640

SN3779-005

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:23:21PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2741	ug/L	0.5073	185.1	-44.71
Al3961_R		142.4	ug/L	0.4546	0.3192	114.1
As1891_A		3.841	ug/L	0.9168	23.87	1.223
B_2089_A		6.555	ug/L	0.1669	2.545	17.24
Ba4554_R		45.36	ug/L	0.5496	1.212	2,048
Be3130_R		0.1004	ug/L	0.02515	25.06	2.805
Ca3158_R		11,630	ug/L	86.67	0.7455	12,890
Cd2265_A		-0.01449	ug/L	0.004592	31.70	-1.300
Co2286_A		-0.04139	ug/L	0.03743	90.42	11.74
Cr2677_A		0.6405	ug/L	0.03168	4.946	16.51
Cu3273_A		141.1	ug/L	0.3468	0.2457	2,149
Fe2599_R		66.10	ug/L	2.311	3.497	95.18
K_7664_R		6,801	ug/L	67.20	0.9882	3,723
Li6707_R		1.916	ug/L	2.970	155.0	60.95
Mg2025_A		952.5	ug/L	8.004	0.8402	475.9
Mn2576_R		4.206	ug/L	0.2361	5.613	39.67
Mo2020_A		0.6238	ug/L	0.1180	18.91	3.570
Na5895_R		4,236	ug/L	33.85	0.7991	6,585
Ni2316_A		0.7452	ug/L	0.3400	45.62	1.589

SN3779-005

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:23:21PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.1540	ug/L	0.02831	18.39	0.1767
Sb2068_A		-0.2470	ug/L	0.04039	16.35	1.007
Se1960_A		0.1004	ug/L	0.2234	222.5	4.476
Si2516_R		1,855	ug/L	4.874	0.2628	830.9
Sn1899_A		0.4784	ug/L	0.05970	12.48	1.905
Sr4215_R		59.43	ug/L	0.3160	0.5316	3,367
Ti3349_A		1.436	ug/L	0.6243	43.47	31.17
Tl1908_A		1.298	ug/L	0.8192	63.13	0.4042
V_2924_A		0.3413	ug/L	0.08437	24.72	2.422
Zn2062_A		11.11	ug/L	0.01400	0.1260	79.00
Y_3600_R		15,027	Cts/S	176.51	1.1746	15,027
Y_2243_A		14,333	Cts/S	30.982	0.21616	14,333
Y_3600_A		223,050	Cts/S	956.40	0.42878	223,050

SN3779-005L

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:27:39PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		2.910	ug/L	0.7246	24.90	-37.02
Al3961_R		115.9	ug/L	105.3	90.81	5.711
As1891_A		4.068	ug/L	2.687	66.05	-0.8309
B_2089_A		8.196	ug/L	0.1070	1.305	7.468
Ba4554_R		42.31	ug/L	2.313	5.465	431.7
Be3130_R		0.07921	ug/L	0.2574	325.0	-2.780
Ca3158_R		11,030	ug/L	36.12	0.3274	2,435
Cd2265_A		-0.07150	ug/L	0.02997	41.92	-1.356
Co2286_A		-0.7106	ug/L	0.4745	66.78	11.11
Cr2677_A		0.3191	ug/L	0.07931	24.86	5.370
Cu3273_A		135.7	ug/L	0.4465	0.3290	385.6
Fe2599_R		82.25	ug/L	2.090	2.540	23.59
K_7664_R		6,457	ug/L	172.0	2.664	598.6
Li6707_R		11.53	ug/L	10.63	92.21	64.64
Mg2025_A		919.3	ug/L	8.728	0.9494	85.92
Mn2576_R		5.271	ug/L	0.1085	2.058	12.05
Mo2020_A		0.9638	ug/L	0.5573	57.82	1.379
Na5895_R		4,057	ug/L	36.22	0.8928	1,213
Ni2316_A		1.304	ug/L	0.3580	27.44	-0.02577
Pb2203_A		-2.750	ug/L	0.2889	10.51	-0.5905
Sb2068_A		3.417	ug/L	0.8286	24.25	1.792
Se1960_A		6.608	ug/L	0.3986	6.032	5.070
Si2516_R		1,779	ug/L	73.73	4.144	177.1
Sn1899_A		3.602	ug/L	1.125	31.24	2.169
Sr4215_R		55.70	ug/L	0.4424	0.7942	620.1
Ti3349_A		1.379	ug/L	0.05228	3.792	-14.98
Tl1908_A		-0.9602	ug/L	2.111	219.9	-1.236
V_2924_A		-0.1985	ug/L	0.7624	384.2	-4.468
Zn2062_A		11.60	ug/L	0.3497	3.016	17.10
Y_3600_R		15,070	Cts/S	80.847	0.53648	15,070
Y_2243_A		14,364	Cts/S	63.537	0.44233	14,364
Y_3600_A		226,040	Cts/S	1,115.7	0.49360	226,040

SN3779-005A

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:31:58PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-005A

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 6:31:58PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		7.273	ug/L	0.1527	2.100	73.85
Al3961_R		10,230	ug/L	48.16	0.4710	8,855
As1891_A		479.4	ug/L	6.628	1.383	324.3
B_2089_A		506.8	ug/L	8.268	1.631	1,031
Ba4554_R		517.7	ug/L	4.426	0.8550	23,100
Be3130_R		494.7	ug/L	1.124	0.2272	33,440
Ca3158_R		16,270	ug/L	44.10	0.2711	18,310
Cd2265_A		495.4	ug/L	7.610	1.536	12,710
Co2286_A		498.3	ug/L	7.575	1.520	3,189
Cr2677_A		490.1	ug/L	11.34	2.314	9,477
Cu3273_A		623.3	ug/L	13.66	2.192	9,575
Fe2599_R		5,110	ug/L	26.95	0.5273	7,487
K_7664_R		16,100	ug/L	20.60	0.1280	9,132
Li6707_R		486.6	ug/L	0.8054	0.1655	4,232
Mg2025_A		6,515	ug/L	104.2	1.599	3,340
Mn2576_R		484.1	ug/L	0.1613	0.03331	4,285
Mo2020_A		441.9	ug/L	7.995	1.809	2,254
Na5895_R		9,339	ug/L	6.412	0.06866	14,810
Ni2316_A		500.9	ug/L	8.359	1.669	1,674
Pb2203_A		502.5	ug/L	6.733	1.340	934.3
Sb2068_A		452.5	ug/L	3.115	0.6884	382.1
Se1960_A		494.8	ug/L	4.125	0.8337	241.8
Si2516_R		2,031	ug/L	14.07	0.6926	925.1
Sn1899_A		490.5	ug/L	5.676	1.157	529.5
Sr4215_R		528.7	ug/L	0.6860	0.1298	30,530
Ti3349_A		490.5	ug/L	12.54	2.556	19,330
Tl1908_A		509.3	ug/L	7.676	1.507	557.4
V_2924_A		488.0	ug/L	9.129	1.871	8,733
Zn2062_A		508.2	ug/L	8.048	1.584	3,580
Y_3600_R		15,252	Cts/S	94.630	0.62046	15,252
Y_2243_A		14,342	Cts/S	166.40	1.1602	14,342
Y_3600_A		221,940	Cts/S	3,377.4	1.5218	221,940

SN3779-005S

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 6:36:08PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.47	ug/L	0.2270	0.4246	1,250
Al3961_R		2,229	ug/L	18.84	0.8452	1,852
As1891_A		107.4	ug/L	1.352	1.259	72.21
B_2089_A		511.7	ug/L	2.928	0.5722	1,034
Ba4554_R	W	2,115	ug/L	1.093	0.05170	90,580
Be3130_R		53.04	ug/L	0.1939	0.3657	3,445
Ca3158_R		13,800	ug/L	27.05	0.1960	14,940
Cd2265_A		257.4	ug/L	1.546	0.6007	6,657
Co2286_A		515.9	ug/L	1.979	0.3837	3,329
Cr2677_A		208.9	ug/L	0.8414	0.4027	3,993
Cu3273_A		397.4	ug/L	0.08292	0.02087	6,014
Fe2599_R		1,046	ug/L	7.613	0.7280	1,474
K_7664_R		17,240	ug/L	106.1	0.6157	9,415
Li6707_R		529.7	ug/L	1.555	0.2935	4,427
Mg2025_A		6,158	ug/L	34.78	0.5647	3,184
Mn2576_R		525.1	ug/L	0.4064	0.07739	4,472
Mo2020_A		102.4	ug/L	0.2569	0.2508	526.7
Na5895_R		12,040	ug/L	30.84	0.2562	18,390
Ni2316_A		518.4	ug/L	2.466	0.4757	1,739

SN3779-005S

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:36:08PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		104.5	ug/L	0.8476	0.8112	196.3
Sb2068_A		108.4	ug/L	0.5805	0.5356	89.68
Se1960_A		106.1	ug/L	1.180	1.112	55.89
Si2516_R		2,899	ug/L	16.74	0.5775	1,259
Sn1899_A		508.4	ug/L	0.3219	0.06332	553.3
Sr4215_R		576.9	ug/L	0.7595	0.1316	32,050
Ti3349_A		522.4	ug/L	1.018	0.1950	20,320
Tl1908_A		105.6	ug/L	0.6504	0.6159	116.8
V_2924_A		517.8	ug/L	1.117	0.2157	9,202
Zn2062_A		523.3	ug/L	3.489	0.6668	3,720
Y_3600_R		14,671	Cts/S	179.98	1.2268	14,671
Y_2243_A		14,460	Cts/S	77.227	0.53406	14,460
Y_3600_A		219,180	Cts/S	276.14	0.12599	219,180

SN3779-005P

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:40:20PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.05	ug/L	0.5731	1.080	1,241
Al3961_R		2,213	ug/L	14.14	0.6389	1,855
As1891_A		111.0	ug/L	0.4412	0.3976	73.22
B_2089_A		519.2	ug/L	1.189	0.2290	1,030
Ba4554_R	W	2,100	ug/L	0.6560	0.03124	90,740
Be3130_R		53.24	ug/L	0.07371	0.1384	3,489
Ca3158_R		13,650	ug/L	19.01	0.1392	14,910
Cd2265_A		267.1	ug/L	0.6909	0.2586	6,778
Co2286_A		529.8	ug/L	0.9698	0.1830	3,354
Cr2677_A		210.0	ug/L	0.5906	0.2813	4,018
Cu3273_A		392.0	ug/L	2.698	0.6882	5,940
Fe2599_R		1,051	ug/L	4.639	0.4414	1,494
K_7664_R		17,310	ug/L	90.90	0.5251	9,542
Li6707_R		528.5	ug/L	4.564	0.8635	4,457
Mg2025_A		6,364	ug/L	18.01	0.2830	3,228
Mn2576_R		525.8	ug/L	2.556	0.4862	4,518
Mo2020_A		100.9	ug/L	1.506	1.492	509.0
Na5895_R		12,100	ug/L	19.02	0.1571	18,650
Ni2316_A		531.2	ug/L	1.086	0.2045	1,748
Pb2203_A		108.0	ug/L	0.2587	0.2396	199.1
Sb2068_A		109.6	ug/L	0.3295	0.3006	88.92
Se1960_A		108.5	ug/L	0.1716	0.1583	55.94
Si2516_R		2,850	ug/L	2.299	0.08068	1,249
Sn1899_A		515.7	ug/L	0.8385	0.1626	550.6
Sr4215_R		577.1	ug/L	3.552	0.6155	32,340
Ti3349_A		517.7	ug/L	2.618	0.5058	20,170
Tl1908_A		108.8	ug/L	0.8359	0.7680	118.1
V_2924_A		515.9	ug/L	3.743	0.7256	9,181
Zn2062_A		534.3	ug/L	1.897	0.3551	3,726
Y_3600_R		14,802	Cts/S	75.753	0.51176	14,802
Y_2243_A		14,187	Cts/S	23.889	0.16839	14,187
Y_3600_A		219,490	Cts/S	501.17	0.22833	219,490

SN3779-006

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:44:31PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-006

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:44:31PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2326	ug/L	0.2921	125.6	-67.84
Al3961_R		641.8	ug/L	4.418	0.6883	534.8
As1891_A		54.47	ug/L	0.08762	0.1609	35.43
B_2089_A		31.91	ug/L	0.6037	1.892	67.74
Ba4554_R		9.679	ug/L	0.1085	1.121	482.2
Be3130_R		0.02710	ug/L	0.06343	234.1	-2.265
Ca3158_R		6,922	ug/L	16.22	0.2343	7,639
Cd2265_A		0.06160	ug/L	0.03600	58.43	3.471
Co2286_A		0.09133	ug/L	0.03316	36.30	12.71
Cr2677_A		2.175	ug/L	0.3757	17.27	45.96
Cu3273_A		1.805	ug/L	0.1207	6.689	-12.99
Fe2599_R		2,496	ug/L	13.68	0.5481	3,591
K_7664_R		656.2	ug/L	25.31	3.857	235.6
Li6707_R		101.1	ug/L	0.005498	0.005437	899.1
Mg2025_A		628.0	ug/L	1.633	0.2601	311.0
Mn2576_R		76.23	ug/L	0.9106	1.195	664.6
Mo2020_A		5.107	ug/L	0.3281	6.425	26.38
Na5895_R	W	38,670	ug/L	165.6	0.4283	60,450
Ni2316_A		1.682	ug/L	0.2744	16.31	4.549
Pb2203_A		0.6668	ug/L	0.4880	73.18	1.686
Sb2068_A		1.056	ug/L	0.6620	62.68	2.174
Se1960_A		0.3220	ug/L	1.151	357.6	4.598
Si2516_R		5,887	ug/L	18.87	0.3205	2,583
Sn1899_A		3.259	ug/L	0.1104	3.388	4.892
Sr4215_R		153.8	ug/L	0.2682	0.1744	8,713
Ti3349_A		13.76	ug/L	0.05425	0.3944	514.7
Tl1908_A		0.4873	ug/L	0.5842	119.9	-0.5846
V_2924_A		7.857	ug/L	0.2673	3.402	137.1
Zn2062_A		3.168	ug/L	0.01585	0.5005	23.00
Y_3600_R		14,980	Cts/S	128.61	0.85857	14,980
Y_2243_A		14,319	Cts/S	22.057	0.15404	14,319
Y_3600_A		220,940	Cts/S	598.54	0.27091	220,940

SN3779-007

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:48:47PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2934	ug/L	0.5637	192.1	-53.68
Al3961_R		83.66	ug/L	2.234	2.670	74.36
As1891_A		12.37	ug/L	0.05610	0.4535	6.940
B_2089_A		12.70	ug/L	0.1240	0.9765	29.44
Ba4554_R		12.59	ug/L	0.1588	1.262	607.8
Be3130_R		-0.08200	ug/L	0.05097	62.16	-9.371
Ca3158_R	W	26,540	ug/L	81.35	0.3065	29,280
Cd2265_A		0.003371	ug/L	0.04668	1,385	0.3717
Co2286_A		0.1081	ug/L	0.06088	56.32	12.71
Cr2677_A		3.967	ug/L	0.03922	0.9888	80.60
Cu3273_A		2.754	ug/L	0.08316	3.020	1.898
Fe2599_R		1,119	ug/L	3.356	0.3000	1,605
K_7664_R		665.5	ug/L	53.41	8.024	240.3
Li6707_R		33.68	ug/L	1.227	3.643	328.4
Mg2025_A		2,641	ug/L	14.13	0.5349	1,331
Mn2576_R		9.646	ug/L	0.3601	3.733	86.80
Mo2020_A		1.353	ug/L	0.09301	6.876	7.274
Na5895_R		8,044	ug/L	25.17	0.3129	12,490
Ni2316_A		2.066	ug/L	0.1168	5.653	5.874

SN3779-007

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:48:47PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.2050	ug/L	0.1936	94.43	0.1005
Sb2068_A		-0.3168	ug/L	0.2312	72.97	0.9899
Se1960_A		-1.833	ug/L	2.581	140.8	3.541
Si2516_R		3,741	ug/L	7.222	0.1931	1,644
Sn1899_A		1.163	ug/L	0.1222	10.51	2.637
Sr4215_R		498.5	ug/L	2.695	0.5407	28,190
Ti3349_A		4.921	ug/L	0.07800	1.585	168.3
Tl1908_A		0.3007	ug/L	0.3330	110.8	-0.7087
V_2924_A		1.827	ug/L	0.02396	1.311	29.21
Zn2062_A		2.459	ug/L	0.06988	2.842	17.99
Y_3600_R		14,938	Cts/S	12.605	0.084378	14,938
Y_2243_A		14,311	Cts/S	60.959	0.42595	14,311
Y_3600_A		221,660	Cts/S	1,204.6	0.54344	221,660

SN3779-008

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:53:04PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4045	ug/L	0.1973	48.79	-65.30
Al3961_R		950.4	ug/L	2.620	0.2757	806.2
As1891_A		25.70	ug/L	0.6732	2.619	15.80
B_2089_A		10.06	ug/L	0.2592	2.576	24.09
Ba4554_R		22.00	ug/L	0.3631	1.651	1,016
Be3130_R		-0.06096	ug/L	0.03265	53.55	-9.705
Ca3158_R		24,980	ug/L	217.4	0.8702	27,510
Cd2265_A		0.03473	ug/L	0.01694	48.77	3.038
Co2286_A		0.4675	ug/L	0.02413	5.162	15.38
Cr2677_A		1.327	ug/L	0.04534	3.416	29.31
Cu3273_A		2.340	ug/L	0.7998	34.18	-5.088
Fe2599_R		2,677	ug/L	34.97	1.306	3,835
K_7664_R		853.6	ug/L	3.344	0.3917	345.8
Li6707_R		26.37	ug/L	0.5166	1.959	266.4
Mg2025_A		1,692	ug/L	10.25	0.6059	845.9
Mn2576_R		38.70	ug/L	0.3939	1.018	337.3
Mo2020_A		1.531	ug/L	0.01745	1.140	8.136
Na5895_R		12,920	ug/L	82.46	0.6381	20,070
Ni2316_A		2.423	ug/L	0.04123	1.702	6.865
Pb2203_A		-0.01701	ug/L	0.2410	1,417	0.3607
Sb2068_A		0.2089	ug/L	0.3569	170.9	1.474
Se1960_A		0.2891	ug/L	2.339	809.0	4.552
Si2516_R		5,312	ug/L	2.498	0.04702	2,323
Sn1899_A		0.7882	ug/L	0.1379	17.50	2.223
Sr4215_R		357.7	ug/L	2.743	0.7670	20,190
Ti3349_A		46.04	ug/L	0.1462	0.3176	1,765
Tl1908_A		0.1527	ug/L	0.3825	250.5	-0.9372
V_2924_A		4.248	ug/L	0.05184	1.221	72.71
Zn2062_A		4.824	ug/L	0.02242	0.4647	34.47
Y_3600_R		14,915	Cts/S	125.78	0.84327	14,915
Y_2243_A		14,240	Cts/S	76.007	0.53377	14,240
Y_3600_A		218,890	Cts/S	220.27	0.10063	218,890

SN3779-009

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:57:20PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-009

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 6:57:20PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1697	ug/L	0.005730	3.376	-63.19
Al3961_R		190.5	ug/L	15.02	7.884	173.7
As1891_A		17.15	ug/L	1.048	6.115	10.21
B_2089_A		5.337	ug/L	0.2446	4.583	14.90
Ba4554_R		18.78	ug/L	0.09124	0.4858	893.4
Be3130_R		-0.06458	ug/L	0.01671	25.88	-8.810
Ca3158_R	W	34,570	ug/L	72.92	0.2109	38,820
Cd2265_A		-0.01848	ug/L	0.06719	363.6	0.5477
Co2286_A		0.2132	ug/L	0.02959	13.88	13.59
Cr2677_A		0.6668	ug/L	0.03700	5.549	17.03
Cu3273_A		1.542	ug/L	0.1710	11.09	-17.14
Fe2599_R		1,737	ug/L	11.72	0.6747	2,537
K_7664_R		1,081	ug/L	13.07	1.209	483.2
Li6707_R		17.03	ug/L	0.01038	0.06095	191.5
Mg2025_A		1,625	ug/L	13.23	0.8140	821.8
Mn2576_R		13.43	ug/L	0.2567	1.912	121.3
Mo2020_A		0.5446	ug/L	0.01992	3.658	3.183
Na5895_R		4,992	ug/L	33.92	0.6794	7,865
Ni2316_A		0.9178	ug/L	0.2765	30.12	1.992
Pb2203_A		0.2116	ug/L	0.2200	104.0	0.8992
Sb2068_A		-0.4539	ug/L	0.5340	117.6	0.8920
Se1960_A		-0.6699	ug/L	0.2254	33.65	4.129
Si2516_R		3,658	ug/L	9.216	0.2519	1,637
Sn1899_A		0.4276	ug/L	0.09957	23.28	1.860
Sr4215_R		406.4	ug/L	1.424	0.3504	23,390
Ti3349_A		15.38	ug/L	0.1928	1.254	584.5
Tl1908_A		0.7578	ug/L	0.6633	87.53	-0.2289
V_2924_A		2.614	ug/L	0.06371	2.437	44.21
Zn2062_A		1.527	ug/L	0.09622	6.300	11.54
Y_3600_R		15,205	Cts/S	20.319	0.13363	15,205
Y_2243_A		14,410	Cts/S	136.92	0.95015	14,410
Y_3600_A		223,330	Cts/S	1,408.1	0.63049	223,330

SN3779-010

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:01:37PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2664	ug/L	0.2279	85.55	-62.05
Al3961_R		413.7	ug/L	17.08	4.130	339.5
As1891_A		45.81	ug/L	0.03210	0.07006	29.62
B_2089_A		119.7	ug/L	0.05839	0.04880	242.2
Ba4554_R		5.808	ug/L	0.2023	3.483	315.9
Be3130_R		-0.007274	ug/L	0.05517	758.3	-4.482
Ca3158_R		985.3	ug/L	5.701	0.5786	1,078
Cd2265_A		0.0009940	ug/L	0.009697	976.0	1.351
Co2286_A		-0.1448	ug/L	0.2003	138.4	11.12
Cr2677_A		0.1172	ug/L	0.03667	31.30	6.243
Cu3273_A		0.4527	ug/L	0.8582	189.6	-33.42
Fe2599_R		2,015	ug/L	10.51	0.5216	2,926
K_7664_R		429.9	ug/L	7.392	1.719	108.6
Li6707_R		173.4	ug/L	3.908	2.253	1,523
Mg2025_A		102.2	ug/L	0.7537	0.7375	44.44
Mn2576_R		19.47	ug/L	0.7148	3.672	173.0
Mo2020_A		3.122	ug/L	0.009504	0.3044	16.31
Na5895_R	W	69,220	ug/L	300.2	0.4337	109,200
Ni2316_A		0.7404	ug/L	0.03088	4.170	1.428

SN3779-010

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:01:37PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.07843	ug/L	0.2037	259.8	0.6133
Sb2068_A		-0.9160	ug/L	0.7857	85.78	0.5064
Se1960_A		-0.3022	ug/L	0.4162	137.7	4.290
Si2516_R		8,715	ug/L	29.81	0.3420	3,847
Sn1899_A		0.5624	ug/L	0.08726	15.52	1.996
Sr4215_R		19.01	ug/L	0.009687	0.05095	1,073
Ti3349_A		4.340	ug/L	0.3983	9.179	144.1
Tl1908_A		0.7515	ug/L	0.01159	1.542	-0.2286
V_2924_A		1.292	ug/L	0.01388	1.074	19.55
Zn2062_A		2.296	ug/L	0.02999	1.306	16.90
Y_3600_R		15,113	Cts/S	94.186	0.62322	15,113
Y_2243_A		14,338	Cts/S	4.5031	0.031407	14,338
Y_3600_A		219,660	Cts/S	257.85	0.11738	219,660

CCV

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:05:54PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		495.8	ug/L	0.2578	0.05200	11,920
Al3961_R		12,450	ug/L	26.67	0.2143	10,250
As1891_A		497.5	ug/L	4.981	1.001	331.2
B_2089_A		494.0	ug/L	3.816	0.7724	993.0
Ba4554_R		492.6	ug/L	3.459	0.7022	20,920
Be3130_R		501.0	ug/L	2.122	0.4236	32,230
Ca3158_R		12,380	ug/L	4.398	0.03552	13,260
Cd2265_A		494.4	ug/L	4.576	0.9256	12,510
Co2286_A		503.6	ug/L	4.311	0.8561	3,175
Cr2677_A		506.6	ug/L	0.2973	0.05870	9,556
Cu3273_A		502.0	ug/L	0.7001	0.1395	7,514
Fe2599_R		12,580	ug/L	60.27	0.4791	17,540
K_7664_R		12,510	ug/L	30.43	0.2433	6,725
Li6707_R		500.3	ug/L	5.224	1.044	4,139
Mg2025_A		12,610	ug/L	97.78	0.7757	6,339
Mn2576_R		496.8	ug/L	0.3540	0.07126	4,184
Mo2020_A		499.1	ug/L	2.068	0.4144	2,508
Na5895_R		12,680	ug/L	10.18	0.08031	19,160
Ni2316_A		497.9	ug/L	4.169	0.8373	1,640
Pb2203_A		498.8	ug/L	5.185	1.039	913.6
Sb2068_A		491.8	ug/L	2.617	0.5321	409.7
Se1960_A		496.8	ug/L	3.450	0.6943	239.2
Si2516_R		12,640	ug/L	32.66	0.2583	5,355
Sn1899_A		490.0	ug/L	4.729	0.9653	521.1
Sr4215_R		503.6	ug/L	2.116	0.4201	27,680
Ti3349_A		496.3	ug/L	1.091	0.2198	19,080
Tl1908_A		510.0	ug/L	5.099	0.9999	549.9
V_2924_A		502.5	ug/L	1.128	0.2245	8,771
Zn2062_A		490.8	ug/L	4.219	0.8597	3,407
Y_3600_R		14,515	Cts/S	41.250	0.28419	14,515
Y_2243_A		14,130	Cts/S	89.609	0.63416	14,130
Y_3600_A		216,520	Cts/S	720.68	0.33285	216,520

CCB

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:10:02PM   Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:10:02PM　　Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1417	ug/L	0.3383	238.7	-47.44
Al3961_R		1.351	ug/L	3.253	240.8	-14.35
As1891_A		0.02703	ug/L	0.1018	376.5	-1.368
B_2089_A		0.6107	ug/L	0.07506	12.29	5.495
Ba4554_R		-0.007207	ug/L	0.1197	1,660	58.45
Be3130_R		-0.1070	ug/L	0.01971	18.41	-10.83
Ca3158_R		-3.888	ug/L	0.9778	25.15	-26.56
Cd2265_A		0.01015	ug/L	0.02326	229.2	-0.7407
Co2286_A		-0.06619	ug/L	0.2291	346.1	11.61
Cr2677_A		-0.1729	ug/L	0.1459	84.39	0.7036
Cu3273_A		0.7705	ug/L	0.5448	70.71	-28.54
Fe2599_R		6.582	ug/L	1.518	23.06	9.180
K_7664_R		49.35	ug/L	25.05	50.75	-106.7
Li6707_R		2.812	ug/L	0.5578	19.84	67.90
Mg2025_A		3.348	ug/L	0.6776	20.24	-5.871
Mn2576_R		0.02489	ug/L	0.07543	303.1	2.965
Mo2020_A		1.802	ug/L	0.5039	27.97	9.603
Na5895_R		20.11	ug/L	10.56	52.49	-31.72
Ni2316_A		0.3119	ug/L	0.04607	14.77	0.1821
Pb2203_A		0.1541	ug/L	0.5635	365.7	0.7129
Sb2068_A		-0.6070	ug/L	0.02725	4.489	0.6978
Se1960_A		0.2062	ug/L	0.8215	398.5	4.540
Si2516_R		20.45	ug/L	3.542	17.32	29.90
Sn1899_A		0.3776	ug/L	0.04295	11.37	1.802
Sr4215_R		-0.1035	ug/L	0.3196	308.8	-21.45
Ti3349_A		0.04735	ug/L	0.5610	1,185	-23.80
Tl1908_A		-0.1773	ug/L	1.003	565.5	-1.222
V_2924_A		-0.1644	ug/L	0.2561	155.8	-6.824
Zn2062_A		-0.06774	ug/L	0.02739	40.44	0.2445
Y_3600_R		14,858	Cts/S	56.953	0.38333	14,858
Y_2243_A		14,380	Cts/S	28.754	0.19996	14,380
Y_3600_A		222,730	Cts/S	770.69	0.34601	222,730

SN3779-011

Method Name: FAST-2016_NO_AU　　Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:14:21PM　　Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.1151	ug/L	0.6385	554.8	-54.61
Al3961_R		248.6	ug/L	0.7672	0.3087	195.6
As1891_A		37.24	ug/L	0.4511	1.211	23.87
B_2089_A		51.99	ug/L	0.3134	0.6028	107.4
Ba4554_R		3.321	ug/L	0.2205	6.641	203.3
Be3130_R		-0.1044	ug/L	0.1260	120.7	-10.85
Ca3158_R		1,337	ug/L	2.980	0.2229	1,450
Cd2265_A		0.01260	ug/L	0.03058	242.6	-0.4785
Co2286_A		-0.1967	ug/L	0.06168	31.36	10.78
Cr2677_A		0.05995	ug/L	0.1059	176.6	5.138
Cu3273_A		1.078	ug/L	0.07719	7.157	-23.43
Fe2599_R		167.6	ug/L	3.813	2.275	239.7
K_7664_R		347.2	ug/L	65.59	18.89	60.85
Li6707_R		92.59	ug/L	3.111	3.360	822.9
Mg2025_A		124.2	ug/L	1.582	1.274	55.36
Mn2576_R		3.961	ug/L	0.3942	9.952	36.99
Mo2020_A		1.972	ug/L	0.09001	4.565	10.42
Na5895_R	W	56,070	ug/L	435.0	0.7758	87,250
Ni2316_A		0.3796	ug/L	0.1730	45.59	0.3927

SN3779-011

Method Name:	FAST-2016_NO_AU		Method Revision:	1,386
Analyst Name:	RS			
Acquire Date:	5/21/2020 7:14:21PM		Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.4876	ug/L	0.8313	170.5	1.286
Sb2068_A		0.4894	ug/L	0.1539	31.44	1.625
Se1960_A		0.1463	ug/L	0.2079	142.1	4.492
Si2516_R		5,397	ug/L	40.62	0.7527	2,358
Sn1899_A		0.8859	ug/L	0.5640	63.66	2.339
Sr4215_R		25.14	ug/L	0.3031	1.206	1,404
Ti3349_A		5.335	ug/L	0.04126	0.7735	182.6
Tl1908_A		0.1524	ug/L	0.4693	307.9	-0.8633
V_2924_A		3.074	ug/L	0.03343	1.087	51.04
Zn2062_A		2.829	ug/L	0.02969	1.050	20.61
Y_3600_R		14,908	Cts/S	186.82	1.2532	14,908
Y_2243_A		14,308	Cts/S	8.7771	0.061346	14,308
Y_3600_A		219,280	Cts/S	60.472	0.027578	219,280

SN3779-012

Method Name:	FAST-2016_NO_AU		Method Revision:	1,386
Analyst Name:	RS			
Acquire Date:	5/21/2020 7:18:39PM		Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.3039	ug/L	0.2413	79.38	-58.04
Al3961_R		51.23	ug/L	3.734	7.289	45.19
As1891_A		10.67	ug/L	0.2844	2.666	5.900
B_2089_A		12.16	ug/L	0.01136	0.09337	28.56
Ba4554_R		49.19	ug/L	0.5987	1.217	2,169
Be3130_R		0.02116	ug/L	0.07304	345.2	-2.304
Ca3158_R	W	25,200	ug/L	102.0	0.4046	27,360
Cd2265_A		0.01527	ug/L	0.01686	110.4	-0.6039
Co2286_A		-0.2557	ug/L	0.2557	99.96	10.43
Cr2677_A		0.2830	ug/L	0.2890	102.1	9.402
Cu3273_A		8.856	ug/L	0.1506	1.701	95.62
Fe2599_R		13.62	ug/L	0.7568	5.555	19.03
K_7664_R		4,787	ug/L	37.83	0.7902	2,525
Li6707_R		10.84	ug/L	2.979	27.49	133.8
Mg2025_A		1,337	ug/L	4.824	0.3608	675.1
Mn2576_R		0.8332	ug/L	0.4429	53.16	10.17
Mo2020_A		0.6598	ug/L	0.1116	16.92	3.778
Na5895_R		10,380	ug/L	49.99	0.4814	15,890
Ni2316_A		0.2080	ug/L	0.2173	104.5	-0.1922
Pb2203_A		-1.361	ug/L	0.4445	32.67	-2.128
Sb2068_A		-1.247	ug/L	0.4945	39.66	0.1564
Se1960_A		-1.569	ug/L	1.363	86.83	3.699
Si2516_R		2,781	ug/L	32.02	1.152	1,209
Sn1899_A		0.5629	ug/L	0.005963	1.059	2.008
Sr4215_R		211.9	ug/L	1.743	0.8223	11,790
Ti3349_A		-0.4012	ug/L	0.1985	49.47	-41.13
Tl1908_A		1.090	ug/L	0.8024	73.61	0.1692
V_2924_A		0.7592	ug/L	0.2913	38.37	9.842
Zn2062_A		1.958	ug/L	0.01307	0.6673	14.60
Y_3600_R		14,707	Cts/S	36.055	0.24516	14,707
Y_2243_A		14,423	Cts/S	14.024	0.097230	14,423
Y_3600_A		220,250	Cts/S	2,667.0	1.2109	220,250

SN3779-013

Method Name:	FAST-2016_NO_AU		Method Revision:	1,386
Analyst Name:	RS			
Acquire Date:	5/21/2020 7:22:58PM		Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-013

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:22:58PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1359	ug/L	0.2369	174.4	-47.53
Al3961_R		33.83	ug/L	6.058	17.91	30.23
As1891_A		10.48	ug/L	0.7368	7.032	5.807
B_2089_A		12.01	ug/L	0.04728	0.3937	28.41
Ba4554_R		47.04	ug/L	0.1070	0.2275	2,099
Be3130_R		-0.1354	ug/L	0.09357	69.09	-12.67
Ca3158_R		24,110	ug/L	76.38	0.3168	26,460
Cd2265_A		-0.02185	ug/L	0.006740	30.84	-1.578
Co2286_A		-0.2348	ug/L	0.08887	37.85	10.62
Cr2677_A		0.5587	ug/L	0.1691	30.26	14.90
Cu3273_A		8.237	ug/L	0.01893	0.2298	87.11
Fe2599_R		7.692	ug/L	0.01247	0.1622	10.77
K_7664_R		4,586	ug/L	55.16	1.203	2,440
Li6707_R		9.795	ug/L	0.4069	4.154	126.5
Mg2025_A		1,297	ug/L	4.030	0.3107	658.6
Mn2576_R		0.1575	ug/L	0.4327	274.7	4.452
Mo2020_A		0.5877	ug/L	0.2019	34.36	3.427
Na5895_R		9,967	ug/L	23.22	0.2330	15,410
Ni2316_A		0.3376	ug/L	0.08326	24.67	0.2418
Pb2203_A		-0.2344	ug/L	0.4086	174.4	-0.01451
Sb2068_A		-0.1336	ug/L	0.1145	85.67	1.117
Se1960_A		-1.960	ug/L	1.493	76.14	3.531
Si2516_R		2,631	ug/L	21.59	0.8208	1,157
Sn1899_A		0.03077	ug/L	0.6940	2,255	1.439
Sr4215_R		202.6	ug/L	0.6936	0.3424	11,390
Ti3349_A		-0.5367	ug/L	0.1559	29.06	-46.87
Tl1908_A		0.2155	ug/L	0.1270	58.94	-0.7964
V_2924_A		0.4079	ug/L	0.1166	28.59	3.628
Zn2062_A		2.276	ug/L	0.003480	0.1529	16.96
Y_3600_R		14,865	Cts/S	54.251	0.36497	14,865
Y_2243_A		14,507	Cts/S	29.367	0.20244	14,507
Y_3600_A		222,660	Cts/S	1,600.5	0.71881	222,660

SN3779-014

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:27:19PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1918	ug/L	0.04018	20.95	-52.86
Al3961_R		1,460	ug/L	6.525	0.4471	1,206
As1891_A		41.23	ug/L	0.7753	1.881	26.66
B_2089_A		69.31	ug/L	0.08214	0.1185	142.5
Ba4554_R		8.657	ug/L	0.1412	1.631	429.8
Be3130_R		0.02706	ug/L	0.07997	295.6	-2.268
Ca3158_R		3,921	ug/L	41.66	1.063	4,241
Cd2265_A		-0.05406	ug/L	0.01744	32.27	-1.350
Co2286_A		0.2376	ug/L	0.02282	9.601	13.73
Cr2677_A		2.302	ug/L	0.04442	1.929	47.18
Cu3273_A		1.194	ug/L	0.4207	35.23	-21.40
Fe2599_R		880.5	ug/L	11.87	1.348	1,244
K_7664_R		948.3	ug/L	61.95	6.533	393.8
Li6707_R		138.8	ug/L	1.583	1.140	1,196
Mg2025_A		629.4	ug/L	0.2261	0.03592	312.9
Mn2576_R		18.15	ug/L	0.1498	0.8254	157.4
Mo2020_A		3.307	ug/L	0.1820	5.504	17.29
Na5895_R	W	58,370	ug/L	337.7	0.5785	89,650
Ni2316_A		1.687	ug/L	0.2642	15.66	4.706

SN3779-014

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:27:19PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		1.528	ug/L	0.7704	50.42	3.011
Sb2068_A		-0.3652	ug/L	0.5790	158.6	0.9430
Se1960_A		-1.630	ug/L	1.072	65.73	3.673
Si2516_R		8,733	ug/L	27.27	0.3122	3,753
Sn1899_A		0.5034	ug/L	0.4647	92.31	1.937
Sr4215_R		86.94	ug/L	0.4266	0.4907	4,831
Ti3349_A		16.94	ug/L	0.2964	1.750	624.5
Tl1908_A		0.8341	ug/L	0.4191	50.25	-0.1388
V_2924_A		10.63	ug/L	0.05825	0.5478	182.7
Zn2062_A		4.489	ug/L	0.1076	2.396	32.43
Y_3600_R		14,714	Cts/S	20.039	0.13619	14,714
Y_2243_A		14,377	Cts/S	51.285	0.35671	14,377
Y_3600_A		215,680	Cts/S	639.22	0.29638	215,680

SN3779-015

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:31:36PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.2976	ug/L	0.3104	104.3	-57.22
Al3961_R		30.08	ug/L	5.840	19.41	28.25
As1891_A		22.49	ug/L	0.9137	4.062	13.80
B_2089_A		9.043	ug/L	0.2634	2.912	22.02
Ba4554_R		9.675	ug/L	0.1171	1.210	472.9
Be3130_R		-0.006088	ug/L	0.04711	773.8	-3.407
Ca3158_R	W	26,290	ug/L	89.69	0.3412	28,520
Cd2265_A		-0.04340	ug/L	0.007632	17.58	-2.064
Co2286_A		-0.3650	ug/L	0.03263	8.938	9.601
Cr2677_A		0.9593	ug/L	0.1390	14.49	22.08
Cu3273_A		1.953	ug/L	0.1869	9.572	-9.881
Fe2599_R		37.85	ug/L	2.896	7.652	53.19
K_7664_R		675.7	ug/L	27.27	4.036	241.9
Li6707_R		39.14	ug/L	1.971	5.037	368.1
Mg2025_A		2,581	ug/L	17.61	0.6824	1,294
Mn2576_R		0.3387	ug/L	0.1235	36.48	6.262
Mo2020_A		0.2351	ug/L	0.1334	56.76	1.570
Na5895_R		9,656	ug/L	22.24	0.2303	14,760
Ni2316_A		0.4725	ug/L	0.1113	23.55	0.6707
Pb2203_A		-0.6049	ug/L	0.6550	108.3	-0.7008
Sb2068_A		-0.7358	ug/L	0.2587	35.17	0.5830
Se1960_A		-1.088	ug/L	0.8332	76.60	3.881
Si2516_R		3,722	ug/L	21.15	0.5681	1,609
Sn1899_A		0.2769	ug/L	0.04085	14.75	1.677
Sr4215_R		494.2	ug/L	3.440	0.6961	27,490
Ti3349_A		-0.4470	ug/L	0.3177	71.07	-42.27
Tl1908_A		0.1995	ug/L	0.4253	213.2	-0.7879
V_2924_A		15.79	ug/L	0.2105	1.333	274.9
Zn2062_A		2.347	ug/L	0.08515	3.628	17.14
Y_3600_R		14,692	Cts/S	116.80	0.79496	14,692
Y_2243_A		14,240	Cts/S	52.364	0.36774	14,240
Y_3600_A		217,060	Cts/S	429.38	0.19782	217,060

SN3779-016

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:35:55PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-016

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:35:55PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1367	ug/L	0.4263	311.8	-47.18
Al3961_R		48.03	ug/L	13.77	28.68	43.48
As1891_A		12.74	ug/L	0.6613	5.191	7.272
B_2089_A		13.45	ug/L	0.3307	2.458	30.93
Ba4554_R		43.58	ug/L	0.1750	0.4016	1,957
Be3130_R		-0.02741	ug/L	0.1214	442.9	-5.492
Ca3158_R	W	25,800	ug/L	192.3	0.7454	28,430
Cd2265_A		-0.04284	ug/L	0.04596	107.3	-2.078
Co2286_A		-0.05680	ug/L	0.02766	48.70	11.62
Cr2677_A		0.7929	ug/L	0.1222	15.41	19.20
Cu3273_A		4.650	ug/L	0.2818	6.060	31.19
Fe2599_R		27.78	ug/L	1.181	4.251	39.60
K_7664_R		3,953	ug/L	7.431	0.1880	2,093
Li6707_R		14.10	ug/L	4.600	32.62	163.0
Mg2025_A		1,361	ug/L	9.347	0.6870	682.7
Mn2576_R		0.3728	ug/L	0.1699	45.57	6.326
Mo2020_A		0.5950	ug/L	0.08105	13.62	3.425
Na5895_R		11,590	ug/L	18.07	0.1560	18,000
Ni2316_A		0.5050	ug/L	0.1859	36.81	0.7952
Pb2203_A		-1.086	ug/L	0.4820	44.36	-1.607
Sb2068_A		-0.1089	ug/L	1.054	967.3	1.117
Se1960_A		-0.3423	ug/L	2.270	663.0	4.257
Si2516_R		2,910	ug/L	19.54	0.6713	1,283
Sn1899_A		0.6975	ug/L	0.7212	103.4	2.143
Sr4215_R		219.0	ug/L	1.025	0.4680	12,370
Ti3349_A		-0.3711	ug/L	0.2487	67.00	-39.88
Tl1908_A		0.5046	ug/L	0.4229	83.80	-0.4722
V_2924_A		0.7517	ug/L	0.1949	25.92	9.725
Zn2062_A		1.567	ug/L	0.02948	1.881	11.75
Y_3600_R		14,927	Cts/S	250.73	1.6797	14,927
Y_2243_A		14,328	Cts/S	114.81	0.80127	14,328
Y_3600_A		220,050	Cts/S	697.61	0.31703	220,050

SN3779-017

Method Name: FAST-2016_NO_AU   Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:40:13PM   Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.02176	ug/L	0.3053	1,403	-60.55
Al3961_R		2,603	ug/L	5.617	0.2158	2,176
As1891_A		43.16	ug/L	0.3689	0.8549	28.31
B_2089_A		76.31	ug/L	0.2991	0.3919	158.4
Ba4554_R		11.01	ug/L	0.4148	3.766	535.1
Be3130_R		0.04632	ug/L	0.05554	119.9	-1.354
Ca3158_R		3,410	ug/L	5.301	0.1555	3,714
Cd2265_A		-0.004822	ug/L	0.01834	380.4	0.2387
Co2286_A		-0.007510	ug/L	0.01599	212.8	12.40
Cr2677_A		3.034	ug/L	0.3636	11.98	62.00
Cu3273_A		1.179	ug/L	0.1801	15.28	-22.02
Fe2599_R		1,145	ug/L	6.815	0.5951	1,631
K_7664_R		1,526	ug/L	42.71	2.799	720.3
Li6707_R		135.9	ug/L	0.2316	0.1704	1,181
Mg2025_A		710.5	ug/L	1.861	0.2619	358.6
Mn2576_R		15.56	ug/L	0.7907	5.083	136.1
Mo2020_A		3.000	ug/L	0.07541	2.513	15.92
Na5895_R	W	58,070	ug/L	107.8	0.1856	89,870
Ni2316_A		1.754	ug/L	0.2342	13.35	4.957

SN3779-017

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:40:13PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.9602	ug/L	0.7869	81.95	1.731
Sb2068_A		-0.9902	ug/L	0.2871	29.00	0.4369
Se1960_A		-0.5345	ug/L	0.7337	137.3	4.263
Si2516_R		10,830	ug/L	4.467	0.04126	4,684
Sn1899_A		0.3058	ug/L	0.09021	29.50	1.746
Sr4215_R		74.94	ug/L	0.1505	0.2008	4,194
Ti3349_A		23.72	ug/L	0.3220	1.358	899.6
Tl1908_A		0.2485	ug/L	0.1078	43.36	-0.7958
V_2924_A		10.05	ug/L	0.03707	0.3690	175.6
Zn2062_A		3.577	ug/L	0.07513	2.101	26.31
Y_3600_R		14,827	Cts/S	58.825	0.39673	14,827
Y_2243_A		14,557	Cts/S	20.975	0.14409	14,557
Y_3600_A		219,420	Cts/S	1,157.0	0.52731	219,420

PBSNE19ICS1

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:44:29PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.06052	ug/L	0.1935	319.7	-51.89
Al3961_R		14.06	ug/L	16.49	117.2	-3.613
As1891_A		-0.3197	ug/L	0.09901	30.97	-1.603
B_2089_A		1.601	ug/L	0.4132	25.81	7.387
Ba4554_R		0.1856	ug/L	0.3066	165.2	65.80
Be3130_R		-0.04926	ug/L	0.006564	13.33	-6.927
Ca3158_R		9.333	ug/L	1.230	13.18	-11.86
Cd2265_A		-0.05084	ug/L	0.06678	131.3	-2.281
Co2286_A		-0.1998	ug/L	0.06632	33.19	10.74
Cr2677_A		0.4555	ug/L	0.3388	74.39	12.69
Cu3273_A		1.106	ug/L	0.1403	12.69	-22.96
Fe2599_R		32.52	ug/L	0.1143	0.3515	45.50
K_7664_R		44.37	ug/L	21.87	49.30	-107.8
Li6707_R		3.120	ug/L	0.3670	11.77	69.44
Mg2025_A		16.20	ug/L	1.184	7.307	0.6561
Mn2576_R		0.7263	ug/L	0.1872	25.78	8.869
Mo2020_A		0.2125	ug/L	0.06171	29.04	1.477
Na5895_R		47.81	ug/L	7.398	15.47	11.13
Ni2316_A		0.3127	ug/L	0.01634	5.224	0.1450
Pb2203_A		0.1910	ug/L	0.5851	306.4	0.7864
Sb2068_A		0.5154	ug/L	0.2680	51.99	1.443
Se1960_A		-2.372	ug/L	0.01367	0.5761	3.296
Si2516_R		17.50	ug/L	3.424	19.57	28.20
Sn1899_A		24.02	ug/L	0.6053	2.520	27.29
Sr4215_R		-0.2247	ug/L	0.1495	66.52	-27.88
Ti3349_A		0.1230	ug/L	0.09712	78.95	-20.48
Tl1908_A		-0.5827	ug/L	0.4347	74.61	-1.666
V_2924_A		-0.1159	ug/L	0.09463	81.63	-5.712
Zn2062_A		3.524	ug/L	0.1017	2.885	25.59
Y_3600_R		14,635	Cts/S	9.0734	0.061999	14,635
Y_2243_A		14,358	Cts/S	81.509	0.56768	14,358
Y_3600_A		219,180	Cts/S	387.63	0.17685	219,180

LCSONE19ICS1

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:48:48PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LCSONE19ICS1

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:48:48PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		48.41	ug/L	0.6085	1.257	1,113
Al3961_R		2,013	ug/L	33.40	1.659	1,643
As1891_A		97.03	ug/L	0.09832	0.1013	64.33
B_2089_A		452.4	ug/L	2.004	0.4431	904.9
Ba4554_R		1,967	ug/L	18.03	0.9166	83,190
Be3130_R		50.06	ug/L	0.4538	0.9065	3,210
Ca3158_R		2,496	ug/L	32.40	1.298	2,650
Cd2265_A		241.2	ug/L	1.162	0.4818	6,165
Co2286_A		502.5	ug/L	1.846	0.3674	3,205
Cr2677_A		205.5	ug/L	0.9262	0.4506	3,884
Cu3273_A		249.5	ug/L	1.060	0.4248	3,718
Fe2599_R		1,034	ug/L	9.038	0.8738	1,439
K_7664_R		10,230	ug/L	71.42	0.6979	5,466
Li6707_R		504.7	ug/L	2.682	0.5315	4,167
Mg2025_A		4,980	ug/L	24.30	0.4879	2,550
Mn2576_R		494.2	ug/L	4.681	0.9472	4,156
Mo2020_A		100.3	ug/L	0.3313	0.3302	510.1
Na5895_R		7,844	ug/L	139.0	1.772	11,810
Ni2316_A		486.8	ug/L	2.611	0.5364	1,614
Pb2203_A		97.22	ug/L	1.384	1.423	180.5
Sb2068_A		95.51	ug/L	0.07007	0.07336	77.80
Se1960_A		97.63	ug/L	0.1358	0.1391	51.18
Si2516_R		923.8	ug/L	5.156	0.5582	411.7
Sn1899_A		506.8	ug/L	0.9159	0.1807	545.3
Sr4215_R		517.0	ug/L	7.973	1.542	28,360
Ti3349_A		495.8	ug/L	2.530	0.5102	19,070
Tl1908_A		98.89	ug/L	1.118	1.130	108.1
V_2924_A		497.2	ug/L	2.402	0.4831	8,736
Zn2062_A		475.5	ug/L	2.195	0.4616	3,341
Y_3600_R		14,486	Cts/S	61.480	0.42441	14,486
Y_2243_A		14,294	Cts/S	77.152	0.53974	14,294
Y_3600_A		216,710	Cts/S	76.191	0.035159	216,710

LC2ONE19ICS1

Method Name: FAST-2016_NO_AU — Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:53:00PM — Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		49.16	ug/L	1.740	3.539	1,128
Al3961_R		2,051	ug/L	14.87	0.7250	1,653
As1891_A		95.45	ug/L	2.158	2.261	64.20
B_2089_A		444.5	ug/L	5.222	1.175	902.6
Ba4554_R		2,025	ug/L	1.017	0.05022	84,550
Be3130_R		50.96	ug/L	0.2649	0.5199	3,226
Ca3158_R		2,570	ug/L	8.887	0.3458	2,694
Cd2265_A		236.1	ug/L	2.487	1.053	6,126
Co2286_A		491.9	ug/L	5.199	1.057	3,186
Cr2677_A		205.1	ug/L	6.299	3.071	3,864
Cu3273_A		249.4	ug/L	4.800	1.925	3,706
Fe2599_R		1,057	ug/L	2.171	0.2054	1,452
K_7664_R		10,480	ug/L	12.39	0.1183	5,528
Li6707_R		515.4	ug/L	4.145	0.8042	4,200
Mg2025_A		4,911	ug/L	54.29	1.105	2,552
Mn2576_R		505.5	ug/L	3.289	0.6506	4,196
Mo2020_A		98.43	ug/L	0.6620	0.6725	507.9
Na5895_R		8,034	ug/L	8.125	0.1011	11,940
Ni2316_A		475.7	ug/L	5.147	1.082	1,601

LC2ONE19ICS1

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:53:00PM Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		94.77	ug/L	0.5058	0.5337	178.6
Sb2068_A		93.66	ug/L	1.771	1.891	77.48
Se1960_A		96.73	ug/L	0.5330	0.5510	51.52
Si2516_R		914.0	ug/L	2.999	0.3281	402.3
Sn1899_A		496.6	ug/L	5.169	1.041	542.4
Sr4215_R		530.3	ug/L	0.6540	0.1233	28,710
Ti3349_A		499.2	ug/L	13.29	2.662	19,150
Tl1908_A		98.23	ug/L	1.553	1.581	108.9
V_2924_A		492.4	ug/L	12.55	2.548	8,629
Zn2062_A		465.1	ug/L	4.386	0.9430	3,317
Y_3600_R		14,299	Cts/S	238.77	1.6698	14,299
Y_2243_A		14,509	Cts/S	121.54	0.83769	14,509
Y_3600_A		216,180	Cts/S	4,895.0	2.2644	216,180

CCV

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 7:57:12PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		495.7	ug/L	2.228	0.4495	12,060
Al3961_R		12,270	ug/L	91.85	0.7486	10,300
As1891_A		488.5	ug/L	7.798	1.596	332.6
B_2089_A		476.9	ug/L	8.817	1.849	980.9
Ba4554_R		483.2	ug/L	1.841	0.3809	20,910
Be3130_R		489.6	ug/L	4.580	0.9354	32,090
Ca3158_R		12,210	ug/L	26.22	0.2147	13,330
Cd2265_A		479.2	ug/L	9.641	2.012	12,400
Co2286_A		494.5	ug/L	9.715	1.965	3,189
Cr2677_A		509.4	ug/L	0.8904	0.1748	9,724
Cu3273_A		491.6	ug/L	1.963	0.3993	7,445
Fe2599_R		12,440	ug/L	88.15	0.7086	17,680
K_7664_R		12,420	ug/L	140.2	1.129	6,802
Li6707_R		491.3	ug/L	6.142	1.250	4,143
Mg2025_A		12,360	ug/L	239.9	1.941	6,357
Mn2576_R		486.7	ug/L	2.416	0.4964	4,177
Mo2020_A		491.7	ug/L	7.669	1.560	2,527
Na5895_R		12,650	ug/L	72.43	0.5725	19,490
Ni2316_A		479.8	ug/L	8.782	1.830	1,617
Pb2203_A		481.7	ug/L	10.19	2.114	902.4
Sb2068_A		476.9	ug/L	8.118	1.702	406.5
Se1960_A		486.5	ug/L	6.905	1.419	239.6
Si2516_R		12,350	ug/L	87.62	0.7095	5,330
Sn1899_A		473.9	ug/L	9.655	2.037	515.6
Sr4215_R		501.9	ug/L	3.364	0.6703	28,110
Ti3349_A		494.0	ug/L	1.263	0.2556	19,220
Tl1908_A		498.0	ug/L	8.866	1.780	549.3
V_2924_A		495.6	ug/L	2.206	0.4451	8,753
Zn2062_A		475.8	ug/L	8.834	1.857	3,378
Y_3600_R		14,792	Cts/S	252.24	1.7053	14,792
Y_2243_A		14,454	Cts/S	196.54	1.3598	14,454
Y_3600_A		219,100	Cts/S	684.70	0.31251	219,100

CCB

Method Name: FAST-2016_NO_AU Method Revision: 1,386
Analyst Name: RS
Acquire Date: 5/21/2020 8:01:20PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 8:01:20PM	Sample Type:	QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2317	ug/L	0.2904	125.3	-45.37
Al3961_R		15.79	ug/L	7.421	47.01	-2.191
As1891_A		0.2189	ug/L	0.001395	0.6375	-1.238
B_2089_A		0.7948	ug/L	0.3298	41.50	5.859
Ba4554_R		0.3349	ug/L	0.009980	2.980	73.21
Be3130_R		-0.005993	ug/L	0.02833	472.8	-4.176
Ca3158_R		0.3907	ug/L	2.117	541.9	-21.84
Cd2265_A		0.03735	ug/L	0.01512	40.49	-0.04416
Co2286_A		-0.05087	ug/L	0.08899	174.9	11.72
Cr2677_A		-0.1214	ug/L	0.1314	108.2	1.710
Cu3273_A		0.9857	ug/L	0.09272	9.407	-25.31
Fe2599_R		6.264	ug/L	3.428	54.73	8.708
K_7664_R		70.70	ug/L	6.299	8.909	-94.63
Li6707_R		2.135	ug/L	1.603	75.07	62.17
Mg2025_A		3.754	ug/L	1.384	36.87	-5.669
Mn2576_R		0.1157	ug/L	0.1439	124.4	3.740
Mo2020_A		1.628	ug/L	0.2336	14.35	8.723
Na5895_R		31.31	ug/L	3.154	10.07	-14.30
Ni2316_A		1.069	ug/L	1.286	120.3	2.703
Pb2203_A		-0.5665	ug/L	0.6784	119.8	-0.6355
Sb2068_A		0.2754	ug/L	0.8779	318.8	1.453
Se1960_A		0.1007	ug/L	0.3688	366.2	4.492
Si2516_R		24.68	ug/L	10.47	42.45	31.71
Sn1899_A		-0.05965	ug/L	0.5028	842.8	1.331
Sr4215_R		-0.2184	ug/L	0.2969	136.0	-27.91
Ti3349_A		0.1590	ug/L	0.2817	177.1	-19.42
Tl1908_A		0.3330	ug/L	0.3057	91.78	-0.6621
V_2924_A		-0.03798	ug/L	0.1263	332.6	-4.531
Zn2062_A		0.3868	ug/L	0.4584	118.5	3.459
Y_3600_R		14,845	Cts/S	40.862	0.27527	14,845
Y_2243_A		14,392	Cts/S	4.7897	0.033281	14,392
Y_3600_A		223,810	Cts/S	705.00	0.31500	223,810

SN3762-001

Method Name:	FAST-2016_NO_AU	Method Revision:	1,386
Analyst Name:	RS		
Acquire Date:	5/21/2020 8:05:44PM	Sample Type:	Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		3.545	ug/L	0.6111	17.24	-792.9
Al3961_R	W	69,510	ug/L	245.2	0.3527	58,640
As1891_A		14.26	ug/L	0.06136	0.4301	3.567
B_2089_A		5.308	ug/L	0.1157	2.179	15.41
Ba4554_R		249.4	ug/L	1.300	0.5211	10,890
Be3130_R		2.051	ug/L	0.05421	2.643	-89.87
Ca3158_R		5,993	ug/L	21.22	0.3541	6,566
Cd2265_A		0.1280	ug/L	0.05613	43.84	106.4
Co2286_A		24.10	ug/L	0.5953	2.470	229.8
Cr2677_A		53.97	ug/L	0.8595	1.592	1,054
Cu3273_A		34.18	ug/L	0.8073	2.362	426.8
Fe2599_R	W	78,330	ug/L	79.50	0.1015	112,000
K_7664_R		13,310	ug/L	17.08	0.1283	7,345
Li6707_R		79.97	ug/L	1.041	1.302	715.5
Mg2025_A		12,940	ug/L	196.4	1.518	6,797
Mn2576_R	W	1,243	ug/L	4.547	0.3658	10,710
Mo2020_A		3.538	ug/L	0.07060	1.995	18.87
Na5895_R		302.5	ug/L	4.524	1.496	407.1
Ni2316_A		31.14	ug/L	0.3844	1.235	97.81

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: I (Thermo iCAP 6500) **ANALYST**: RS **ANALYSIS DATE**: 05/22/2020

METHOD: ICP **FILE NAME**: INE22A

- ☒ 200.7
- ☒ 6010
- ☒ DOD
- ☐ ______

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
____________ (initals) on ___________ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW19418	05/22/2020	08/19/2021	0 ug/L
Standard 1	MW19381	05/06/2020	08/06/2020	Varies by Element
ICV	MW19415	05/21/2020	08/21/2020	Varies by Element
PQL	MW19372	05/01/2020	08/01/2020	Varies by Element
LRS1	MW19361	04/28/2020	07/28/2020	Varies by Element
LRS2	MW19408	05/14/2020	08/14/2020	Varies by Element
ICSA	MW19391	05/11/2020	08/11/2020	Varies by Element
ICSAB	MW19393	05/11/2020	08/11/2020	Varies by Element
CCV	MW19414	05/19/2020	08/19/2020	Varies by Element
Internal Standard	MW19401	05/13/2020	08/13/2020	5.0 mg/L Yttrium

Additional Comments and Notes:

Run Stopped after sample SN3855-007 only DOD samples accepted from this Run. ✓

REVIEWED
AP 5/27/20
KATAHDIN ANALYTICAL
METALS SECTION

Dilutions: Some samples were diluted based on history or due to interfering element concentrations.

Dilution preparations are as follows:

2x diln.: 4.0mL of sample (pipet M25) + 4.0mL of MW19407 (pipet M25)

5x diln.: 1.6 mL of sample (pipet M25) + 6.4 mL of MW19407 (pipet M25)

Post Spike: 0.004mL MS2257 (pipet M17), 0.08mL MS2220 (pipet M27), 0.04mL MS2219 and MS2231(pipet M27), to 8.0mL of sample (pipet M25) (Unless otherwise specified).

INSTRUMENT RUNLOG

Instrument: ICAP 6500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Blank	1.000	INE22A	5/22/2020	9:53	RS
Std 1	1.000	INE22A	5/22/2020	9:57	RS
ICV	1.000	INE22A	5/22/2020	10:01	RS
ICB	1.000	INE22A	5/22/2020	10:05	RS
PQL	1.000	INE22A	5/22/2020	10:10	RS
ICSA	1.000	INE22A	5/22/2020	10:14	RS
ICSAB	1.000	INE22A	5/22/2020	10:19	RS
CCV	1.000	INE22A	5/22/2020	10:24	RS
CCB	1.000	INE22A	5/22/2020	10:28	RS
LRS1	1.000	INE22A	5/22/2020	10:33	RS
LRS2	1.000	INE22A	5/22/2020	10:42	RS
CCV	1.000	INE22A	5/22/2020	10:48	RS
CCB	1.000	INE22A	5/22/2020	10:52	RS
PBSNE18ICS2	1.000	INE22A	5/22/2020	10:56	RS
LCSONE18ICS2	1.000	INE22A	5/22/2020	11:01	RS
LC2ONE18ICS2	1.000	INE22A	5/22/2020	11:05	RS
SN3681-001	2.000	INE22A	5/22/2020	11:09	RS
SN3681-002	1.000	INE22A	5/22/2020	11:13	RS
PBSNE19ICS2	1.000	INE22A	5/22/2020	11:18	RS
LCSONE19ICS2	1.000	INE22A	5/22/2020	11:23	RS
SN3697-001	1.000	INE22A	5/22/2020	11:27	RS
SN3697-002	1.000	INE22A	5/22/2020	11:31	RS
SN3697-003	1.000	INE22A	5/22/2020	11:36	RS
CCV	1.000	INE22A	5/22/2020	11:41	RS
CCB	1.000	INE22A	5/22/2020	11:45	RS
SN3697-003L	5.000	INE22A	5/22/2020	11:49	RS
SN3697-003A	1.000	INE22A	5/22/2020	11:54	RS
SN3697-003S	1.000	INE22A	5/22/2020	11:58	RS
SN3697-003P	1.000	INE22A	5/22/2020	12:02	RS
SN3697-004	1.000	INE22A	5/22/2020	12:06	RS
SN3697-005	1.000	INE22A	5/22/2020	12:11	RS
PBWNE19ICW2	1.000	INE22A	5/22/2020	12:15	RS
LCSWNE19ICW2	1.000	INE22A	5/22/2020	12:19	RS
SN3763-026	1.000	INE22A	5/22/2020	12:23	RS
PBSNE21ICS1	1.000	INE22A	5/22/2020	12:28	RS
CCV	1.000	INE22A	5/22/2020	12:32	RS
CCB	1.000	INE22A	5/22/2020	12:36	RS
LCSONE21ICS1	1.000	INE22A	5/22/2020	12:41	RS
SN3616-004RS	1.000	INE22A	5/22/2020	12:45	RS
PBWNE21ICW1	1.000	INE22A	5/22/2020	12:50	RS
LCSWNE21ICW1	1.000	INE22A	5/22/2020	12:54	RS
PBT1629A	1.000	INE22A	5/22/2020	12:58	RS
SN3848-001	1.000	INE22A	5/22/2020	13:03	RS
SN3848-002	1.000	INE22A	5/22/2020	13:08	RS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SN3857-001	1.000	INE22A	5/22/2020	13:13	RS
SN3857-002	1.000	INE22A	5/22/2020	13:17	RS
SN3857-003	1.000	INE22A	5/22/2020	13:22	RS
CCV	1.000	INE22A	5/22/2020	13:26	RS
CCB	1.000	INE22A	5/22/2020	13:30	RS
SN3857-004	1.000	INE22A	5/22/2020	13:34	RS
SN3857-005	1.000	INE22A	5/22/2020	13:39	RS
SN3857-006	1.000	INE22A	5/22/2020	13:43	RS
SN3857-007	1.000	INE22A	5/22/2020	13:47	RS
SN3857-007L	5.000	INE22A	5/22/2020	13:51	RS
SN3857-007A	1.000	INE22A	5/22/2020	13:56	RS
SN3857-007S	1.000	INE22A	5/22/2020	14:00	RS
SN3857-007P	1.000	INE22A	5/22/2020	14:04	RS
SN3857-008	1.000	INE22A	5/22/2020	14:08	RS
SN3857-008L	5.000	INE22A	5/22/2020	14:13	RS
CCV	1.000	INE22A	5/22/2020	14:17	RS
CCB	1.000	INE22A	5/22/2020	14:21	RS
SN3857-008A	1.000	INE22A	5/22/2020	14:26	RS
SN3857-008S	1.000	INE22A	5/22/2020	14:30	RS
SN3857-008P	1.000	INE22A	5/22/2020	14:34	RS
SN3857-009	1.000	INE22A	5/22/2020	14:38	RS
SN3857-010	1.000	INE22A	5/22/2020	14:42	RS
SN3878-001	1.000	INE22A	5/22/2020	14:47	RS
SN3878-002	1.000	INE22A	5/22/2020	14:51	RS
SN3878-003	1.000	INE22A	5/22/2020	14:55	RS
SN3878-004	1.000	INE22A	5/22/2020	15:00	RS
SN3878-005	1.000	INE22A	5/22/2020	15:05	RS
CCV	1.000	INE22A	5/22/2020	15:11	RS
CCB	1.000	INE22A	5/22/2020	15:15	RS
PBWNE21ICW2	1.000	INE22A	5/22/2020	15:19	RS
LCSWNE21ICW2	1.000	INE22A	5/22/2020	15:24	RS
SN3772-001	1.000	INE22A	5/22/2020	15:28	RS
SN3779-018	1.000	INE22A	5/22/2020	15:34	RS
SN3779-018L	5.000	INE22A	5/22/2020	15:39	RS
SN3779-018A	1.000	INE22A	5/22/2020	15:43	RS
SN3779-018S	1.000	INE22A	5/22/2020	15:47	RS
SN3779-018P	1.000	INE22A	5/22/2020	15:51	RS
SN3779-019	1.000	INE22A	5/22/2020	15:56	RS
SN3779-020	1.000	INE22A	5/22/2020	16:00	RS
CCV	1.000	INE22A	5/22/2020	16:04	RS
CCB	1.000	INE22A	5/22/2020	16:08	RS
SN3779-021	1.000	INE22A	5/22/2020	16:13	RS
SN3779-022	1.000	INE22A	5/22/2020	16:17	RS
SN3779-023	1.000	INE22A	5/22/2020	16:22	RS
PBWNE21ICW3	1.000	INE22A	5/22/2020	16:26	RS
LCSWNE21ICW3	1.000	INE22A	5/22/2020	16:30	RS
SN3855-001	1.000	INE22A	5/22/2020	16:35	RS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SN3855-002	1.000	INE22A	5/22/2020	16:39	RS
SN3855-003	1.000	INE22A	5/22/2020	16:43	RS
SN3855-004	1.000	INE22A	5/22/2020	16:48	RS
SN3855-005	1.000	INE22A	5/22/2020	16:53	RS
CCV	1.000	INE22A	5/22/2020	17:14	RS
CCB	1.000	INE22A	5/22/2020	17:18	RS
Reject SN3855-006	1.000	INE22A	5/22/2020	17:22	RS
SN3855-007	1.000	INE22A	5/22/2020	17:27	RS
IRinse-50	1.000	INE22A	5/22/2020	18:01	RS

Intensity Report

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Published: 5/20/2 2 772:1A:1 PM

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Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 7316

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 776:51:3 t M — Smy 4le7Tp4e: SomdmNl

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct	- .	356	9 cs/S	7 . 0	7C.550	-11.65
t l16_3CR	- .	366C	9 cs/S	7 . 3233	7_ .05	-2A.6_
t s3A63Ct	- .	3	9 cs/S	7 . 3	76._21	-3.C1A
BC2 A6Ct	7 .	136	9 cs/S	7 . 16	732.2A	7C.5A5
BmC55CCR	7 .	C30C	9 cs/S	7 . 2_6	7_.C52	7_ .13
Be131 CR	- .	106	9 cs/S	7 . 52A	7316.1	-5.51A
9 m135ACR	- .	35AA	9 cs/S	7 . C3C	72_. C	-22.AA
9 d22_5Ct	- .	3 _	9 cs/S	7 . 2C	722.C6	-3.525
9 r 22A_Ct	7 .	053	9 cs/S	7 . 33C	735.2	73 .0A
9 N2_00Ct	' .	2	9 cs/S	7 . 21	738 _1	7 .C1A6
9 u1201Ct	- .	1 A	9 cs/S	7 . A	72.0C5	-_5.05
Fe2566CR	.	1	9 cs/S	7 . C	73_2.3	- . 1600
KC0__CCR	- .	6_CC	9 cs/S	7 . 352	73.50A	-316.1
Li_0 0CR	7 .	25C0	9 cs/S	7 . 6A0	71A.05	71_.63
Mg2 25Ct	- .	_ 3	9 cs/S	7 . C_	70._C2	-A_13
Mn250_CR	7 .	365	9 cs/S	7 . 312	7_0.20	72.A 5
Mr 2 2 Ct	7 .	13	9 cs/S	7 . 3_	752.6A	7 .CC06
, m5A65CR	- .	1005	9 cs/S	7 . 315A	715.60	-5C.11
, i213_Ct	7 .	13	9 cs/S	7 . 33	71_.15	7 .C5 3
Pb22 1Ct	7 .	A1	9 cs/S	7 . C1	753.36	73.36_
Sb2 _ACt	7 .	_1	9 cs/S	7 . C5	703.52	7 .6 26
Se36_ Ct	7 .	13	9 cs/S	7 . C_	73C.AA	7C.C56
Si253_CR	7 .	21 _	9 cs/S	7 . 311	75.0A3	711.12
Sn3A66Ct	7 .	313	9 cs/S	7 . 30	732.0	73.AAA
SNC235CR	- .	3_A_	9 cs/S	7 . 135	73A.0	-2C.16
Ti11C6Ct	- .	3A	9 cs/S	7 . 2_	73C.55	-1A.C1
Tl36 ACt	- .	52	9 cs/S	7 . 21	7C5.1	- .0CC_
VC262CCt	- .	21	9 cs/S	7 . C	7305.1	-C.061
Zn2 _2Ct	7 .	3A	9 cs/S	7 . C2	721 .	7 .256_
YC1_ CR		73C8CC	9 cs/S	72_6._6	73.A_0_	73C8CC
YC22C1Ct		73C81__	9 cs/S	7335.63	7 .A _A2	73C81__
YC1_ Ct		72318A	9 cs/S	738AA5.5	7 .AA362	72318A

Std 1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 7316

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 776:50:20t M — Smy 4le7Tp4e: SomdmNl

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 .33_0	9 cs/S	7 . 3200	73. 65	72C855
t l16_3CR		73.C32	9 cs/S	7 . 3C62	73. 5_	72 851
t s3A63Ct		7 . C016	9 cs/S	7 . 312	7 .20A6	7_0 .3
BC2 A6Ct		7 .32A1	9 cs/S	7 . 321	7 . 655_	738A35
BmC55CCR		71. 53	9 cs/S	7 . 1166	73.33C	7CC815
Be131 CR		7C.2C2	9 cs/S	7 . 1_C_	7 .A565	7_38_0
9 m135ACR		73.A5C	9 cs/S	7 . 3C1C	7 .001_	72_865
9 d22_5Ct		73.03_	9 cs/S	7 . 1 5	7 . 3005	72C82_
9 r 22A_Ct		7 .CC 6	9 cs/S	7 . _ C	7 .310	7_8215
9 N2_00Ct		7 . AAAC	9 cs/S	7 . 3 03	73.2 _	73A8_6
9 u1201Ct		7 . _165	9 cs/S	7 . 016	73.35_	7318C5
Fe2566CR		72.11_	9 cs/S	7 . 1 3	73.2A6	71186 5
KC0__CCR		7 .610_	9 cs/S	7 . 1013	7 .1606	7318_1
Li_0 0CR		7 .51A6	9 cs/S	7 . 2A__	7 .5136	708A1C

Std 1

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 776:50:20t M	Smy 4le7Tp4e:	SomdmNd

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Mg2 25Ct		7 .A6C3	9 cs/S	7 . 011	7 . A2 2	7328_C
Mn250_CR		7 .5052	9 cs/S	7 . 55C3	7 .6_1C	7A81_2
Mr 2 2 Ct		7 .1CA6	9 cs/S	7 . C10_	73.25C	7C861C
, m5A65CR		72._01	9 cs/S	7 . 3C01	7 .553	71A8A0
, i213_Ct		7 .2316	9 cs/S	7 . 1C5	7 .3_31	718 2C
Pb22 1Ct		7 .3210	9 cs/S	7 . CA	7 . 1A5	7380C6
Sb2 _ACt		7 . 5501	9 cs/S	7 . 0A2	73.C 1	70AA.3
Se36_ Ct		7 . 1C12	9 cs/S	7 . CA	7 .3C32	7CA5.2
Si253_CR		7 .02C2	9 cs/S	7 . 11C1	7 .C_35	73 851
Sn3A66Ct		7 . 02_3	9 cs/S	7 . 06	7 .3 A5	738 20
SNC235CR		71.A5	9 cs/S	7 . 2_02	7 ._616	755860
Ti11C6Ct		7 .3066	9 cs/S	7 . 3602	73. 6_	7108A5
Tl36 ACt		7 . 0_ 3	9 cs/S	7 . 21	7 . 26_	738 05
VC262CCt		7 . 0A16	9 cs/S	7 . A _	73. 26	73_8C6
Zn2 _2Ct		7 .C032	9 cs/S	7 . 23A	7 . C_20	7_8_C
YC1_ CR		73C851A	9 cs/S	7336.66	7 .A2515	73C851A
YC22C1Ct		73C83C3	9 cs/S	72 ._22	7 .3C5A1	73C83C3
YC1_ Ct		723 8C2	9 cs/S	738A15._	7 .A021A	723 8C2

ICV

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 773 : 3:1Ct M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7166.2	ug/L	73.505	7 .16C5	76862
t l16_3CR		73 832	ug/L	735.31	7 .3C65	7A82 6
t s3A63Ct		71A .3	ug/L	7 .2603	7 . 0A3_	7256.A
BC2 A6Ct		716C.A	ug/L	7 .12 1	7 . A331	701_._
BmC55CCR		7C 3.1	ug/L	73.C 6	7 .1533	7308_5
Be131 CR		7C A.2	ug/L	72.3C1	7 .525	72C86
9 m135ACR		73 83A	ug/L	726.1_	7 .2AA1	73 8A5
9 d22_5Ct		7161.	ug/L	7 . 066C	7 . 2 1C	7680_2
9 r 22A_Ct		716A.6	ug/L	7 . 5055	7 . 3CC1	728552
9 N2_00Ct		7165.1	ug/L	73._C5	7 .C3_3	708551
9 u1201Ct		7162.3	ug/L	7 .5 5	7 .32AA	758152
Fe2566CR		73 822	ug/L	710.00	7 .1_65	73180C
KC0__CCR		7318_2	ug/L	736._5	7 .3CC1	7082A1
Li_0 0CR		7C 5.	ug/L	71.C C	7 .AC 0	7183_3
Mg2 25Ct		73 8 6	ug/L	73C.C3	7 .3C2A	758223
Mn250_CR		7C 3.0	ug/L	7 .1311	7 . 0A	718125
Mr 2 2 Ct		7C C.1	ug/L	73.212	7 .1 CA	728 C2
, m5A65CR		73 830	ug/L	7C.C02	7 . C160	7358_3
, i213_Ct		7165.6	ug/L	73. _1	7 .2_A_	73822_
Pb22 1Ct		716A.3	ug/L	7 .A025	7 .2363	7031.A
Sb2 _ACt		7166.	ug/L	73. CA	7 .2_20	7122.C
Se36_ Ct		7163.6	ug/L	73.35A	7 .265C	7360.C
Si253_CR		73 821	ug/L	73 C._	73. 22	7C82
Sn3A66Ct		7160.C	ug/L	7 .2 61	7 . 52__	7C3A.6
SNC235CR		7C C.2	ug/L	7 . _16A	7 . 35A1	722810
Ti11C6Ct		716C.A	ug/L	73.353	7 .263C	735825
Tl36 ACt		7C .2	ug/L	7 .5A03	7 .3C_0	7C16.6
VC262CCt		716 .A	ug/L	72.325	7 .5C10	7_85A1
Zn2 _2Ct		7162.0	ug/L	7 .1CCC	7 . A003	728_06
YC1_ CR		73C81A1	9 cs/S	73A_.AC	73.2663	73C81A1
YC22C1Ct		73C800A	9 cs/S	7 .26 3	7 . 2 1	73C800A
YC1_ Ct		72358 5	9 cs/S	7__1.A	7 .1 A_A	72358 5

ICB

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 773 : 5:C2t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .1_5	ug/L	7 .21A1	7_5.1	-C1.02
t l16_3CR		75._A1	ug/L	71. __	751.65	-21.A_
t s3A63Ct		7 .A 65	ug/L	7 .1C26	7C2.1_	- .AA15
BC2 A6Ct		7 ._0 0	ug/L	7 .335A	730.2_	75.63A
BmC55CCR		7 . 2C 0	ug/L	7 .3155	75_1.	7_ .A2
Be131 CR		7 . 0_05	ug/L	7 . 536A	7_0.01	- .00A3
9 m135ACR		-2.A_3	ug/L	73. CC	71_.5	-25.06
9 d22_5Ct		- . 35_3	ug/L	7 . 3161	7A6.21	-3.6 1
9 r 22A_Ct		- . A16_	ug/L	7 . 2_A6	712. 2	73 .2_
9 N2_00Ct		- . CC2_	ug/L	7 .C22A	7655.3	- .1A__
9 u1201Ct		7 .11C_	ug/L	7 .302_	753._	-_3.A0
Fe2566CR		7C.A30	ug/L	7 .10C0	70.006	7_.C _
KC0__CCR		-16.55	ug/L	72C.A2	7_2.0_	-356.5
Li_0 0CR		7 ._6 A	ug/L	73.2A0	73A_.1	7C3.06
Mg2 25Ct		-2.315	ug/L	73.26C	7_ ._2	-6._A6
Mn250_CR		- .0125	ug/L	7 .C101	756.0	-1.2C
Mr 2 2 Ct		71.C_0	ug/L	7 .0355	72 ._C	730.A
, m5A65CR		-3C.13	ug/L	730.06	732C.1	-0_. 2
, i213_Ct		7 .351A	ug/L	7 . C03	71 ._2	7 .663C
Pb22 1Ct		-3.212	ug/L	7 .250_	72 .63	-3. 3
Sb2 _ACt		71.55A	ug/L	7 .3C C	71.6C5	71.055
Se36_ Ct		72.53_	ug/L	7 .05C_	726.66	75._00
Si253_CR		75.A32	ug/L	725.A	7CC1.6	715.16
Sn3A66Ct		7 .3636	ug/L	7 .35 _	70A.53	72. A0
SNC235CR		7 .2315	ug/L	7 . _11	726._5	-32.1_
Ti11C6Ct		7 .510A	ug/L	7 .20 _	75 .1	-30.AA
Tl36 ACt		- .5320	ug/L	7 .0_26	73CA.A	-3.1 2
VC262CCt		- . 1256	ug/L	7 .1111	738 21	-5.056
Zn2 _2Ct		- . CC A	ug/L	7 . 003_	7305.	- . 15_3
YC1_ CR		73C813A	9 cs/S	71_.53	7 .255	73C813A
YC22C1Ct		73C815	9 cs/S	710.50	7 .2_3A	73C815
YC1_ Ct		723_825	9 cs/S	7CC. A	7 . 2 1AC	723_825

PQL

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 773 :3 : 3t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73 .21	ug/L	7 . A22A	7 . A C3	7225.5
t l16_3CR		7132.3	ug/L	732.3	71.A00	722_.C
t s3A63Ct		7A.100	ug/L	7 .31_	73._21	7C.26
BC2 A6Ct		75 .65	ug/L	7 .5326	73. 0	76_.A6
BmC55CCR		75.3A_	ug/L	7 . _56	73.203	72AA.6
Be131 CR		75.2_1	ug/L	7 . 6 56	73.023	7130.1
9 m135ACR		76A.0A	ug/L	70._13	70.02_	7A1.3
9 d22_5Ct		75.22	ug/L	7 . C3_0	7 .06A1	7320.1
9 r 22A_Ct		73 .C1	ug/L	7 .2212	72.3C3	70_.A0
9 N2_00Ct		73 .16	ug/L	7 . A551	7 .A21C	72 .3
9 u1201Ct		725.02	ug/L	7 .2355	7 .A106	7263.3
Fe2566CR		73 A.A	ug/L	70.3 2	7_.525	73C0.
KC0__CCR		766 ._	ug/L	7C. 5	7 .C C1	7C 1.C
Li_0 0CR		73 3.6	ug/L	73.6C3	73.6 5	7A20.1
Mg2 25Ct		733 .C	ug/L	72.15_	72.31C	7CA._6
Mn250_CR		7C.C 6	ug/L	7 .16A0	76. C2	716.CA
Mr 2 2 Ct		733.C	ug/L	7 .32 3	73. 51	750._0
, m5A65CR		738 5	ug/L	7C.A52	7 .CA2_	7385 1
, i213_Ct		73 .50	ug/L	7 .32__	73.36A	711.

PQL

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 73 :3 : 3t M — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		7C.1 2	ug/L	7 .112_	70.011	7AA 0
Sb2 _ACt	F	733.3C	ug/L	7 .606A	7A.066	76. 15
Se36_ Ct		76.3A2	ug/L	7 .3215	73.1C5	7A.655
Si253_CR		7360.3	ug/L	73A.3A	76.22C	733C.3
Sn3A66Ct		73 1.3	ug/L	7 .3305	7 .33C	73 6.C
SNC235CR		73 .CC	ug/L	7 . _3C6	7 . 5A61	7550.3
Ti11C6Ct		73C.66	ug/L	7 .23_C	73.CCC	75CC.6
Tl36 ACt		735.00	ug/L	7 .35_C	7 .663A	73_.5
VC262CCt		76.02A	ug/L	7 . 0316	7 .011A	73_ .
Zn2 _2Ct		72 ._6	ug/L	7 . _53C	7 .13C6	73C ._
YC1_ CR		73C8C_5	9 cs/S	756.C52	7 .C33 3	73C8C_5
YC22C1Ct		73C81AA	9 cs/S	7_0. 36	7 .C_5A	73C81AA
YC1_ Ct		723_811	9 cs/S	7_5_.6C	7 .1 1_0	723_811

ICSA

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 73 :3C:30t M — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 .0 A5	ug/L	7 .1AA3	75C.00	-38_30
t l16_3CR		75 18	ug/L	7338A5	72.15_	716 81
t s3A63Ct		7 . C1A3	ug/L	7 .1156	70__.0	-A.632
BC2 A6Ct		- .52_	ug/L	7 . 02 0	731.0	71.1 1
BmC55CCR		7 .1_60	ug/L	7 .3310	71 .0C	702.A5
Be131 CR		- .3_65	ug/L	7 . 0C6	7CC.36	-35.2C
9 m135ACR		7C0381	ug/L	728C62	7 .52A0	7CA 80
9 d22_5Ct		7 .5C A	ug/L	7 . 6C55	730.CA	72 _.A
9 r 22A_Ct		7 .3_36	ug/L	7 .1152	72 0.	73 .2
9 N2_00Ct		73.525	ug/L	7 .3_53	73 .A1	72C. 0
9 u1201Ct		-2.22_	ug/L	7 . _022	7 .1 2	-03.A1
Fe2566CR		736C83	ug/L	73_5.3	7 . A5 6	72C683
KC0__CCR		7 .A01C	ug/L	7A.A 3	738 A	-312.
Li_0 0CR		7C. _1	ug/L	7 .3 _3	72._32	7_C.6C
Mg2 25Ct		7C1383	ug/L	738A3_	7 .C233	72 86
Mn250_CR		-3. 05	ug/L	7 .C3_2	71A03	71._0_
Mr 2 2 Ct		- .10A_	ug/L	7 .213A	7_3.21	-3.12C
, m5A65CR		732.60	ug/L	73A.30	73C .3	-12.A5
, i213_Ct		-2._56	ug/L	7 .311A	75. 13	-21.63
Pb22 1Ct		7 .10C3	ug/L	72.AA1	700 ._	-A5.36
Sb2 _ACt		73.A10	ug/L	73.5_1	7A5. A	76.501
Se36_ Ct		71.6C1	ug/L	73.36	71 .30	76._65
Si253_CR		-5C.01	ug/L	72 .2C	71_.6A	735.2C
Sn3A66Ct		72.13C	ug/L	7 . C135	73.A_5	71.62
SNC235CR	W	75.360	ug/L	7 .3_32	71.3 2	7253.6
Ti11C6Ct		72.262	ug/L	7 . A3C	71.552	7CC.21
Tl36 ACt		- . _1C1	ug/L	7 .50_2	76 AC	- .36__
VC262CCt		-3.1_6	ug/L	7 .3560	733._0	73C.A2
Zn2 _2Ct		7 .53 C	ug/L	7 . _1 3	732.1C	71.1A5
YC1_ CR		73180C	9 cs/S	705.A 0	7 .5530	73180C
YC22C1Ct		73183 C	9 cs/S	751.3_6	7 .C 50_	73183 C
YC1_ Ct		736 822	9 cs/S	70A6.21	7 .C3C63	736 822

ICSAB

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 73 :36:12t M — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

ICSAB

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 773 :36:12t M — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7232.1	ug/L	73. 10	7 .CAAC	71831A
t l16_3CR		7C6_8A	ug/L	7C8 32	7 .A 0_	71638C
t s3A63Ct		76_.AA	ug/L	7 .336	7 .322A	753._6
BC2 A6Ct		70CC.C	ug/L	70.6 0	73.__0	7A 3.5
BmC55CCR		7C6A.	ug/L	7C._61	7 .6C22	723821
Be131 CR		75 1.1	ug/L	71.536	7 ._662	72680A
9 m135ACR		7C_68A	ug/L	718AA6	7 .A20A	7CA_8C
9 d22_5Ct		76 0.3	ug/L	73A.05	72. __	72 8_
9 r 22A_Ct		7C51.0	ug/L	7A.6_5	73.60_	728_12
9 N2_00Ct		7CA2.	ug/L	73.501	7 .12_1	7A8316
9 u1201Ct		75 5.1	ug/L	72.010	7 .5C3_	7_832A
Fe2566CR		73628	ug/L	700C.0	7 .C 15	725 82
KC0__CCR		72 8_2	ug/L	7233.2	73. 2C	73 80_
Li_0 0CR		751 .2	ug/L	71.353	7 .56C1	7C8 2
Mg2 25Ct		7C1 85	ug/L	7A8015	72. 26	72 383
Mn250_CR		7C02.2	ug/L	73.621	7 .C 01	718A 2
Mr 2 2 Ct		7C0_.	ug/L	70. A6	73.CA6	7283A3
, m5A65CR		72 855	ug/L	700.A0	7 .106	71 8_C
, i213_Ct		7AA_.6	ug/L	73_.__	73.A06	728C_A
Pb22 1Ct		7C3.55	ug/L	73. 6_	72._1A	-30.00
Sb2 _ACt		7_ 3.6	ug/L	73C.55	72.C30	7CCA.3
Se36_ Ct		752.51	ug/L	7C.A0C	76.206	713.C1
Si253_CR		738613	ug/L	73_.15	7 .AC_A	7A 2.
Sn3A66Ct		7C50.A	ug/L	70.515	73._C_	7C10.1
SNC235CR		75 5.3	ug/L	71._31	7 .035C	720833
Ti11C6Ct		7C6C.0	ug/L	73.55C	7 .13C2	73_86
Tl36 ACt		7A_.26	ug/L	72.25A	72._3_	7A_.A6
VC262CCt		7C62.3	ug/L	72.5C	7 .53_3	70810
Zn2 _2Ct		7A66.6	ug/L	736.05	72.365	75850
YC1_ CR		7318606	9 os/S	75A.026	7 .C23 1	7318606
YC22C1Ct		731881	9 os/S	7235.55	73._C3_	731881
YC1_ Ct		736 83	9 os/S	75CC.51	7 .2A_CC	736 83

CCV

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 773 :2C.C0t M — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		75 A6	ug/L	7 .A_35	7 .3_61	73285C
t l16_3CR		732800	ug/L	750. _	7 .CC_A	73 81C
t s3A63Ct		7C6C._	ug/L	7 .CCAA	7 . 6 01	7115._
BC2 A6Ct		7C60.0	ug/L	71._52	7 .0110	7636.1
BmC55CCR		75 6.C	ug/L	73.120	7 .2_ 5	72281C
Be131 CR		753_.C	ug/L	71.2_5	7 ._12C	71380C
9 m135ACR		73280C	ug/L	73.206	7 . 3 C	731855
9 d22_5Ct		7C66._	ug/L	72.0 1	7 .5C33	73281
9 r 22A_Ct		75 C.1	ug/L	72.131	7 .C5AA	71836_
9 N2_00Ct		75 6.1	ug/L	7 ._A_A	7 .31C6	768503
9 u1201Ct		75 6._	ug/L	73.3 5	7 .23_6	7_8A_
Fe2566CR		732803	ug/L	7_5.5C	7 .535A	7308 C
KC0__CCR		7328_6	ug/L	7CC.6A	7 .15CC	7_80__
Li_0 0CR		7532.0	ug/L	71.53	7 ._AC_	7186AC
Mg2 25Ct		73280C	ug/L	753.6C	7 .C30C	7_81A1
Mn250_CR		7533.5	ug/L	7 .C260	7 . AC	7C8225
Mr 2 2 Ct		7533.1	ug/L	71.C3	7 .___A	7285_
, m5A65CR		73280A	ug/L	71C.23	7 .2_0A	736856
, i213_Ct		75 1._	ug/L	72.60	7 .5A60	7385C_

CCV

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773 :2C:C0t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		75 C.5	ug/L	72.160	7 .C052	7A6_.3
Sb2 _ACt		75 6.A	ug/L	72.A2C	7 .55C	7C A.1
Se36_ Ct		7063.2	ug/L	71.A1	7 .006A	72CC.3
Si253_CR		731835	ug/L	76C.26	7 .03_6	758106
Sn3A66Ct		7060.	ug/L	72._00	7 .51A_	753A.0
SNC235CR		7532.2	ug/L	72.353	7 .C366	72A81
Ti11C6Ct		75 A.6	ug/L	7 .2 51	7 . C 1C	73681C
Tl36 ACt		75 0.5	ug/L	73.652	7 .1AC_	7551.2
VC262CCt		75 6._	ug/L	72.C5C	7 .CA35	7A8CC_
Zn2 _2Ct		7060.1	ug/L	72.00	7 .5503	7181_1
YC1_ CR		73C815_	9cs/S	75A.1C6	7 .C _CC	73C815_
YC22C1Ct		73C815	9cs/S	756.56C	7 .C3526	73C815
YC1_ Ct		7233852	9cs/S	7C56.36	7 .230 6	7233852

CCB

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773 :2A:55t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .2C55	ug/L	7 .CA1	736_.0	-C .30
t l16_3CR		733.30	ug/L	733. A	766.35	-36.1C
t s3A63Ct		7 .A5C0	ug/L	7 . 2A26	71.13	- .AC00
BC2 A6Ct		7 .0A 3	ug/L	7 .C 1_	753.0C	75.660
BmC55CCR		7 . 6126	ug/L	7 .523C	755A.6	7_1.2
Be131 CR		- . 23 A	ug/L	7 . 36 _	76 .16	-_._5_
9m135ACR		-C.2C2	ug/L	73.330	72_.12	-20. 1
9d22_5Ct		- . 362A	ug/L	7 . C_06	72C2.0	-3.605
9r22A_Ct		- . _52C	ug/L	7 . 35 C	721 ._	73 ._C
9N2_00Ct		7 .26__	ug/L	7 . 1 32	73 .35	7_.3 C
9u1201Ct		7 .C 25	ug/L	7 . 0_ 3	73.AAA	-_ .1
Fe2566CR		71.33_	ug/L	73.1C0	7C1.22	7C. A0
KC0__CCR		-13._C	ug/L	73 .6A	71C._6	-35C.
Li_0 0CR		-2. 3	ug/L	72.00C	731A.3	72 .6C
Mg2 25Ct		- . 3 30	ug/L	7 .A 5_	708625	-A.526
Mn250_CR		- .3 A5	ug/L	7 .5C2	7066.5	73.A0
Mr2 2 Ct		73.622	ug/L	7 .CA 2	72C.66	76.60
, m5A65CR		-0.11_	ug/L	73C. 5	7363.5	-_C.A1
, i213_Ct		7 . _11C	ug/L	7 .3202	72 .6	7 ._050
Pb22 1Ct		7 .13 6	ug/L	7 .6C	71 2.C	73.01
Sb2 _ACt		73.2C	ug/L	73.126	73 0.2	73.A0A
Se36_ Ct		73. 6_	ug/L	73.12C	732 .A	7C.610
Si253_CR		73A.2_	ug/L	723.10	7330.3	7C . C
Sn3A66Ct		7 .35_C	ug/L	7 .211_	73C6.C	72. 13
SNC235CR		- . 1A3C	ug/L	7 . 0A5	72 5.A	-2_.
Ti11C6Ct		7 .3A A	ug/L	7 .3 2_	75_.00	-13.C0
Tl36 ACt		7 ._ 16	ug/L	7 .32A0	723.12	- . AC3C
VC262CCt		- .23_3	ug/L	7 .3 A6	75 .16	-A_02
Zn2 _2Ct		7 . C_66	ug/L	7 . 3611	7C3.35	7 .502C
YC1_ CR		73C836_	9cs/S	7333.A_	7 .0A06A	73C836_
YC22C1Ct		73C8235	9cs/S	712.5C5	7 .22A65	73C8235
YC1_ Ct		723C8 5	9cs/S	7283A0.1	73. 236	723C8 5

LRS1

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773 :11:3_t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LRS1

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 7/3 :11:3_t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct	F	7280A	ug/L	72.53C	7 .33 C	75C850
t l16_3CR		72AC._	ug/L	720._1	76.0 A	7102.C
t s3A63Ct	F	7228A	ug/L	711.50	7 .3C01	73C85A
BC2 A6Ct	F	722863	ug/L	735. 0	7 . _500	71A8A3
BmC55CCR	F	72281C	ug/L	71 5._	73.1_A	76__8_
Be131 CR		72386A	ug/L	7C26.1	73.651	73812C8
9m135ACR		72_1.6	ug/L	71.61_	73.C62	72_6.0
9d22_5Ct		7238_C	ug/L	7265.0	73.1__	7C6A8C
9r22A_Ct	F	72280	ug/L	723.0_	7 . 65A_	731C81
9N2_00Ct		7228 C	ug/L	7353.6	7 ._A62	7C 383
9u1201Ct	F	72281	ug/L	730 ._	7 .0_52	726185
Fe2566CR		7A63.0	ug/L	732.15	73.1A5	7383A1
KC0__CCR		731.C6	ug/L	731.05	73 3.6	-326.0
Li_0 0CR	F	722852	ug/L	73A6.C	7 .AC 6	730385
Mg2 25Ct		-10 .C	ug/L	7_C56	73.0CC	7381A0
Mn250_CR	F	722820	ug/L	7210.6	73. _A	73A386
Mr2 2 Ct	F	758A3_	ug/L	76.__3	7 .3__3	72082_
, m5A65CR		755.61	ug/L	71.1 0	75.632	713.C_
, i213_Ct	F	722800	ug/L	72A.AA	7 .32_6	7_583_
Pb22 1Ct	F	72286_	ug/L	73_.6A	7 . 0162	71A820
Sb2 _ACt	F	721813	ug/L	732. 3	7 . 5352	7308C1
Se36_ Ct	F	72280	ug/L	73 .56	7 . C__5	73 810
Si253_CR		7551.A	ug/L	73A .2	712.51	71_1.C
Sn3A66Ct	F	722851	ug/L	726.33	7 .3262	723865
SNC235CR	F	722830	ug/L	756A.3	72._6A	7382328
Ti11C6Ct	F	722836	ug/L	7_C.23	7 .2A6C	7A3A8
Tl36 ACt	F	72283	ug/L	733._2	7 . 525_	7228_
VC262CCt		7228 5	ug/L	76.166	7 . C2_1	715585
Zn2 _2Ct		7228	ug/L	71C.C0	7 .35_0	731681
YC1_ CR		73C836A	9cs/S	766.2 C	7 ._6A0	73C836A
YC22C1Ct		7318CC3	9cs/S	715.A55	7 .2__05	7318CC3
YC1_ Ct		72 C8A1	9cs/S	7521.35	7 .255C3	72 C8A1

LRS2

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 7/3 :C2:3_t M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 .0 20	ug/L	7 .3C53	72 ._5	-38A62
t l16_3CR		7C6086	ug/L	73A .2	7 . 1_36	71A 8_
t s3A63Ct		72.C0A	ug/L	73._A5	7_0.60	-6.136
BC2 A6Ct		721.13	ug/L	73.136	75.__3	7C3.5A
BmC55CCR		7 .0550	ug/L	7 .3 0	731.11	7A0._5
Be131 CR		- . 2035	ug/L	7 . 6_A5	715_.A	-0.23C
9m135ACR		7C0082	ug/L	718 _C	7 ._C2	7C068C
9d22_5Ct		7 .AC26	ug/L	7 . 53 C	7_. 5_	72C0.6
9r22A_Ct		7 .A5A3	ug/L	7 . 1_63	7 .C1 3	731.AC
9N2_00Ct		7 .525A	ug/L	7 . A2C6	735._6	7_.5_0
9u1201Ct		-2. 51	ug/L	7 .3013	7A.C11	-05.2C
Fe2566CR		721C81	ug/L	7162.	7 .3_01	726_82
KC0__CCR		71 280	ug/L	736.21	7 . _153	735583
Li_0 0CR		732.A5	ug/L	7C.C3A	71C.C	7320.0
Mg2 25Ct	F	7301 86	ug/L	7032.6	7 .C 66	7068 C
Mn250_CR		73_.22	ug/L	7 .1AC3	72.1_0	70 .C6
Mr2 2 Ct		75.02A	ug/L	72. 1C	715.52	725.6
, m5A65CR		72 80	ug/L	738 _0	7 .513A	726 86
, i213_Ct		-2.2A_	ug/L	7 .C60_	723.0_	-25._3

LRS2

Medhr d7, my e: Ft ST-2 3_Q, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7/3 :C2:3_t M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-2.506	ug/L	7 .C0C	730.15	-AC.C_
Sb2 _ACt		71.61C	ug/L	7 .1AAA	76.AA1	733.6A
Se36_ Ct		7C. 52	ug/L	72.CC	7_ .2	76.166
Si253_CR		7CA86	ug/L	73 2.3	7 .2 A6	73A80_
Sn3A66Ct		7C. 32	ug/L	7 .651	721.05	75.161
SNC235CR		71. C	ug/L	7 . 1313	7 .3 C2	7311.A
Ti11C6Ct		731.26	ug/L	7 . A2A	7 ._212	7C A.1
Tl36 ACt		- .65_A	ug/L	7 .16AC	7C3._C	-3.335
VC262CCt		- .26C0	ug/L	7 .13 5	73 5.1	710._
Zn2 _2Ct		72.11	ug/L	7 . 6C _	7C. 10	73C.2A
YC1_ CR		731851C	9 cs/S	7A.63C	7 . _5A__	731851C
YC22C1Ct		732800A	9 cs/S	7A .336	7 ._20 2	732800A
YC1_ Ct		73AC8_5	9 cs/S	73_ .56	7 . A_60	73AC8_5

CCV

Medhr d7, my e: Ft ST-2 3_Q, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7/3 :CA:2_t M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7533.	ug/L	73.015	7 .116_	732855
t l16_3CR		73286C	ug/L	733. 6	7 . A5_6	73 815
t s3A63Ct		75 1._	ug/L	7C.5	7 .A610	7110.A
BC2 A6Ct		753A.3	ug/L	7C.1 1	7 .A1 _	76C5.1
BmC55CCR		7533.3	ug/L	7 . _A C	7 . 3113	722832
Be131 CR		7521.C	ug/L	7 ._2 _	7 .33A_	7138C5
9 m135ACR		732865	ug/L	721.C0	7 .3A32	731856
9 d22_5Ct		75 0.C	ug/L	7C.00C	7 .6C 6	732815
9 r 22A_Ct		7532.6	ug/L	7C.3_C	7 .A336	718231
9 N2_00Ct		753_.5	ug/L	7 .2 6A	7 . C _3	768_05
9 u1201Ct		753A.0	ug/L	7 .2C06	7 . C022	7_86_2
Fe2566CR		7328A	ug/L	731. 3	7 .3 30	73_86C
KC0__CCR		732860	ug/L	735. 2	7 .335A	7_8A21
Li_0 0CR	W	7520.0	ug/L	73.232	7 .2260	7C8 C5
Mg2 25Ct		7328_A	ug/L	765.22	7 .05 A	7_8C12
Mn250_CR		753A.5	ug/L	7 . 6AA0	7 . 36 0	7C822_
Mr 2 2 Ct		7536.2	ug/L	75.C5_	73. 53	72850
, m5A65CR		7318 2	ug/L	711. 6	7 .25C3	73680
, i213_Ct		7533.5	ug/L	75.266	73. 1_	738552
Pb22 1Ct		7532.1	ug/L	75._A5	73.33	7A66.0
Sb2 _ACt		7536.A	ug/L	75.C__	73. 53	7C33.5
Se36_ Ct		7C6A.5	ug/L	75.316	73. 13	72CC.6
Si253_CR	F	73C83C	ug/L	7303.A	73.235	7580 C
Sn3A66Ct		75 C.6	ug/L	75.12_	73. 55	7523.3
SNC235CR		7536.6	ug/L	7 .C 3A	7 . 001	72A81C
Ti11C6Ct		7535.1	ug/L	7 .636C	7 .30AC	736852
Tl36 ACt		7535.0	ug/L	75.0C	73.331	7555.A
VC262CCt		7530.C	ug/L	7 .05C	7 .3C50	7A85C6
Zn2 _2Ct		75 C.A	ug/L	7C.521	7 .A656	718105
YC1_ CR		73C83__	9 cs/S	7C5.30_	7 .13A63	73C83__
YC22C1Ct		73C83AA	9 cs/S	7__.11_	7 .C_05_	73C83AA
YC1_ Ct		723 8A1	9 cs/S	7_0_.__	7 .12 65	723 8A1

CCB

Medhr d7, my e: Ft ST-2 3_Q, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7/3 :52:1Ct M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e:	Ft ST-2 3_Q, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 73 :52:1Ct M	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- . 6C05	ug/L	7 .3A	736 .	-1_.A6
t l16_3CR		7C.1_A	ug/L	72.560	756.CC	-2C.A
t s3A63Ct		7 .0_65	ug/L	7 .2_12	71C.2	- .63A5
BC2 A6Ct		76.5A2	ug/L	7 .1A01	7C. C3	722. 5
BmC55CCR		- . 3__3	ug/L	7 .21C	738C 6	75A_5
Be131 CR		- . 2 _A	ug/L	7 . 2333	73 2.3	-_._52
9 m135ACR		-3.C_	ug/L	70.3_0	706 .A	-2C.30
9 d22_5Ct		- . 35A_	ug/L	7 . 25 2	7350.0	-3.623
9 r 22A_Ct		- .36A2	ug/L	7 . 353A	70.__3	76._ _
9 N2_00Ct		7 .2_15	ug/L	7 .3_16	7_2.21	75.5C1
9 u1201Ct		7 . CC56	ug/L	7 .20AA	7_25.1	-__. 1
Fe2566CR		71.0 6	ug/L	7 .C50A	732.1C	7C.A6C
KC0__CCR		711.5	ug/L	7C3.A5	732C.6	-336.3
Li_0 0CR		72.__0	ug/L	7 .1A A	73C.2A	75_._3
Mg2 25Ct		-3.3CA	ug/L	73.550	7315._	-6.202
Mn250_CR		- .C A_	ug/L	7 . A__A	723.22	- .5_32
Mr 2 2 Ct		72.2_	ug/L	7 .1C_0	735.15	733.AC
, m5A65CR		-C. 3	ug/L	70.0 3	7362.5	-56.A5
, i213_Ct		7 .30_1	ug/L	7 . 520	726.6	73. C3
Pb22 1Ct		- .553_	ug/L	7 .C5C1	7A2.15	7 .2 61
Sb2 _ACt		73. 1A	ug/L	72. 3C	736C.3	73.051
Se36_ Ct		73.15	ug/L	73.556	7335.5	75.35
Si253_CR		73.133	ug/L	72 .51	7385__	711.12
Sn3A66Ct		- . 5261	ug/L	7 .23C_	7C 5.5	73.ACC
SNC235CR		- .32_5	ug/L	7 .3165	733 .1	-1 .65
Ti11C6Ct		7 .5C_5	ug/L	7 . _221	733.16	-30._3
Tl36 ACt		7 .2515	ug/L	7 .11 5	731 .C	- .C_63
VC262CCt		7 . _50C	ug/L	7 . A 01	7322.A	-1.6AC
Zn2 _2Ct		7 . 535_	ug/L	7 . 1A52	70C.03	7 ._3C_
YC1_ CR		73C821	9 cs/S	7AC.01A	7 .565C6	73C821
YC22C1Ct		73C8C55	9 cs/S	7325. 6	7 .A_515	73C8C55
YC1_ Ct		723_8__	9 cs/S	7A05.05	7 .C C2	723_8__

PBSNE18ICS2

Medhr d7, my e:	Ft ST-2 3_Q, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 73 :5_:55t M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .1A5_	ug/L	7 .5 26	731 .C	-CC.32
t l16_3CR		735.6C	ug/L	733. 5	7_6.1	-35._6
t s3A63Ct		73.10	ug/L	7 .12 0	721.C3	- .C6CA
BC2 A6Ct		76.0C3	ug/L	7 ._615	70.336	723.A5
BmC55CCR		7 .16 6	ug/L	7 .2 C	753.25	700. 1
Be131 CR		- . A21	ug/L	7 . _22	705.5A	-3 .C0
9 m135ACR		73_.A5	ug/L	75._C	711.CA	-C.A1C
9 d22_5Ct		- . C 21	ug/L	7 . 3223	71 .11	-2.C5_
9 r 22A_Ct		7 . 302_	ug/L	7 . 521_	71 1.1	73 .05
9 N2_00Ct		7 .C152	ug/L	7 .3A36	7C3.06	7A.000
9 u1201Ct		7 .A656	ug/L	7 . 6355	73 .22	-51.0C
Fe2566CR		722.51	ug/L	73.561	70. 02	71 .36
KC0__CCR		71 .3	ug/L	725.3	7A1.1A	-322.2
Li_0 0CR		73._55	ug/L	72.2A0	731A.3	706.16
Mg2 25Ct		73C.C0	ug/L	73.216	7A.5_2	-3.2 _
Mn250_CR		7 .3A6	ug/L	7 .__3A	715 .3	7C.1A5
Mr 2 2 Ct		73.1C_	ug/L	7 .3620	73C.12	70. AC
, m5A65CR		713.6C	ug/L	7C.C6	73C. _	-5.333
, i213_Ct		7 .0A3_	ug/L	7 .30_	722.52	72.A36

PBSNE18ICS2

Medhr d7, my e: Ft ST-2 3_Q UCt a

Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 773 :5_:55t M

Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		- .C_15	ug/L	7 . 1C_1	70.C03	7 .1_15
Sb2 _ACt		73.650	ug/L	7 .3 5_	75.16C	72.232
Se36_ Ct		7 .00_1	ug/L	7 ._ CC	700.A_	7C.0_0
Si253_CR		7A.A16	ug/L	731.5C	7351.2	71_.01
Sn3A66Ct		720.__	ug/L	7 .___3	72.C A	71 .25
SNC235CR		7 . 0615	ug/L	7 .3C20	7306.A	-36.A
Ti11C6Ct		7 ._2 0	ug/L	7 .3601	713.06	-3C._1
Tl36 ACt		- .60 2	ug/L	7 .2216	721. 0	-3.000
VC262CCt		- . 012	ug/L	7 .3302	73_ .3	-_.212
Zn2 _2Ct		72.6A2	ug/L	7 . C53C	73.53C	72 .30
YC1_ CR		73C81_1	9 cs/S	76C.3A1	7 ._550C	73C81_1
YC22C1Ct		73C83_	9 cs/S	7330.62	7 .A1205	73C83_
YC1_ Ct		723C861	9 cs/S	7C66. 0	7 .2122	723C861

LCSONE18ICS2

Medhr d7, my e: Ft ST-2 3_Q UCt a

Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 7733: 3:3Ct M

Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7CA_1	ug/L	7 . 32C	7 . 2553	7383_0
t l16_3CR		728 5C	ug/L	73_.AC	7 .A360	738_1_
t s3A63Ct		766.C1	ug/L	7 ._ 56	7 ._ 6C	7_5.C3
BC2 A6Ct		706C.2	ug/L	7 .556	7 .3313	7AA1.6
BmC55CCR		728 31	ug/L	735.C0	7 .0_AC	7A08A0
Be131 CR		753.55	ug/L	7 .2352	7 .C30C	718325
9 m135ACR		7285_1	ug/L	731. A	7 .53 1	7280 2
9 d22_5Ct		725 .C	ug/L	7 .2AC2	7 .3315	7_8 __
9 r 22A_Ct		7532.5	ug/L	7 .A5C1	7 .3__0	718366
9 N2_00Ct		72 3.0	ug/L	7 . 55C_	7 . 20C6	718A35
9 u1201Ct		7252.3	ug/L	7 .C_0_	7 .3A55	7181A3
Fe2566CR		738 2C	ug/L	7C.3_2	7 .C _5	7381_6
KC0__CCR		73 82C	ug/L	7C .6	7 .1665	758C35
Li_0 0CR		7523._	ug/L	7 .3_AA	7 . 121_	7C8 C3
Mg2 25Ct		7C865C	ug/L	75.A10	7 .330A	728536
Mn250_CR		75 A.5	ug/L	73._13	7 .12 A	7C836
Mr 2 2 Ct		73 5.A	ug/L	7 .C015	7 .CC00	7523.A
, m5A65CR		7080C3	ug/L	731.5A	7 .305C	7338A3
, i213_Ct		753 .1	ug/L	73. 1_	7 .2 26	73851_
Pb22 1Ct		73 ._	ug/L	7 .5233	7 .530A	7300.3
Sb2 _ACt		73 C.2	ug/L	73._ 0	73.5C1	706.2C
Se36_ Ct		766.13	ug/L	7 .2A11	7 .2A51	752.23
Si253_CR		760 .5	ug/L	70.A A	7 .A C5	7C2A.5
Sn3A66Ct		751C.0	ug/L	7 .1 _1	7 . 5026	75C6._
SNC235CR		7530.2	ug/L	73.5C5	7 .26A0	72A8C6
Ti11C6Ct		75 C.1	ug/L	7 .2 02	7 . C3 6	736820
Tl36 ACt		73 .A	ug/L	7 .35C_	7 .351C	73 A.0
VC262CCt		75 .	ug/L	73.6A	7 .16_	7A81A0
Zn2 _2Ct		7C61.A	ug/L	73.3_1	7 .215_	718263
YC1_ CR		73C813_	9 cs/S	73 1.2	7 .02 A6	73C813_
YC22C1Ct		73C8315	9 cs/S	71A.535	7 .202C6	73C8315
YC1_ Ct		72328A3	9 cs/S	7162. _	7 .3AC21	72328A3

LC2ONE18ICS2

Medhr d7, my e: Ft ST-2 3_Q UCt a

Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 7733: 5:25t M

Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LC2ONE18ICS2

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733: 5:25t M — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7CA.53	ug/L	7 .12C0	7 .__65	73855
t l16_3CR		7283 2	ug/L	70.232	7 .1C1	738__5
t s3A63Ct		760._	ug/L	7 .0 0	7 .02CC	7_C. 1
BC2 A6Ct		7062.6	ug/L	73.C1A	7 .263A	7A06.C
BmC55CCR		728 1_	ug/L	76.620	7 .CA05	7AA811
Be131 CR		751.31	ug/L	7 .32 _	7 .2203	7182 3
9 m135ACR		7285A2	ug/L	7 .6502	7 . 10 A	7280 C
9 d22_5Ct		725 .5	ug/L	73.113	7 .513C	7_8 51
9 r 22A_Ct		753C.2	ug/L	72.5 3	7 .CA_1	7182 2
9 N2_00Ct		72 5.	ug/L	7 .0C0	7 .1_CC	718AC0
9 u1201Ct		725_._	ug/L	7 .2262	7 . A626	718C30
Fe2566CR		738 1_	ug/L	71._ 3	7 .1C05	738100
KC0__CCR		73 810	ug/L	7A.C3	7 . A333	758C52
Li_0 0CR		7511.C	ug/L	73.21C	7 .2131	7C83 _
Mg2 25Ct		7C8626	ug/L	72C._1	7 .C66A	7285
Mn250_CR		753_.1	ug/L	7 ._1A2	7 .321_	7C822A
Mr 2 2 Ct		73 5._	ug/L	7 .3_1_	7 .355	7536.0
, m5A65CR		708AA3	ug/L	75.610	7 . 0511	733865
, i213_Ct		7532.	ug/L	73.661	7 .1A61	738510
Pb22 1Ct		73 .0	ug/L	7 .2_00	7 .2_5A	730_.A
Sb2 _ACt		73 2.5	ug/L	7 .C51	7 .CC30	700.00
Se36_ Ct		766.__	ug/L	73.2C2	73.2C_	752.2_
Si253_CR		738 1	ug/L	75.31	7 .C606	7CC6.6
Sn3A66Ct		7512.5	ug/L	71.2C	7 ._ A5	75C_.
SNC235CR		752_.3	ug/L	7 .5 61	7 . 6_A3	72A8A
Ti11C6Ct		75 _.A	ug/L	71.3 6	7 ._31C	736822
Tl36 ACt		73 .6	ug/L	73.5 2	73.CA6	73 A.5
VC262CCt		753 .2	ug/L	73.56C	7 .132C	7A8C61
Zn2 _2Ct		7C65.	ug/L	72.C23	7 .CA62	718263
YC1_ CR		73C822_	9 cs/S	70.25C6	7 . 5 66A	73C822_
YC22C1Ct		73C83 3	9 cs/S	7A1.01_	7 .561A2	73C83 3
YC1_ Ct		7233836	9 cs/S	7A56.3_	7 .C _A2	7233836

SN3681-001

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733: 6:10t M — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		733.C1	ug/L	7 . C653	7 .C111	-382_2
t l16_3CR	W	735680	ug/L	7C16._	7 .2051	7_5802
t s3A63Ct		732.35	ug/L	75.105	7CC.2C	-C.2 5
BC2 A6Ct		73C.6C	ug/L	7 .20CC	73.A10	73A. C
BmC55CCR		738_ 2	ug/L	71.52	7 .2360	7158_0
Be131 CR		73.525	ug/L	7 . 5321	71.156	-113.6
9 m135ACR		73180_	ug/L	706.__	7 .5063	708C25
9 d22_5Ct		7 .31	ug/L	7 .326	766.22	735A.1
9 r 22A_Ct		73 _.2	ug/L	72.5C2	72.16C	7CC5.6
9 N2_00Ct		715A.0	ug/L	73. 56	7 .2653	718163
9 u1201Ct		7C33.1	ug/L	7 .AC03	7 .2 _	728_C1
Fe2566CR	W	725582	ug/L	738831	7 .C1_1	730186
KC0__CCR	W	76_831	ug/L	7300.	7 .3AC2	72_8C1
Li_0 0CR		72 C.A	ug/L	71.2_	73.562	7A1A.5
Mg2 25Ct	W	7AA8A1	ug/L	7382_3	73.C2	722850
Mn250_CR	W	7C800_	ug/L	7_._51	7 .3CA_	73A80_
Mr 2 2 Ct		75.0	ug/L	7 .3_6	72.6_5	73C.25
, m5A65CR		718AC2	ug/L	73_.6A	7 .CC2	7286C_
, i213_Ct		73_6.2	ug/L	71.3_0	73.A03	72C5.1

SN3681-001

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 733: 6:10t M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		721.C_	ug/L	73.22	75.36A	732.61
Sb2 _ACt		75.C12	ug/L	7 . A01	7 .3_ 0	70.6C
Se36_ Ct		71.001	ug/L	73.105	71_.CC	7_.C2
Si253_CR		718 CC	ug/L	76.C_3	7 .13 A	70 5.
Sn3A66Ct		713.51	ug/L	73.55_	7C.611	73A.2
SNC235CR		751.C3	ug/L	7 .1_6A	7 ._625	738C0_
Ti11C6Ct	W	73A812	ug/L	715. 6	7 .3635	715 85
Tl36 ACt		-0.23_	ug/L	73.05C	72C.13	-3_.C3
VC262CCt		7__0.A	ug/L	7 .A526	7 .3200	758022
Zn2 _2Ct		7C56.6	ug/L	75.563	73.23_	7385C6
YC1_ CR		73C85A6	9 cs/S	70A.C5_	7 .5100A	73C85A6
YC22C1Ct		73C82A_	9 cs/S	7351. 3	73. 033	73C82A_
YC1_ Ct		72328_6	9 cs/S	72_.63A	7 . 32_5_	72328_6

SN3681-002

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 733:31:5 t M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7_.3 C	ug/L	7 .5 2	7A.36C	-38003
t l16_3CR	W	731C8C	ug/L	71 C.1	7 .22_5	73 A86
t s3A63Ct		70.C65	ug/L	7 .250	71.C2A	-5.015
BC2 A6Ct		70.5C0	ug/L	7 .3CC5	73.635	73A.23
BmC55CCR	W	738C3C	ug/L	71. 32	7 .231	7_386
Be131 CR		7 .6 20	ug/L	7 . 3 16	73.353	-5 0.C
9 m135ACR		73380C	ug/L	75.C10	7 . C_13	7328C6
9 d22_5Ct		- .32C5	ug/L	7 . 1A16	71 .AC	723_.5
9 r 22A_Ct		706.50	ug/L	7 .22C2	7 .2A3A	7__5.3
9 N2_00Ct		73C ._	ug/L	7 .115_	7 .21A0	728_2
9 u1201Ct		73_5._	ug/L	7 .0C_6	7 .C5 6	728 36
Fe2566CR	W	730_83	ug/L	73A.16	7 . 3 CC	721_83
KC0__CCR	W	7_38 2	ug/L	73 A.1	7 .300C	7118 5
Li_0 0CR		7355.A	ug/L	73.6 C	73.222	73821_
Mg2 25Ct	W	75580	ug/L	735_.1	7 .2A _	72A810
Mn250_CR	W	728C56	ug/L	73.0 2	7 . _62	72 820
Mr 2 2 Ct		72.0 0	ug/L	7 .3166	75.3_A	731.5
, m5A65CR		738813	ug/L	73.11_	7 .33A2	738_AC
, i213_Ct		7333.C	ug/L	7 .C0_1	7 .C205	7122.0
Pb22 1Ct		72C.3C	ug/L	7 .3AAC	7 .0A 5	72_.2A
Sb2 _ACt		72.5C	ug/L	7 ._ A6	721.6A	76.200
Se36_ Ct		73.26_	ug/L	7 .22A	730.56	7_._33
Si253_CR		7282C2	ug/L	715.6A	73._ 5	738 0
Sn3A66Ct		72A.0C	ug/L	7 .2AC2	7 .6A6	713.0
SNC235CR		72A.12	ug/L	7 .3161	7 .C636	7385C2
Ti11C6Ct	W	73180_	ug/L	7_A.2	7 .C65C	753683
Tl36 ACt		-1.C50	ug/L	7 .3236	71.52_	-23.2_
VC262CCt		7161.0	ug/L	7 .C_A0	7 .336	7_8_65
Zn2 _2Ct		7262.1	ug/L	7 ._055	7 .2133	738601
YC1_ CR		73C815_	9 cs/S	71.26__	7 . 226_C	73C815_
YC22C1Ct		73C8135	9 cs/S	73 .5 1	7 . 011_6	73C8135
YC1_ Ct		72 68_2	9 cs/S	75C5.53	7 .2_ 2C	72 68_2

PBSNE19ICS2

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 733:3A:5_t M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

PBSNE19ICS2

Meohr d7, my e:	Ft ST-2 3_O, UCt a	Meohr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 733:3A:5_t M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- . 1A_A	ug/L	7 .1650	738 21	-15.A1
t l16_3CR		73_.56	ug/L	722.00	7310.2	-35.3
t s3A63Ct		73.15	ug/L	7 .A__6	7_C.23	- .5315
BC2 A6Ct		71. _6	ug/L	7 .CC2_	73C.C2	73 . C
BmC55CCR		- . C_6C	ug/L	7 .353A	7121.C	750.A0
Be131 CR		- . 25A0	ug/L	7 . 1650	7352.6	-0.325
9 m135ACR		76.C 1	ug/L	7 .0 A	70.526	-32.0A
9 d22_5Ct		- . 3 _	ug/L	7 . 366A	736A.5	-3.030
9 r 22A_Ct		- . 206	ug/L	7 . 6C62	711866	73 .0C
9 N2_00Ct		7 .2 A3	ug/L	7 .53AA	72C6.1	7C.C5C
9 u1201Ct		73.1 3	ug/L	7 .1A11	726.C_	-CA.5A
Fe2566CR		71_. 1	ug/L	73.503	7C.156	7CA.20
KC0__CCR		70. 05	ug/L	73 . 0	73C2.1	-31C._
Li_0 0CR		72.0 1	ug/L	73. 66	7C ._0	750.1A
Mg2 25Ct		75.C53	ug/L	73.216	722.0C	-5.061
Mn250_CR		7 .3 2A	ug/L	7 . 25_1	72C.61	71._C0
Mr 2 2 Ct		7 .26CA	ug/L	7 . 2 21	7_A_1	73.63
, m5A65CR		736_.1	ug/L	7 .0C33	7 .1005	72C0._
, i213_Ct		7 .111C	ug/L	7 .3__	7C6.06	73.C56
Pb22 1Ct		- .05CC	ug/L	7 .1_5A	7CA.C6	- .3C5
Sb2 _ACt		7 .C603	ug/L	7 .235C	7C1.1C	73.26C
Se36_ Ct		7 .5362	ug/L	7 .33_1	722.C	7C._0C
Si253_CR		-3 .52	ug/L	7C.A61	7C_.53	72A.A1
Sn3A66Ct		- .365C	ug/L	7 . 20C6	73C. 0	73._01
SNC235CR		- . _C05	ug/L	7 .C2A_	7__3.A	-20.A5
Ti11C6Ct		72.006	ug/L	7 .2C55	7A.A11	7_6.1A
Tl36 ACt		- . A 2	ug/L	7 ._261	70AC._	- .A202
VC262CCt		- .23	ug/L	7 .16_C	73AA.A	-A5 2
Zn2 _2Ct		72.520	ug/L	7 . 501_	72.20	730.25
YC1_ CR		73C8153	9 cs/S	76C. 3C	7 ._55 6	73C8153
YC22C1Ct		73C8256	9 cs/S	73_.25_	7 .33C 3	73C8256
YC1_ Ct		723_80C	9 cs/S	7AC0. C	7 .16 A3	723_80C

LCSONE19ICS2

Meohr d7, my e:	Ft ST-2 3_O, UCt a	Meohr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 733:21:3Ct M	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		753.06	ug/L	7 .551_	73. _6	73821
t l16_3CR		728310	ug/L	73 .C2	7 .CA0A	738_65
t s3A63Ct		73 1.5	ug/L	7 .0CA1	7 .0211	7_A.C0
BC2 A6Ct		7521.3	ug/L	7 .A 6C	7 .35C0	7616.5
BmC55CCR		728 03	ug/L	732.22	7 .56 C	7A686_
Be131 CR		751.02	ug/L	7 .360C	7 .1_0C	7182C2
9 m135ACR		728_23	ug/L	721.01	7 .6 5C	72805
9 d22_5Ct		7250.0	ug/L	7 .1A3C	7 .3CA	7_8202
9 r 22A_Ct		7530.A	ug/L	7 .23A0	7 . C221	7182CA
9 N2_00Ct		72 A	ug/L	7 . A_6C	7 . C306	718AA1
9 u1201Ct		72_3.A	ug/L	7 .562_	7 .22_1	718C_A
Fe2566CR		738 5_	ug/L	73.613	7 .3A26	738C 5
KC0__CCR		73 85	ug/L	73C5.5	73.1A_	758512
Li_0 0CR		7513.3	ug/L	7C. 16	7 .0_ 5	7C8 65
Mg2 25Ct		7583A6	ug/L	7 .1_6C	7 . 0336	728_5
Mn250_CR		7521.A	ug/L	72.6C2	7 .5_30	7C826_
Mr 2 2 Ct		73 3.1	ug/L	7 .5_CA	7 .5501	75 2.1
, m5A65CR		7A8 2	ug/L	721.6_	7 .266C	73283_
, i213_Ct		753_.0	ug/L	7 .02 C	7 .316C	7385_2

LCSONE19ICS2

Medhr d7, my e: Ft ST-2 3_Q, UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:21:3Qt M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Qt		73 1._	ug/L	7 .A560	7 .A1 3	73A1.3
Sb2 _AQt		73 _._	ug/L	7 .2C 0	7 .225A	7A3.06
Se36_ Qt		73 5.5	ug/L	7 ._6_5	7 ._566	755.CA
Si253_QR		738 A2	ug/L	730.3C	73.5AC	7Q03.C
Sn3A66Qt		75 A.C	ug/L	73.A6_	7 .102A	7525.1
SNC235QR		752_.2	ug/L	71.A 6	7 .0216	72A8A_
Ti11Q6Qt		7533.3	ug/L	73.153	7 .2_C2	73682A
Tl36 AQt		73 1._	ug/L	7 .A 26	7 .0053	7332.2
VQ262QQt		753C.0	ug/L	7 .CA1	7 . 61A5	7A8523
Zn2 _2Qt		7535.1	ug/L	7 .5A62	7 .33QC	718C52
YQ1_ QR		73C825	9 cs/S	76 .131	7 ._1106	73C825
YQ22C1Qt		73C82 C	9 cs/S	75._6Q6	7 . C 61	73C82 C
YQ1_ Qt		723 8 1	9 cs/S	7A_.350	7 . C3 2	723 8 1

SN3697-001

Medhr d7, my e: Ft ST-2 3_Q, UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:20:25t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		- . C6__	ug/L	7 .2_1	7526.5	-3A2.2
t l16_3QR		7358_5	ug/L	750._0	7 .1_A_	731813
t s3A63Qt		76.1C_	ug/L	7 ._C0C	7_.620	7C.1A_
BQ2 A6Qt		75.110	ug/L	7 .2 0_	71.A6	73C.6C
BmC55QQR		7C_A6	ug/L	7 . 21C0	7 . 5 3	7238_2
Be131 QR		7C. A2	ug/L	7 . CC5A	73. 62	725_.C
9 m135AQR		7358_6	ug/L	7C.006	7 . 1 C_	730855
9 d22_5Qt		73.251	ug/L	7 . 1 66	72.C01	7CA.26
9 r 22A_Qt		75.A0C	ug/L	7 .3 6C	73.A_2	75 .0C
9 N2_00Qt		7A.61A	ug/L	7 . 61_6	7 .3 CA	730A.
9 u1201Qt		720.36	ug/L	7 .201	73. C	7136.0
Fe2566QR		73C86C	ug/L	766.A3	7 .__A	7238 _
KQ0__QQR		7616.0	ug/L	76.3A5	7 .600C	7163.0
Li_0 0QR		7 .AAAC	ug/L	7 .2222	725. 3	7C5._1
Mg2 25Qt		73805C	ug/L	73 .26	7 .5A_2	761C.5
Mn250_QR		7C_3.A	ug/L	73.0_0	7 .1A20	7C8 _
Mr 2 2 Qt		7 ._C__	ug/L	7 . 6_ A	73C.A_	71.062
, m5A65QR		730C.C	ug/L	731.5_	70.000	722C.6
, i213_Qt		7C.5_A	ug/L	7 . 2560	7 .5_A_	731._5
Pb22 1Qt		71 2.2	ug/L	72. 31	7 .___	75_C._
Sb2 _AQt		-3.206	ug/L	7 .5_CA	7CC.30	7 .CC _
Se36_ Qt		-3._32	ug/L	7 .5A3	71_. 1	7C.3 1
Si253_QR		71823C	ug/L	73 .1	7 .12 1	738C 0
Sn3A66Qt		7 .0A6_	ug/L	7 .23_5	720.C3	72.A5
SNC235QR		701.00	ug/L	7 . 5066	7 . 0A_3	7C82_2
Ti11Q6Qt		7C .A1	ug/L	73.C23	71.CA	738560
Tl36 AQt		-3.C23	ug/L	7 .22_5	735.6C	-2.635
VQ262QQt		7_ .33	ug/L	7 .1_ 3	7 .5663	738 55
Zn2 _2Qt		732A.1	ug/L	7 .03A0	7 .5_	763C.C
YQ1_ QR		7358 A6	9 cs/S	7310.A_	7 .631__	7358 A6
YQ22C1Qt		73583	9 cs/S	7C1.3 5	7 .2A5C0	73583
YQ1_ Qt		72228 6C	9 cs/S	738363._	7 .51CC6	72228 6C

SN3697-002

Medhr d7, my e: Ft ST-2 3_Q, UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:13:CQt M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3697-002

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmte: 5/22/2 2 733:13:CCt M — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73.105	ug/L	7 .1_12	72_.C2	-566.C
t l16_3CR	W	72681C	ug/L	725.	7 . A521	7208 5
t s3A63Ct		722.23	ug/L	7 .A2	71._61	733.0_
BC2 A6Ct		72C._A	ug/L	7 .3C3C	7 .501	75C.5C
BmC55CCR	W	738_3A	ug/L	7A.33_	7 .5 35	7A 8_2
Be131 CR		73C.50	ug/L	7 .32 2	7 .A2CA	738 C
9 m135ACR	W	7C08C2	ug/L	7362.2	7 .C 51	7508C0
9 d22_5Ct		75.05A	ug/L	7 .33_2	72. 30	7220.3
9 r 22A_Ct		76_.3	ug/L	7 .0 32	7 .0260	7_A0.6
9 N2_00Ct		733.A1	ug/L	7 .36 5	73._3	72A3.C
9 u1201Ct		76_.02	ug/L	7 .1A3A	7 .16C0	738C _
Fe2566CR	W	75085A	ug/L	7120.1	7 .5_AC	7A08A_
KC0__CCR		7380C5	ug/L	731.CC	7 .00 2	7622.0
Li_0 0CR		75. 00	ug/L	7 ._C2_	732.__	7A_. A
Mg2 25Ct		7280A0	ug/L	735.0C	7 .5_C_	7385A0
Mn250_CR	W	7308 2	ug/L	71A.A1	7 .22A3	735686
Mr 2 2 Ct		- . _0C0	ug/L	7 .2 50	71 C.6	-3.A__
, m5A65CR		7C 2.2	ug/L	7 .0C 2	7 .3AC	7_C3.A
, i213_Ct		75 .22	ug/L	7 .2A_1	7 .50	73_5.3
Pb22 1Ct		7213.	ug/L	73.A51	7 .A 23	7C5_._
Sb2 _ACt		-2.23_	ug/L	7 . 62A1	7C.36	73.226
Se36_ Ct		-3.03A	ug/L	7 .16C_	722.60	76.31_
Si253_CR		7A81CC	ug/L	725. 1	7 .2666	718A65
Sn3A66Ct		7 .606A	ug/L	7 ._065	7_6.1C	71.21_
SNC235CR		72 _.3	ug/L	73.316	7 .552_	73286C
Ti11C6Ct		70C.23	ug/L	7 .6CC3	73.202	71835C
Tl36 ACt		-3 .C1	ug/L	7 .53A3	7C.6_A	-1C.C0
VC262CCt		7A_.6A	ug/L	7 .__3	7 .0_	7385CC
Zn2 _2Ct		7535.3	ug/L	75.326	7 .665A	718AA5
YC1_ CR		73_811C	9 cs/S	72A_62	7 .305__	73_811C
YC22C1Ct		7358663	9 cs/S	7AC.3A1	7 .52_C5	7358663
YC1_ Ct		72168C_	9 cs/S	7C35.31	7 .3011_	72168C_

SN3697-003

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmte: 5/22/2 2 733:1_:5_t M — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 .5220	ug/L	7 . 25 1	7C.0AA	-C2 .A
t l16_3CR	W	7C_810	ug/L	7236.	7 .C02C	716851
t s3A63Ct		73C.0A	ug/L	73. 1	7_.6__	7_.66
BC2 A6Ct		70. 2_	ug/L	7 .2_C	71.05A	73A.2A
BmC55CCR		7A _._	ug/L	7C.A3C	7 .56_A	710836
Be131 CR		76.232	ug/L	7 . 25	7 .203C	75AA.1
9 m135ACR	W	726806	ug/L	7_5.05	7 .22 0	71181A
9 d22_5Ct		73.5A0	ug/L	7 . _6__	7C.1A6	7A0.53
9 r 22A_Ct		725.	ug/L	7 .503	72.2AC	7306._
9 N2_00Ct		71 .2	ug/L	7 .26 1	7 .6_31	7_ 6.6
9 u1201Ct		732 .6	ug/L	73.C60	73.216	738_AC
Fe2566CR	W	7C 800	ug/L	72_1._	7 ._53C	750833
KC0__CCR		728661	ug/L	713.61	73. _0	7385_0
Li_0 0CR		76.6A6	ug/L	7 .AC1A	7A.CCA	7336.C
Mg2 25Ct		718 6	ug/L	750.0	73.63A	738_20
Mn250_CR	W	7386AC	ug/L	7_._ 5	7 .1126	730822
Mr 2 2 Ct		- .3316	ug/L	7 . _552	750.53	- .CC3A
, m5A65CR		7353.2	ug/L	7A.1CC	75.536	73A0.5
, i213_Ct		730.CC	ug/L	7 .5A_5	71.1_1	752.AA

SN3697-003

Medhr d7, my e: Ft ST-2 3_Q UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 733:1_:5_t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Qt		71_2.A	ug/L	7C.C0_	73.21C	7_06.C
Sb2 _AQt		-3.3A6	ug/L	7 .C 32	711.0C	73.556
Se36_ Qt		-3.10	ug/L	7 .2056	72 .31	7C.61A
Si253_QR		73_80	ug/L	7CA.62	7 .261	708303
Sn3A66Qt		73._3A	ug/L	7 .C12_	72_.0C	71.06_
SNC235QR		732 .3	ug/L	7 .6_61	7 .A _0	7_86_5
Ti11C6Qt		703.22	ug/L	73. 00	73.532	728A50
Tl36 AQt		-2.036	ug/L	7 .2_16	76.0 5	-_.3 1
VQ262CQt		7350.2	ug/L	73.205	7 .A33	728A 2
Zn2 _2Qt		7C25.1	ug/L	70.1 C	73.03A	718 5A
YQ1_ QR		73583 5	9 cs/S	715.C3	7 .21CC2	73583 5
YQ22C1Qt		73582C0	9 cs/S	7306.01	73.30AA	73582C0
YQ1_ Qt		722_83_	9 cs/S	70_3._6	7 .11_A	722_83_

CCV

Medhr d7, my e: Ft ST-2 3_Q UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 733:C3:3_t M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		75 2.3	ug/L	7 .2CA0	7 . C65C	732810
t l16_3QR		732862	ug/L	732.51	7 . 6_66	73 811
t s3A63Qt		7C60.A	ug/L	75.C 0	73. A_	711C.A
BQ2 A6Qt		75 2.2	ug/L	71.151	7 .__0_	7636.1
BmC55CQR		75 0.3	ug/L	7 ._0 _	7 .3122	72386_
Be131 QR		752C.1	ug/L	71.03	7 .0 0_	713851
9 m135AQR		7328A6	ug/L	73_.26	7 .32_1	73185C
9 d22_5Qt		75 2.	ug/L	75. C5	73. 5	732825
9 r 22A_Qt		75 A.3	ug/L	75.231	73. 2_	718362
9 N2_00Qt		75 6.0	ug/L	7 .6562	7 .3AA2	7685A3
9 u1201Qt		7535._	ug/L	73.A1_	7 .15_3	7_86C5
Fe2566QR		7328_0	ug/L	7331.1	7 .A610	73_806
KQ0__CQR		7328A0	ug/L	7323.1	7 .6C20	7_8005
Li_0 0QR		7525.6	ug/L	7C.015	7 .6 5	7C8 1C
Mg2 25Qt		732855	ug/L	73 1.1	7 .A211	7_81A3
Mn250_QR		753C.C	ug/L	7 .53_3	7 .3 1	7C8365
Mr 2 2 Qt		7531.	ug/L	72._5A	7 .53A	7285C_
, m5A65QR		732860	ug/L	72_. 0	7 .2 33	7368_1
, i213_Qt		75 0.	ug/L	7C.020	7 .612C	7385C1
Pb22 1Qt		75 0.6	ug/L	75.2A	73. C	7A6C.1
Sb2 _AQt		7531.1	ug/L	71.A11	7 .0C_A	7C 0.C
Se36_ Qt		7C61.C	ug/L	7C.0C	7 .6_ _	72C1.3
Si253_QR		73181A	ug/L	73CC.C	73. 06	758C 1
Sn3A66Qt		706A.0	ug/L	71.A60	7 .0A35	753_.
SNC235QR		752 .C	ug/L	7 .5022	7 .33	72A816
Ti11C6Qt		75 A.C	ug/L	7 .36_5	7 . 1A_5	736811
Tl36 AQt		75 A.0	ug/L	7C.216	7 .A11C	75C6.0
VQ262CQt		7531.A	ug/L	72._21	7 .53 5	7A8536
Zn2 _2Qt		7C60.6	ug/L	7C.C30	7 .AA02	71811A
YQ1_ QR		73C8305	9 cs/S	7226.11	73._30A	73C8305
YQ22C1Qt		73C8225	9 cs/S	7A6.A2_	7 ._13CA	73C8225
YQ1_ Qt		7233850	9 cs/S	7_C_. 3	7 .1 51C	7233850

CCB

Medhr d7, my e: Ft ST-2 3_Q UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 733:C5:21t M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_Q UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:C5:21t M   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .1351	ug/L	7 .306	75_.06	-C2.12
t l16_3CR		72.C01	ug/L	7C.350	73_A3	-2_.10
t s3A63Ct		7 .2A3C	ug/L	7 .5C51	7361.A	-3.210
BC2 A6Ct		73.05C	ug/L	7 . _C1_	71._0	70.051
BmC55CCR		- .3212	ug/L	7 .2C56	7366.5	75C.3
Be131 CR		- . C3A2	ug/L	7 .31C1	7123.3	-0.6
9 m135ACR		-1.0_1	ug/L	73.060	7C0.00	-2_._2
9 d22_5Ct		7 . C A3	ug/L	7 . 306	7C1.A_	- .5311
9 r 22A_Ct		- . 2053	ug/L	7 . 03C2	7256._	73 .5C
9 N2_00Ct		7 .3 51	ug/L	7 .3623	73A2.C	72.C61
9 u1201Ct		7 .A336	ug/L	7 .1321	71AC_	-55.32
Fe2566CR		71.53	ug/L	71.162	76_._1	7C._CA
KC0__CCR		-3.53	ug/L	7_ .1A	71866A	-31A3
Li_0 0CR		73.611	ug/L	73.6_1	73 3._	753. 2
Mg2 25Ct		7 .06CC	ug/L	7 .1 66	716. 3	-A351
Mn250_CR		- .25_C	ug/L	7 . 0C62	726.21	7 ._A56
Mr 2 2 Ct		73.0_1	ug/L	7 .22A2	732.6C	76.230
, m5A65CR		-5.A16	ug/L	76. 50	7355.3	-_2.__
, i213_Ct		- . 31A0	ug/L	7 .2_62	7386C	7 .CC3C
Pb22 1Ct		- ._A _	ug/L	7 .5_52	7A1. 5	- . 3_A_
Sb2 _ACt		73. 2C	ug/L	7 .5352	75 .12	73.03
Se36_ Ct		7 .02_0	ug/L	7 .6562	7312.	7C.000
Si253_CR		72C.63	ug/L	72.006	733.3_	7C2.63
Sn3A66Ct		7 .3551	ug/L	7 .A25A	7513.6	72. 10
SNC235CR		7 . 2262	ug/L	7 . 3103	756.A3	-22.00
Ti11C6Ct		7 .3_A_	ug/L	7 .36 3	7332.A	-12.2C
Tl36 ACt		7 . 6 A2	ug/L	7 .600A	738 00	- ._162
VC262CCt		7 .33A3	ug/L	7 . 153_	726.0A	-1. 13
Zn2 _2Ct		7 . 2C_5	ug/L	7 . 133_	7382_C	7 .20_3
YC1_ CR		73C825	9 cs/S	7AA_ 3	7 ._230_	73C825
YC22C1Ct		73C82_5	9 cs/S	73 .C_	7 . 01120	73C82_5
YC1_ Ct		7235800	9 cs/S	738310._	7 .52021	7235800

SN3697-003L

Medhr d7, my e: Ft ST-2 3_Q UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:C6:C2t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73.123	ug/L	71. 6_	721C.C	-3 A
t l16_3CR		7C0860	ug/L	73_1._	7 .1C3	708A5
t s3A63Ct		730.C	ug/L	72.C_2	73C.35	7 .5333
BC2 A6Ct		731.56	ug/L	71.1 C	72C.13	76._ 0
BmC55CCR		7AC3.	ug/L	72.C56	7 .2621	708531
Be131 CR		76.352	ug/L	7 .2156	72.500	73 A2
9 m135ACR		71 863	ug/L	73_.01	7 . 5C32	7_8_C6
9 d22_5Ct		73.52_	ug/L	7 . __2A	7C.1C1	735.5C
9 r 22A_Ct		725.A	ug/L	7 ._532	72.52C	7CC.
9 N2_00Ct		712.50	ug/L	7 .21A3	7 .0132	7320.
9 u1201Ct		7325.A	ug/L	7 .0_5A	7 ._ A5	72AC.A
Fe2566CR		7C2823	ug/L	73 2.1	7 .2C21	733800
KC0__CCR		7286_A	ug/L	70._50	7 .25A	73A_.A
Li_0 0CR		76.61A	ug/L	7A1C6	7AC. 3	752.50
Mg2 25Ct		71823A	ug/L	7C.A2C	7 .3C66	712C.A
Mn250_CR		728 50	ug/L	72.6_0	7 .3CC1	718CC
Mr 2 2 Ct		72.326	ug/L	7 .01CA	71C.53	72.55
, m5A65CR		73__.A	ug/L	71.3_A	73.A66	-2.6CC
, i213_Ct		736.1A	ug/L	7 .6_ 2	7C.65C	733._1

SN3697-003L

Medhr d7, my e: Ft ST-2 3_Q UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:C6:C2t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		710A.A	ug/L	7C.6_3	73.13	731_.2
Sb2 _ACt		7C._11	ug/L	7 .0CA2	73_.35	73.663
Se36_ Ct		-1._13	ug/L	7C.613	7315.A	7C.11
Si253_CR		730835	ug/L	73A.06	7 .3 65	7380C5
Sn3A66Ct		- . 6A15	ug/L	7 . 03_1	70.2A1	73.A63
SNC235CR		7321.0	ug/L	7 .266	7 .2C3A	7381_3
Ti11C6Ct		702.6_	ug/L	73.2 _	73._51	7512._
Tl36 ACt		-_.203	ug/L	7 .CC3A	70. C5	-2.5_C
VC262CCt		73_C.1	ug/L	73.6AC	73.2 A	7556.6
Zn2 _2Ct		7CCC.6	ug/L	72.21	7 .5 31	7_3 .1
YC1_ CR		73C85C2	9 cs/S	7_2.6 _	7 .C125A	73C85C2
YC22C1Ct		73C8515	9 cs/S	752.A0C	7 .1_100	73C8515
YC1_ Ct		72308A3	9 cs/S	738AC_.3	7 .AC056	72308A3

SN3697-003A

Medhr d7, my e: Ft ST-2 3_Q UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:5C: 2t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		700. 3	ug/L	7 .3 C_	7 .315A	738_ _
t l16_3CR	W	752862	ug/L	75__.0	73. 03	7C_862
t s3A63Ct		7C_1.6	ug/L	7 .22CA	7 . CAC5	711C.
BC2 A6Ct		7CA1.6	ug/L	73. 3C	7 .2 6_	7652.
BmC55CCR	W	7382 A	ug/L	731.2	73. 62	7508A6
Be131 CR		7065.0	ug/L	75. 10	73. 3_	7118 1
9 m135ACR	W	712805	ug/L	7CC0.	73.1_5	71A83_
9 d22_5Ct		7C_C.3	ug/L	73.1_1	7 .261A	732822
9 r 22A_Ct		7063.2	ug/L	72. 52	7 .C30A	718123
9 N2_00Ct		706 .0	ug/L	7 .A 5	7 .3_13	768606
9 u1201Ct		75A2.6	ug/L	72.202	7 .1A6A	7A85
Fe2566CR	W	7C2800	ug/L	7532._	73.36A	7_2800
KC0__CCR		732831	ug/L	73C6.3	73.21	708 __
Li_0 0CR		7CAA.C	ug/L	73. 3A	7 .2 A5	7C8355
Mg2 25Ct		7086A1	ug/L	73_.A0	7 .2331	7C81A3
Mn250_CR	W	728262	ug/L	721.20	73. 35	72 80
Mr 2 2 Ct		7C_ .C	ug/L	75. 6A	73.3 0	728C56
, m5A65CR		7581C6	ug/L	70_.3A	73.C2C	7A861A
, i213_Ct		7006.1	ug/L	72.335	7 .CC32	7385__
Pb22 1Ct		7A 6.5	ug/L	71.3C1	7 .1AA1	73852A
Sb2 _ACt		7C_3.5	ug/L	75.22_	73.312	7165.5
Se36_ Ct		7005.C	ug/L	73.3_1	7 .2CC0	7251.3
Si253_CR		7358AC	ug/L	73_0.1	73. 5_	708 06
Sn3A66Ct		7C__.2	ug/L	72.0 6	7 .5A33	7536.2
SNC235CR		7506.C	ug/L	7A.26C	73.C13	7158 1
Ti11C6Ct		752_.A	ug/L	7 .66C6	7 .3AAA	7238_0
Tl36 ACt		7C_3.5	ug/L	73.CA2	7 .1233	751C.5
VC262CCt		7_ 6.6	ug/L	71. 12	7 .C602	73 86_
Zn2 _2Ct		7A_6.C	ug/L	72.621	7 .11_2	7_820C
YC1_ CR		73580 A	9 cs/S	7323.56	7 .00C 6	73580 A
YC22C1Ct		73581 0	9 cs/S	716.6AA	7 .2_325	73581 0
YC1_ Ct		722A8A5	9 cs/S	7383_5.	7 .5 6 C	722A8A5

SN3697-003S

Medhr d7, my e: Ft ST-2 3_Q UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:5A:3_t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3697-003S

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 733:5A:3_t M   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7C .62	ug/L	7 ._33	73.C61	7511.
t l16_3CR	W	751800	ug/L	7520.	7 .6A50	7C_80C
t s3A63Ct		7_2.31	ug/L	7 .362	7 .1 6	7C .AC
BC2 A6Ct		7165.5	ug/L	7 .5_63	7 .3C16	70_5.C
BmC55CCR	W	72852_	ug/L	736._5	7 .0006	733681
Be131 CR		75_.__	ug/L	7 .5612	73. C0	718015
9m135ACR	W	72A80	ug/L	7222.5	7 .0052	71286A
9d22_5Ct		7213.3	ug/L	7 . 0_3C	7 . 126C	7_8321
9r22A_Ct		7CAC.2	ug/L	7 .C	7 . A2_	718201
9N2_00Ct		7216._	ug/L	72._ 1	73. A_	7C806C
9u1201Ct		7115.C	ug/L	72.01A	7 .A3_2	7C80A
Fe2566CR	W	752835	ug/L	7C25.C	7 .A350	7058CA
KC0__CCR		7338_5	ug/L	73_0.3	73.C1C	7_8_63
Li_0 0CR		7C63._	ug/L	73.A A	7 .1_0A	7C832C
Mg2 25Ct		7080CC	ug/L	71.360	7 . C32A	7C82C0
Mn250_CR	W	7386C6	ug/L	735.5_	7 .06AC	730815
Mr2 2 Ct		7C0. 3	ug/L	7 .10_	7 .066A	725 .6
, m5A65CR		7081C1	ug/L	7_ .2A	7 .A2 6	732832
, i213_Ct		7C0_.2	ug/L	7 .5A _	7 .3236	7385C5
Pb22 1Ct		7CC6.6	ug/L	73.A16	7 .C A6	7AC_.5
Sb2 _ACt		7_C.A6	ug/L	73.03C	72._C2	755._2
Se36_ Ct		732.AA	ug/L	7 .2011	72.321	732.16
Si253_CR		72 8A5	ug/L	7252.0	73.232	768306
Sn3A66Ct		7101.6	ug/L	7 .1 6_	7 . A206	7C3_.A
SNC235CR		750A._	ug/L	75.C_A	7 .6C5	71C85
Ti11C6Ct		71A0.0	ug/L	71.C12	7 .AA53	7358_0
Tl36 ACt		7A0.A2	ug/L	7 ._5 6	7 .0C32	73 3.2
VC262CCt		7055.3	ug/L	70.13	7 .6_A3	7318C3
Zn2 _2Ct		70A .0	ug/L	7 ._22_	7 . 060_	758_15
YC1_ CR		7358C61	9cs/S	721.15C	7 .35 0C	7358C61
YC22C1Ct		73581 _	9cs/S	7 .16215	7 . 25_1	73581 _
YC1_ Ct		7225832	9cs/S	728C50.5	73. 63_	7225832

SN3697-003P

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 732: 2:12PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		716._2	ug/L	7 .0C 3	73.A_A	7C6A.2
t l16_3CR	W	7_ 8_6	ug/L	7385_2	72.501	75C82
t s3A63Ct		750.0A	ug/L	7 . 6C0C	7 .3_C	71A. A
BC2 A6Ct		71_A.C	ug/L	72. C2	7 .55CC	702 .C
BmC55CCR	W	728_2	ug/L	700.53	72.656	732_8C
Be131 CR		751.3_	ug/L	73.CCC	72.030	718506
9m135ACR	W	71C865	ug/L	738 30	72.6 6	7C38 2
9d22_5Ct		7221.6	ug/L	7 .A0__	7 .163_	758661
9r22A_Ct		7C_3._	ug/L	72.3A2	7 .C020	718352
9N2_00Ct		72CC.3	ug/L	7 .321	7 . 5 1A	7C86 6
9u1201Ct		71C0._	ug/L	73.353	7 .1133	7C86AC
Fe2566CR	W	752853	ug/L	7385 6	72.A01	7008_1
KC0__CCR		7338C_	ug/L	7133.0	72.02	7_8036
Li_0 0CR		7C01.6	ug/L	73 .1	72.30C	7C8 _2
Mg2 25Ct		7A803C	ug/L	7CA.2A	7 .55C3	7C8A22
Mn250_CR	W	738236	ug/L	71 .6C	72.5C	7338 A
Mr2 2 Ct		716.66	ug/L	7 .30_2	7 .CC _	7235.0
, m5A65CR		7083 1	ug/L	72 A.5	72.615	73386A
, i213_Ct		7C_3.	ug/L	73.00C	7 .1AC0	738533

SN3697-003P

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732: 2:12PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		75 1.2	ug/L	73.50A	7 .131_	7655._
Sb2 _AOt		75C.5C	ug/L	7 .A2 5	73.5 C	700.C
Se36_ Ot		70.1	ug/L	7 .5_C3	70.02A	76.C51
Si253_OR		72280	ug/L	7_C_.3	72.AC_	73 82
Sn3A66Ot		71_1.5	ug/L	72.C2_	7 .__0C	7C 6.C
SNC235OR		756C.2	ug/L	735.AA	72._02	71_836
Ti11C6Ot		71_A.A	ug/L	7 . 26CA	7 . A	73C86A
Tl36 AOt		706.23	ug/L	7 ._A52	7 .A_53	762.63
VO262COt		7010.2	ug/L	7C.10_	7 .5610	731830
Zn2 _2Ot		7_01.6	ug/L	71. _3	7 .C5C2	7C8631
YO1_ OR		7358A2A	9 cs/S	7153.36	72.23AA	7358A2A
YO22C1Ot		7358C_2	9 cs/S	7C1.1A3	7 .2A 5_	7358C_2
YO1_ Ot		722_815	9 cs/S	711A. 1	7 .3C61C	722_815

SN3697-004

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732: _:CAPM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		7 ._1C2	ug/L	7 .20CC	7C1.2_	-C35.A
t l16_3OR		730866	ug/L	7_5. 2	7 .1_3C	73583
t s3A63Ot		73 .21	ug/L	7 .2A06	72.A35	71.1A2
BO2 A6Ot		70.16_	ug/L	7 .1C 3	7C.56A	73A_0
BmC55COR		7C52.C	ug/L	7C. 1A	7 .A625	72 856
Be131 OR		71.323	ug/L	7 . 0A1	72.5 6	7361.A
9 m135AOR		7A8C_3	ug/L	7CC.26	7 .521C	768113
9 d22_5Ot		7 .A5A6	ug/L	7 .3310	731.2C	7_A.C2
9 r 22A_Ot		722.20	ug/L	7 . 3C33	7 . _11_	735A.1
9 N2_00Ot		733.0	ug/L	7 .221A	73.631	7226.A
9 u1201Ot		7A .C2	ug/L	7 .1325	7 .1AA_	738 _1
Fe2566OR	W	7C38CA	ug/L	71A_.1	7 .6131	750802
KO0__COR		73822_	ug/L	710.2	71. 15	75C0.6
Li_0 0OR		7 .3253	ug/L	73.333	7AA0.0	71A.A0
Mg2 25Ot		7_06.2	ug/L	73.123	7 .36C_	715_.5
Mn250_OR		7A55._	ug/L	73.A60	7 .223A	708123
Mr 2 2 Ot		7 ._55_	ug/L	7 . 3C10	72.362	71.012
, m5A65OR		7252.5	ug/L	75._ 2	72.236	71C_.C
, i213_Ot		75.A1C	ug/L	7 .2_22	7C.C6C	73C.62
Pb22 1Ot		71 6._	ug/L	73.515	7 .C656	750C.0
Sb2 _AOt		73.2 0	ug/L	7 .A210	7_A.25	71.C A
Se36_ Ot		7 .6A20	ug/L	72._20	72_0.1	75.C__
Si253_OR		7281A6	ug/L	732.5C	7 .52CA	738 C2
Sn3A66Ot		72.C01	ug/L	7 .13AA	732.A6	7C._52
SNC235OR		755.1C	ug/L	7 . 1161	7 . _313	71835
Ti11C6Ot		7_ .C_	ug/L	73. _C	73.0_	728151
Tl36 AOt		- .0313	ug/L	7 .560_	7A1.A	-2.C0
VO262COt		7333.6	ug/L	7 .11C2	7 .26A_	7386CC
Zn2 _2Ot		755._6	ug/L	7 .2101	7 .C2_3	7161.C
YO1_ OR		73C8A61	9 cs/S	736A.11	73.1130	73C8A61
YO22C1Ot		73C86_6	9 cs/S	732.11	7 . A21_6	73C86_6
YO1_ Ot		7236863	9 cs/S	738C__.6	7 .__0 _	7236863

SN3697-005

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:33: _PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3697-005

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:33: _PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73.25C	ug/L	7 ._611	755.1	-C21.0
t l16_3CR		7238	ug/L	7265.	73.C 5	73A8 0
t s3A63Ct		73C.AA	ug/L	7 . _5_6	7 .CC3C	7_.011
BC2 A6Ct		732. 1	ug/L	7 .3 62	7 .6 0	720.02
BmC55CCR	W	738 22	ug/L	73_. _	73.503	7C08_
Be131 CR		70.5_1	ug/L	7 .35_5	72. 0	7CAC.5
9 m135ACR		7318 0	ug/L	7365.	73.C62	73C80A
9 d22_5Ct		72.2 _	ug/L	7 . _11C	72.A03	73 5._
9 r 22A_Ct		7310.A	ug/L	7 .332C	7 . A35_	7626.A
9 N2_00Ct		73 .6	ug/L	7 .3A 0	73._5A	7215.2
9 u1201Ct		7C5.01	ug/L	73.555	71.C 3	756 .0
Fe2566CR	W	7C285_	ug/L	70C2.0	73.0C5	7_ 8_A
KC0__CCR		738_C2	ug/L	7_A60	7C.2	7A 2.5
Li_0 0CR		73. 0C	ug/L	73.33	73 1.C	7C0._5
Mg2 25Ct		738535	ug/L	7_36A	7 .C 6	7A2 ._
Mn250_CR	W	7682 2	ug/L	732_.0	73.100	7A 805
Mr 2 2 Ct		7 .C_5	ug/L	7 .330	725.30	73.AA1
, m5A65CR		73_1.5	ug/L	70.C _	7C.51	72 6.5
, i213_Ct		72 ._6	ug/L	7 .3 1	7 .C600	7_2.A_
Pb22 1Ct		72 A.A	ug/L	73. 5	7 .5 20	7163.6
Sb2 _ACt		- .3_3C	ug/L	7 ._561	7C A_	72.152
Se36_ Ct		-3.561	ug/L	7 .365A	732.1	7_.526
Si253_CR		718 6	ug/L	73C.C5	7 .CA 2	73811_
Sn3A66Ct		7 .AA16	ug/L	7 . 3203	73.C1A	72.6_5
SNC235CR		7A_. C	ug/L	73.5A_	73.ACC	758 12
Ti11C6Ct		70_.13	ug/L	72.20C	72.6A	718 00
Tl36 ACt		-1.6A0	ug/L	7 . 5_05	73.C21	-35.00
VC262CCt		762.63	ug/L	73.5C	73._50	738_3_
Zn2 _2Ct		73 3.3	ug/L	7 .1 6	7 .1 5_	7021.C
YC1_ CR		73582_3	9 cs/S	7C6.C20	7 .121AA	73582_3
YC22C1Ct		73583_3	9 cs/S	72C._CA	7 .3_25A	73583_3
YC1_ Ct		7220832	9 cs/S	728_0 .1	73.3050	7220832

PBWNE19ICW2

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:35:2_PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .2C32	ug/L	7 .2500	73 _.6	-C .2C
t l16_3CR		723.52	ug/L	75.15A	72C.A6	-33. _
t s3A63Ct		7 .53 0	ug/L	7 .0 2_	7310._	-3. 05
BC2 A6Ct		73.6 5	ug/L	7 . 1520	73.A52	70.62_
BmC55CCR		- . 6A_1	ug/L	7 .15C5	7156.C	755. 1
Be131 CR		- . 025_	ug/L	7 . 06C5	73 6.5	-6.050
9 m135ACR		73. 60	ug/L	71.C52	713C.A	-23.C3
9 d22_5Ct		- . 5102	ug/L	7 . 3006	711.32	-2.0A2
9 r 22A_Ct		- .332A	ug/L	7 . 1205	726. C	76.651
9 N2_00Ct		7 .C C_	ug/L	7 . _52_	73_.31	7A.31C
9 u1201Ct		7 .01 3	ug/L	7 .3651	72_.05	-55.__
Fe2566CR		72_.2_	ug/L	75.025	723.A	71C.A2
KC0__CCR		7C.601	ug/L	723. A	7C2C.	-31C.1
Li_0 0CR		7 ._505	ug/L	73._12	72CA.2	7C3.2
Mg2 25Ct		730. A	ug/L	72.20C	731.12	7 . 60AA
Mn250_CR		- .32__	ug/L	7 .1 31	721A.	73.0C3
Mr 2 2 Ct		7 .C3_1	ug/L	7 . 10_6	76. 5C	72.5 2
, m5A65CR		73. C2	ug/L	71.500	71C1.2	-52. 1
, i213_Ct		7 . 552C	ug/L	7 . 25CC	7C_. _	7 ._3_A

PBWNE19ICW2

Medhr d7, my e: Ft ST-2 3_O, UOt a | Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:35:2_PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		- .5252	ug/L	7 .AC25	73_ .C	7 .25 A
Sb2 _AOt		7 .AC32	ug/L	7 .2_A3	713.A0	73.55C
Se36_ Ot		- .3 06	ug/L	7 .11_6	7132.3	7C.1CA
Si253_OR		-5._16	ug/L	72.C53	7C1.C0	71 .C6
Sn3A66Ot		7 ._626	ug/L	7 .10_6	75C.C	72.506
SNC235OR		- . 16A2	ug/L	7 . C 5A	73 3.6	-2_.31
Ti11C6Ot		7 .2_55	ug/L	7 .13C2	733A.1	-2A.2
Tl36 AOt		- .A500	ug/L	7 . C2C2	7C.6C_	-3._50
VO262COt		7 . 2A32	ug/L	7 .2_ 3	762C.A	-C.160
Zn2 _2Ot		7 .5A32	ug/L	7 . C562	70.6 2	7C.3C_
YO1_ OR		73C82 C	9 cs/S	72 .6 0	7 .3C036	73C82 C
YO22C1Ot		73C83AC	9 cs/S	73 C.C1	7 .01_2C	73C83AC
YO1_ Ot		7231853	9 cs/S	7_5.3_3	7 . 1 536	7231853

LCSWNE19ICW2

Medhr d7, my e: Ft ST-2 3_O, UOt a | Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:36:C5PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		753.16	ug/L	7 .1C__	7 ._0C5	7382C
t l16_3OR		7283_0	ug/L	735. 6	7 ._6_C	738035
t s3A63Ot		73 C.A	ug/L	73._22	73.5CA	7_A.30
BO2 A6Ot		752A._	ug/L	71.___	7 ._61_	7611.C
BmC55OOR		7283 5	ug/L	73.015	7 . A2C2	763825
Be131 OR		75C.16	ug/L	7 .C502	7 .AC 0	718205
9 m135AOR		728_0A	ug/L	7C.020	7 .30_5	728A C
9 d22_5Ot		72_5.A	ug/L	73.5_1	7 .5AA3	7_81_
9 r 22A_Ot		75OC.C	ug/L	71.2_C	7 .5660	71815_
9 N2_00Ot		723C.1	ug/L	72.2A2	73. _5	7C8 35
9 u1201Ot		72_A6	ug/L	7C.1_6	73._25	71850_
Fe2566OR		738 03	ug/L	7 .5_1	7 . 5255	738C21
KO0__OOR		73 8__	ug/L	7A .A3	7 .05A1	758_ C
Li_0 0OR		75C6.2	ug/L	7 ._330	7 .333C	7C822C
Mg2 25Ot		75826A	ug/L	71C.13	7 ._C00	728__3
Mn250_OR		7513.6	ug/L	7 ._102	7 .336A	7C8151
Mr 2 2 Ot		7333.A	ug/L	7 .__ 2	7 .56 5	75CC.0
, m5A65OR		7A8335	ug/L	7C.55A	7 . 5_30	73281
, i213_Ot		75C2.1	ug/L	71.2AC	7 ._ 5_	738_32
Pb22 1Ot		73 0.2	ug/L	7 . 0C6C	7 . _6A6	73A_.1
Sb2 _AOt		733 .2	ug/L	7 ._326	7 .55_2	7A2.65
Se36_ Ot		73 5.3	ug/L	7 .5 CC	7 .C066	75C.1C
Si253_OR		738332	ug/L	725.23	72.2_0	7CA2.0
Sn3A66Ot		7510._	ug/L	72.301	7 .C C1	75C5.6
SNC235OR		75C5.C	ug/L	72.3A6	7 .C 3C	7268AC
Ti11C6Ot		7515.3	ug/L	70.C00	73.162	72 82_
Tl36 AOt		73 A.	ug/L	7 .3105	7 .3201	7335.3
VO262COt		7512.0	ug/L	72.1 C	7 .C125	7A8A5
Zn2 _2Ot		7525._	ug/L	72._C	7 .5 21	718C_3
YO1_ OR		73C8230	9 cs/S	7313.53	7 .625	73C8230
YO22C1Ot		73186_1	9 cs/S	7A_.C31	7 ._3AA_	73186_1
YO1_ Ot		723 806	9 cs/S	738A_3._	7 .AA132	723 806

SN3763-026

Medhr d7, my e: Ft ST-2 3_O, UOt a | Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:21:5_PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3763-026

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 7732:21:5_PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .26A5	ug/L	7 .1_1	7323._	-5 .5A
t l16_3CR		761C.1	ug/L	71.12C	7 .155A	701C.C
t s3A63Ct		- . A61_	ug/L	73.535	738_65	-3.51
BC2 A6Ct		7_.1_6	ug/L	7 .CC22	7_.6C2	735.6_
BmC55CCR		733. 3	ug/L	7 .3 2_	7 .613A	75C5.1
Be131 CR		7 . C326	ug/L	7 . _023	73_2.A	-5.5__
9 m135ACR		73832C	ug/L	7_.CC5	7 .501C	7383A1
9 d22_5Ct		- . 1 C_	ug/L	7 . 6_5A	713.0	-3.210
9 r 22A_Ct		7 .1031	ug/L	7 . 002A	72 .A3	731.0_
9 N2_00Ct		73.1C0	ug/L	7 .21CA	730.C1	72_.36
9 u1201Ct		7 .6C55	ug/L	7 .3200	731.53	-51.56
Fe2566CR		7A3_.6	ug/L	732.51	73.51C	7383 1
KC0__CCR		716_.5	ug/L	73 .05	72.033	700.00
Li_0 0CR		75. A1	ug/L	7 .5265	73 .C2	70_.2C
Mg2 25Ct		7535.0	ug/L	73.62A	7 .101A	7251.3
Mn250_CR		75A. 3	ug/L	7 .3505	7 .203_	7CA5.3
Mr 2 2 Ct		7 .5066	ug/L	7 . _ CA	73 .C1	71.121
, m5A65CR		7285C3	ug/L	70.C1	7 .262C	718AA
, i213_Ct		7 .5C A	ug/L	7 . 1 A_	75.0 _	72. 2
Pb22 1Ct		7 .A063	ug/L	7 ._23A	70 .01	72.56_
Sb2 _ACt		7 .1160	ug/L	7 .1_3	73 _.1	73.36A
Se36_ Ct		7 .03 A	ug/L	7 .220	713.61	7C.063
Si253_CR		7C8A32	ug/L	75. 23	7 .3 CC	728 2
Sn3A66Ct		7 .2 03	ug/L	7 .2C63	732 .1	72. 6
SNC235CR		76.215	ug/L	7 .3013	73.A0C	7CA6.6
Ti11C6Ct		7_C.C0	ug/L	7 .2030	7 .C235	728CCA
Tl36 ACt		- .0605	ug/L	7 . 6221	733.5_	-3.013
VC262CCt		73.A1	ug/L	7 .35A_	7A___	72_._5
Zn2 _2Ct		71.C 0	ug/L	7 . 0 CC	72. _0	721.3A
YC1_ CR		73C8C56	9 cs/S	736.22	7 .31261	73C8C56
YC22C1Ct		73C82_C	9 cs/S	73C.__0	7 .3 2A2	73C82_C
YC1_ Ct		723C8C2	9 cs/S	726.326	7 . 315A5	723C8C2

PBSNE21ICS1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 7732:2A:2 PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .5_ A	ug/L	7 .310_	72C.5C	-C0.A5
t l16_3CR		725.A3	ug/L	733.26	7C1.05	-0.506
t s3A63Ct		- .22AA	ug/L	7 ._251	7201.1	-3.5_A
BC2 A6Ct		72.53	ug/L	7 .3CA1	75.633	7A.6__
BmC55CCR		7 .3C32	ug/L	7 .2_30	73A5.C	7_5.36
Be131 CR		- . C2_1	ug/L	7 . 25A1	7_ .56	-0.612
9 m135ACR		73A.20	ug/L	7 .1 A	73._C0	-1.261
9 d22_5Ct		- . _563	ug/L	7 . 23	713.A_	-1. A
9 r 22A_Ct		- .26C_	ug/L	7 . 0__0	72_. 1	7A.0AA
9 N2_00Ct		7 ._106	ug/L	7 . AA1A	731.A_	732.C0
9 u1201Ct		7 .5_ 1	ug/L	7 .1A_3	7_A63	-50.50
Fe2566CR		73_. 5	ug/L	7 . C220	7 .2_11	723.2
KC0__CCR		75.2CA	ug/L	753._2	76A1.A	-311.A
Li_0 0CR		72.A 3	ug/L	73.613	7_A6_	750.1_
Mg2 25Ct		733._1	ug/L	73.022	73C.A	-2._5_
Mn250_CR		7 .AC__	ug/L	7 .26AA	715.26	76.__2
Mr 2 2 Ct		7 .1__A	ug/L	7 . 0CA_	72 .C3	72.2CA
, m5A65CR		73A. 6	ug/L	7C. _C	722.C0	-2_. 2
, i213_Ct		7 .C2A6	ug/L	7 . 11 _	70.0 A	73.01_

PBSNE21ICS1

Medhr d7, my e:	Ft ST-2 3_Q, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 7732:2A:2 PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		- ._1C1	ug/L	7 . 6151	73C.05	7 . _2_A
Sb2 _ACt		7 .0_C	ug/L	7 .3122	730.1	73.2C_
Se36_ Ct		7 .2C66	ug/L	73.553	7_2 .5	7C.5 1
Si253_CR		-C.A15	ug/L	73C.20	7265.3	71 .03
Sn3A66Ct		726.A5	ug/L	7 .353C	7 .5 01	712.C1
SNC235CR		7 .36_	ug/L	7 . A5C2	7C1.50	-31.3A
Ti11C6Ct		7 .2ACC	ug/L	7 . 5C3	736. 2	-20.2_
Tl36 ACt		-3.260	ug/L	7 .C205	712.6_	-2.32C
VC262CCt		7 . 2632	ug/L	7 .1010	7382A1	-C.1AC
Zn2 _2Ct		72.661	ug/L	7 . _31_	72. 5	72 .2
YC1_ CR		73C83_3	9 cs/S	725.653	7 .3A12_	73C83_3
YC22C1Ct		73C8313	9 cs/S	732.531	7 . AA5C0	73C8313
YC1_ Ct		7233862	9 cs/S	738566.C	7 .05C02	7233862

CCV

Medhr d7, my e:	Ft ST-2 3_Q, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 7732:12:C PM	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		753_._	ug/L	72.01	7 .52AC	7328_3
t l16_3CR		73183C	ug/L	726.3_	7 .223A	73 851
t s3A63Ct		75 A.0	ug/L	7 ._ACA	7 .31C_	7110.1
BC2 A6Ct		7531.5	ug/L	73.__	7 .1211	762_._
BmC55CCR		7522.0	ug/L	72. 2	7 .1A13	7228__
Be131 CR	W	7512.	ug/L	73.C06	7 .20A	7128 1
9 m135ACR		731835	ug/L	703.11	7 .5C2C	7318A1
9 d22_5Ct		7532.5	ug/L	73. 56	7 .2 __	732811
9 r 22A_Ct		7536.A	ug/L	73.216	7 .21A1	718236
9 N2_00Ct		7523.	ug/L	73. 31	7 .36CC	7680 3
9 u1201Ct		752C.C	ug/L	73.A6	7 .1_ 1	7_8660
Fe2566CR		7318 1	ug/L	7A_.6	7 .___0	73082A
KC0__CCR		73183	ug/L	72_.23	7 .2	7_86 6
Li_0 0CR	W	751 .5	ug/L	71.21C	7 ._ 6_	7C8 05
Mg2 25Ct		7328A6	ug/L	71C.A3	7 .20	7_8C_3
Mn250_CR		7525.0	ug/L	72.C C	7 .C501	7C8261
Mr 2 2 Ct		7525.6	ug/L	71. 6A	7 .5A6	728501
, m5A65CR		731830	ug/L	71 .3	7 .22A_	73686_
, i213_Ct		753A.2	ug/L	73.C3A	7 .201_	7385 5C
Pb22 1Ct		753_.A	ug/L	73.110	7 .25AA	7A60.
Sb2 _ACt		752C.0	ug/L	73.___	7 .1305	7C3 .5
Se36_ Ct		75 1.6	ug/L	72.302	7 .C13	72CC._
Si253_CR	W	73185C	ug/L	70.A5_	7 . 5A 1	758C02
Sn3A66Ct		75 A.0	ug/L	73.065	7 .152A	753A.6
SNC235CR	W	752A.A	ug/L	73. _	7 .2 5	72A8A6
Ti11C6Ct		7536.3	ug/L	73.313	7 .2306	736855
Tl36 ACt		752 .6	ug/L	7 .A660	7 .3020	755C.6
VC262CCt		7522.3	ug/L	72.162	7 .C5A3	7A8505
Zn2 _2Ct		75 A.5	ug/L	73.330	7 .236A	7181_
YC1_ CR		73C8361	9 cs/S	736.5_3	7 .310A2	73C8361
YC22C1Ct		73C8 22	9 cs/S	720.32C	7 .361CC	73C8 22
YC1_ Ct		72 6850	9 cs/S	7CA6._	7 .211_2	72 6850

CCB

Medhr d7, my e:	Ft ST-2 3_Q, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 7732:1_:C0PM	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:1_:C0PM   Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .333	ug/L	7 .32A	7335.1	-10.05
t l16_3CR		76.2 0	ug/L	76.6 6	73 0._	-23.35
t s3A63Ct		73. 61	ug/L	73. 50	76_.05	- .0 3
BC2 A6Ct		73. 61	ug/L	7 .30CA	73_.	7_._60
BmC55CCR		- .1153	ug/L	7 .3 33	71 .3A	7C5.C2
Be131 CR		- . 5AC	ug/L	7 . 335_	736.06	-6. CC
9 m135ACR		-_.5_0	ug/L	73.115	72 .11	-26.62
9 d22_5Ct		7 . 0205	ug/L	7 . 6330	732.51	7 .201_
9 r 22A_Ct		- .2212	ug/L	7 . 65 1	7C.25A	76.53
9 N2_00Ct		7 . 1 _6	ug/L	7 . 5_C_	73AC.	73. _5
9 u1201Ct		- . C0_3	ug/L	7 .5 32	738 51	-_A 6
Fe2566CR		71.355	ug/L	72.C25	70_.A_	7C.3A5
KC0__CCR		- ._120	ug/L	713._6	758 6	-316.2
Li_0 0CR		7 .CA2C	ug/L	72. 2_	7C2 .	7C .11
Mg2 25Ct		- . 513	ug/L	7 ._2_1	7388A	-A.00
Mn250_CR		- ._01A	ug/L	7 .C_2	7_A.50	-2.0C
Mr 2 2 Ct		73.506	ug/L	7 .1633	72C.00	7A.C_0
, m5A65CR		7 .C530	ug/L	70.22C	738566	-51.A3
, i213_Ct		- . 2650	ug/L	7 .21C	7063.3	7 .16A1
Pb22 1Ct		- .AA11	ug/L	7 . 6A33	733.33	- .1AC
Sb2 _ACt		7 .31C1	ug/L	7 . A06_	7_5.CA	73. 22
Se36_ Ct		- .CA15	ug/L	73. 1	72 0.5	7C.205
Si253_CR		73 . 5	ug/L	73_.0A	73_0.	710.26
Sn3A66Ct		- . ACCA	ug/L	7 . 3225	73C.5	73.A2C
SNC235CR		- .31 6	ug/L	7 . 1215	72C.02	-13.56
Ti11C6Ct		7 .5_A1	ug/L	7 . 1 10	75.1C5	-3_.6A
Tl36 ACt		7 .13A_	ug/L	7 . _20	736._A	- .C 36
VC262CCt		7 .3 02	ug/L	7 . 12A1	71 ._2	-1.2C
Zn2 _2Ct		7 . 521	ug/L	7 . 025	731A_	7 ._21_
YC1_ CR		73C8C3_	9 cs/S	7236.03	73.52C3	73C8C3_
YC22C1Ct		73C8552	9 cs/S	715.116	7 .2C2A_	73C8552
YC1_ Ct		723682_	9 cs/S	7385AA_	7 .02C52	723682_

LCSONE21ICS1

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 7816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:C3: 6PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7CA.C	ug/L	7 ._022	73.1A6	7388C2
t l16_3CR		728 02	ug/L	70.35	7 .1C53	738_C
t s3A63Ct		766.C2	ug/L	7 . _0A6	7 . _A26	7_C.2_
BC2 A6Ct		7063.C	ug/L	72.5_0	7 .522C	7A_1.C
BmC55CCR		728 2_	ug/L	7 .3650	7 . 6_56	7A08A6
Be131 CR		752.1C	ug/L	7 . _0_5	7 .3262	718351
9 m135ACR		7285_5	ug/L	723.A6	7 .A512	728_A_
9 d22_5Ct		7253.6	ug/L	73.AA5	7 .0CA_	758661
9 r 22A_Ct		7530.1	ug/L	72.6A1	7 .50_5	718302
9 N2_00Ct		72 C.A	ug/L	7 .23 _	7 .3 2A	718A A
9 u1201Ct		725A.C	ug/L	7 .225	7 . A03	718C A
Fe2566CR		738 15	ug/L	73.53_	7 .3C_C	73810_
KC0__CCR		73 82A	ug/L	71A.52	7 .10C_	758C 5
Li_0 0CR		7520.3	ug/L	7C.36_	7 .06_	7C8 5A
Mg2 25Ct		7C86_3	ug/L	71A.A0	7 .0A1_	728C0A
Mn250_CR		75 6.6	ug/L	72. 52	7 .C 2C	7C8305
Mr 2 2 Ct		73 _.6	ug/L	7 .16_C	7 .10 6	7530.6
, m5A65CR		708A25	ug/L	735.CA	7 .360A	7338A0
, i213_Ct		753C.A	ug/L	73.0 C	7 .113	738522

LCSONE21ICS1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:C3: 6PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		73 3.1	ug/L	73.160	73.106	7305.3
Sb2 _ACt		73 C.2	ug/L	73.33	73. _5	700.AC
Se36_ Ct		766.56	ug/L	7 .A351	7 .A3A0	753.C2
Si253_CR		738 55	ug/L	73 .A_	73. 26	7C56.A
Sn3A66Ct		751A.C	ug/L	75.35C	7 .6502	75C1._
SNC235CR		7525.1	ug/L	73._ 1	7 .1 52	72A80_
Ti11C6Ct		75 6.5	ug/L	73.2A1	7 .2536	73683C
Tl36 ACt		73 3.	ug/L	7 ._2 2	7 ._3C2	73 0.
VC262CCt		75 6.5	ug/L	7 .A21_	7 .3_30	7A8C 3
Zn2 _2Ct		7C65.6	ug/L	71.56C	7 .02CA	7182C0
YC1_ CR		73C822_	9 cs/S	73 6.51	7 .0_66_	73C822_
YC22C1Ct		7318AA5	9 cs/S	733_.6_	7 .AC215	7318AA5
YC1_ Ct		72 6823	9 cs/S	70A6. 3	7 .1003C	72 6823

SN3616-004RS

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:C5:23PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		753. 6	ug/L	73. 06	72.332	-131.1
t l16_3CR	W	733C85	ug/L	73_A.3	7 .3C_A	76C8C5
t s3A63Ct		7333.1	ug/L	73. 36	7 .6353	7__.2
BC2 A6Ct		7C_ .0	ug/L	75.0C	73.2C_	7A26.A
BmC55CCR	W	728531	ug/L	70.3_0	7 .2A52	73328
Be131 CR		753._1	ug/L	7 .1 6_	7 .566_	72806A
9 m135ACR		732863	ug/L	71._66	7 . 2A_5	73186A
9 d22_5Ct		7213.3	ug/L	72.6 5	73.250	758A32
9 r 22A_Ct		7532.C	ug/L	7_. 00	73.3A_	71812_
9 N2_00Ct		726A.	ug/L	7 .63_1	7 .1 05	7585A2
9 u1201Ct		7130.6	ug/L	73.AA	7 .563C	7C831C
Fe2566CR	W	73C_8C	ug/L	7552.0	7 .100_	73668A
KC0__CCR	W	7C38 3	ug/L	720.35	7 . __2	722850
Li_0 0CR		7_13.5	ug/L	71. __	7 .CA5C	7C86AA
Mg2 25Ct	W	71A801	ug/L	7C25.3	73. 6A	7368_C
Mn250_CR	W	728131	ug/L	76.C06	7 .C 60	73668C3
Mr 2 2 Ct		766.	ug/L	73.35	73.3_3	7C63.1
, m5A65CR		7A82C	ug/L	720.12	7 .1135	7328AC
, i213_Ct		7520.C	ug/L	7C.1C_	7 .A2C3	7385AC
Pb22 1Ct		7313.3	ug/L	73.CC0	73.3 1	7230.2
Sb2 _ACt		711.6C	ug/L	7 .12A1	7 .6_03	726._0
Se36_ Ct		765. 6	ug/L	72.1A3	72.5 5	753.0C
Si253_CR		728A2C	ug/L	72.C	7 . AC66	73825
Sn3A66Ct		7C06.0	ug/L	75.A26	73.235	7C6_.5
SNC235CR		7510.C	ug/L	7 .5021	7 .3 _5	71 821
Ti11C6Ct	W	73 833	ug/L	763.C_	7 .6 C0	71A18C
Tl36 ACt		7A0.3	ug/L	73._55	73.6	7A2._C
VC262CCt		702 .2	ug/L	75.2_2	7 .01 0	73283
Zn2 _2Ct		701C.C	ug/L	7A.53A	73.3_	7C8620
YC1_ CR		73C8_35	9 cs/S	7A_.061	7 .561A0	73C8_35
YC22C1Ct		73C821	9 cs/S	733_.32	7 .A3_ 3	73C821
YC1_ Ct		723 80A	9 cs/S	721A.20	7 .331 C	723 80A

PBWNE21ICW1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 7732:5 :20PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

PBWNE21ICW1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:5 :20PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- ._C02	ug/L	7 .3606	71 .5A	-5 .36
t l16_3CR		7A.C2A	ug/L	71.5_3	7C2.25	-23.1A
t s3A63Ct		- .55AC	ug/L	7 .36_5	715.3A	-3.0A6
BC2 A6Ct		72.1A0	ug/L	7 .C2C0	730.06	7A.0C2
BmC55CCR		7 .3CAC	ug/L	7 .CC_A	71 3.2	7_5.3
Be131 CR		- . 1136	ug/L	7 . 2AC6	7A5.A2	-0.C22
9 m135ACR		-1.C30	ug/L	7 .0C1C	723.0_	-25.60
9 d22_5Ct		- . C561	ug/L	7 . C302	76. AC	-2.5A6
9 r 22A_Ct		- .1A C	ug/L	7 . 5_0A	73C.61	7A.20C
9 N2_00Ct		7 .1116	ug/L	7 .3_51	7C6.53	7_.05A
9 u1201Ct		7 .30CC	ug/L	7 .113_	736 .2	-_1. 1
Fe2566CR		73_._1	ug/L	72.6AC	730.6C	723.AC
KC0__CCR		-A_AC	ug/L	731.AA	7356.6	-3C ._
Li_0 0CR		7 .2_C3	ug/L	7 .C_63	7300._	710.63
Mg2 25Ct		76._62	ug/L	72.1A1	72C.56	-1._1C
Mn250_CR		- .321A	ug/L	7 . A620	702.3	73.0C_
Mr 2 2 Ct		7 .2_ 2	ug/L	7 . 61C6	715.61	73.023
, m5A65CR		73_.35	ug/L	73_.5C	73 2.5	-2A.60
, i213_Ct		7 . 2203	ug/L	7 .C_5C	728 C6	7 .5303
Pb22 1Ct		- .053C	ug/L	7 . 5_61	70.500	- .316
Sb2 _ACt		73.51A	ug/L	7 .C__1	71 .12	72.3 3
Se36_ Ct		- . A015	ug/L	7 ._165	7012.3	7C.11A
Si253_CR		730.33	ug/L	7_.162	710.15	716.12
Sn3A66Ct		7 .C163	ug/L	7 .31AC	713.52	72.1 _
SNC235CR		- . 0031	ug/L	7 .3ACA	7216._	-20.6
Ti11C6Ct		72.C 1	ug/L	7 .30A5	70.C2_	751._A
Tl36 ACt		- .6_1_	ug/L	7 .30 0	730.03	-3.0_0
VC262CCt		7 .3CA1	ug/L	7 . _535	7C1.61	-2.12
Zn2 _2Ct		73. C1	ug/L	7 . 56 3	75.__	70.2 3
YC1_ CR		73C8 65	9 cs/S	73C_.00	73. C3C	73C8 65
YC22C1Ct		73C832C	9 cs/S	7__.__A	7 .C02 2	73C832C
YC1_ Ct		723285_	9 cs/S	7_1 .1	7 .26_51	723285_

LCSWNE21ICW1

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:5C:C0PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		752.C0	ug/L	7 .66 0	73.AAA	738216
t l16_3CR		728220	ug/L	7C.650	7 .222_	7380CC
t s3A63Ct		73 _.	ug/L	7 .6515	7 .A662	7_A.AA
BC2 A6Ct		7526.	ug/L	73._1C	7 .1 A6	7612.C
BmC55CCR		72836C	ug/L	733.	7 .5 35	76C8 5
Be131 CR	F	75_.CC	ug/L	7 . 6A3C	7 .3016	7181_3
9 m135ACR		728002	ug/L	7 .3C11	7 . 5303	728A03
9 d22_5Ct		72__.5	ug/L	7 .1C3	7 .32A	7_81_5
9 r 22A_Ct		75CA.6	ug/L	73.25	7 .220A	71810A
9 N2_00Ct		723A_	ug/L	73.0_2	7 .A 56	7C8 56
9 u1201Ct		720_.	ug/L	73. 00	7 .16 2	718_C
Fe2566CR		738336	ug/L	735.66	73.C26	7380
KC0__CCR		7338 A	ug/L	731.03	7 .3210	7580_6
Li_0 0CR		75_2.5	ug/L	72.022	7 .CA16	7C820A
Mg2 25Ct		75812A	ug/L	73C.60	7 .2A3	728_02
Mn250_CR		7552.A	ug/L	73.2_6	7 .226_	7C800C
Mr 2 2 Ct		7333.6	ug/L	7 . 3161	7 . 32C_	75CC.3
, m5A65CR		7A8C1_	ug/L	72.1_	7 . 2060	7328_5
, i213_Ct		75C0.A	ug/L	72.16	7 .C1_1	738_25

LCSWNE21ICW1

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:5C:C0PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		73 _.0	ug/L	7 . 3016	7 . 3_1	73A5.
Sb2 _AOt		733 .2	ug/L	7 .A36C	7 .0C10	7A2.00
Se36_ Ot		73 5._	ug/L	7 .2265	7 .2301	75C.CA
Si253_OR		738321	ug/L	73.0_2	7 .350	7CA3.5
Sn3A66Ot		7516.3	ug/L	73.056	7 .12_2	75C_.C
SNC235OR		75_5._	ug/L	7 .21A6	7 . C22C	71 8_3
Ti11C6Ot		75C1.1	ug/L	72.A15	7 .5230	72 816
Tl36 AOt		73 A.	ug/L	7 ._1	7 .5A1C	733C.6
VO262COt		75C .5	ug/L	71.C62	7 ._C_3	7A86
Zn2 _2Ot		7520.C	ug/L	7 ._6C	7 .313_	718C__
YO1_ OR		73C8 _	9 cs/S	75C._C	7 .1AA_1	73C8 _
YO22C1Ot		7318610	9 cs/S	722.1 2	7 .3_ 1	7318610
YO1_ Ot		72 A863	9 cs/S	7383 ._	7 .52_A3	72 A863

PBT1629A

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7732:5A:56PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- .30C2	ug/L	7 .1156	7362.A	-1A.2_
t l16_3OR		71.0A1	ug/L	72.20	7_ . 3	-2C.62
t s3A63Ot		7 ._C5	ug/L	7 .3C__	722.01	- .6003
BO2 A6Ot		7C.A36	ug/L	7 .1630	7A.320	731.
BmC55COR		70.A60	ug/L	7 . 0650	73. A	7165._
Be131 OR		- . 1553	ug/L	7 . C053	73811A	-5.5C5
9 m135ACR		73_.53	ug/L	75.230	713._	-5. 06
9 d22_5Ot		- . A531	ug/L	7 . 3C52	730. _	-1.51C
9 r 22A_Ot		- .3_6C	ug/L	7 . 5C_1	712.25	76.513
9 N2_00Ot		7 .155A	ug/L	7 . A_32	72C.2	70.3_2
9 u1201Ot		7 ._ 06	ug/L	7 .C1C_	703.C6	-5_.66
Fe2566OR		731.6	ug/L	7 ._0 6	7C.A2_	73A35
KC0__COR		-35. 5	ug/L	71C.26	7220.A	-3C1.3
Li_0 0OR		72.0 0	ug/L	7 ._6A3	725.06	75_. 1
Mg2 25Ot		733.1	ug/L	7 .6510	7A.C10	-2.066
Mn250_OR		7 .5263	ug/L	7 .CA25	763.36	70. 0
Mr 2 2 Ot		7 .106	ug/L	7 .2 A6	755.32	72.26A
, m5A65OR		738656	ug/L	735.01	7 .A 20	728AA0
, i213_Ot		73.22_	ug/L	7 . ACC1	7_.AA0	7C.332
Pb22 1Ot		- ._C2	ug/L	7 ._A26	73 _.C	7 . 5165
Sb2 _AOt		7 .0200	ug/L	7 .3ACC	725.1C	73.C51
Se36_ Ot		7 .1C32	ug/L	7 .3 3	726.15	7C.520
Si253_OR		73.65	ug/L	7A.CA5	7C15.2	711. 6
Sn3A66Ot		7 .1013	ug/L	7 .2 3	751.AA	72.21
SNC235OR		7C.02C	ug/L	7 . 65 2	72. 33	7213.1
Ti11C6Ot		7 .A_13	ug/L	7 .3 2	733._3	-5.361
Tl36 AOt		-3. A	ug/L	7 .152C	71C.60	-3.A _
VO262COt		- . 660	ug/L	7 .23A1	723863	-C.A1A
Zn2 _2Ot		7C.3C1	ug/L	7 .331_	72.0C3	720.05
YO1_ OR		73C8 6	9 cs/S	7CA.A6C	7 .1C6 2	73C8 6
YO22C1Ot		73C8 _6	9 cs/S	733. 3	7 . 0A360	73C8 _6
YO1_ Ot		723282A	9 cs/S	738036.6	7 .A3 2	723282A

SN3848-001

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7773: 1:3APM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3848-001

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 77/3: 1:3APM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .66 1	ug/L	7 . 30 2	73.036	-51.C0
t l16_3CR		-3C1.0	ug/L	7C.011	71.26C	736 .A
t s3A63Ct		73.0C5	ug/L	7 . 6 01	75.2	- .222C
BC2 A6Ct		706. 0	ug/L	7 . A323	7 .3_55	7AC.6A
BmC55CCR		735A.6	ug/L	7 .353C	7 . 6525	7_8050
Be131 CR		- .33A	ug/L	7 . _2CC	752.61	-32.36
9 m135ACR	W	706A85	ug/L	7_8A10	73.102	753386
9 d22_5Ct		7 . 1652	ug/L	7 .33 1	7206.	- .C653
9 r 22A_Ct		- .250	ug/L	7 . C6A6	736.C3	7A.12C
9 N2_00Ct		7_.A63	ug/L	7 .20 3	71.62	7336.
9 u1201Ct		7_3.52	ug/L	7 .2AC3	7 .C_3A	70 _.0
Fe2566CR		72.C 6	ug/L	73. 6_	7C5.C6	71. 0_
KC0__CCR	W	72A8A5	ug/L	713.02	7 .33	73C866
Li_0 0CR		713.A0	ug/L	7 .031_	72.216	7203.A
Mg2 25Ct		7_C.15	ug/L	7 .2 C_	7 .13A	722.33
Mn250_CR		7 .205_	ug/L	7 .2A00	73 C.C	7C.613
Mr 2 2 Ct		723.6	ug/L	7 . 1_5C	7 .3__A	766.63
, m5A65CR	W	7CA8 3	ug/L	73C3.2	7 .26C2	7038 0
, i213_Ct		7 ._555	ug/L	7 .322C	73A._A	72._CC
Pb22 1Ct		75.601	ug/L	7 .ACA_	73C.23	73 .05
Sb2 _ACt		7 .5311	ug/L	7 .5211	73 2.	73.2 3
Se36_ Ct		-3.211	ug/L	7 .C_2C	710.5	71.C62
Si253_CR		703A_	ug/L	731.63	73.61_	7131.2
Sn3A66Ct		7 .A0 2	ug/L	7 .32_0	73C.5_	72.511
SNC235CR		7_15.2	ug/L	73.2 _	7 .3A6A	7118A1
Ti11C6Ct		73.A0	ug/L	7 .50A2	71 .61	71 .A6
Tl36 ACt		- ._6C1	ug/L	7 .263	7C3.6	-3.15_
VC262CCt		73.1CA	ug/L	7 .312	76.06_	73C.31
Zn2 _2Ct		76.606	ug/L	7 . 6A A	7 . 6A26	7_3.CA
YC1_ CR		7318A15	9 cs/S	73A.AA_	7 .31_53	7318A15
YC22C1Ct		7318 2	9 cs/S	723.6A6	7 .3_AA6	7318 2
YC1_ Ct		73618O_	9 cs/S	7112. 6	7 .30316	73618O_

SN3848-002

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 77/3: A:1 PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .61	ug/L	7 .2 5	723.5_	-52.16
t l16_3CR		-_ .5	ug/L	736._1	712.C5	72_6.0
t s3A63Ct		73.5_0	ug/L	7 .1633	72C.6_	- .1133
BC2 A6Ct		7_ .6_	ug/L	7 .321A	7 .2 1	73 C.3
BmC55CCR		73_6.A	ug/L	7 .265C	7 .3016	708213
Be131 CR		- .3_55	ug/L	7 . 3A 6	73 .61	-3C.66
9 m135ACR	F	753A8A	ug/L	7_83_1	73.3AA	75118A
9 d22_5Ct		- . 3_2A	ug/L	7 . 11C_	72 5.5	-3.01C
9 r 22A_Ct		- .22 6	ug/L	7 .3CC_	7_5.C5	7A.5 5
9 N2_00Ct		7_.ACA	ug/L	7 .31 1	73.6 1	7336.
9 u1201Ct		755.5A	ug/L	7 .1_A	7 .__2	7_1_.1
Fe2566CR		71.625	ug/L	7 . __	73._A2	75. C5
KC0__CCR	W	71 832	ug/L	71_.1C	7 .32 0	7358_6
Li_0 0CR		715.00	ug/L	7C.2C3	733.A_	71 3.2
Mg2 25Ct		706._A	ug/L	71.C0_	7C.1_2	726.32
Mn250_CR		7 .C6C_	ug/L	7 . 5C02	733. _	7_._06
Mr 2 2 Ct		721.2	ug/L	7 .33C_	7 .C6C	73 5.5
, m5A65CR	W	7C6860	ug/L	721A.A	7 .C006	70C832
, i213_Ct		7 .0335	ug/L	7 .5022	7A .C2	72.A35

SN3848-002

Medhr d7, my e: Ft ST-2 3_O, UCt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7773: A:1 PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		73.233	ug/L	73.2C5	73 2.A	71. 26
Sb2 _ACt		73._15	ug/L	73.2 A	701.A6	72. 3C
Se36_ Ct		- .C5_1	ug/L	7 .A213	73A .C	71.A21
Si253_CR		706_.5	ug/L	71.A_5	7 .CA51	71CC.C
Sn3A66Ct		7 .CA 6	ug/L	7 .2CC1	75 .A	72.356
SNC235CR		7_50.C	ug/L	72.50	7 .16 6	7158 A
Ti11C6Ct		72. 12	ug/L	7 . _035	71.1 C	71_.00
Tl36 ACt		- .62CC	ug/L	7 .0320	700.3	-3.50A
VC262CCt		73.A20	ug/L	7 .2 _1	733.26	723.CA
Zn2 _2Ct		7C.005	ug/L	7 . C50A	7 . 65A6	726.C2
YC1_ CR		7318A_2	9 cs/S	70.035	7 . 55_55	7318A_2
YC22C1Ct		7328600	9 cs/S	736.3 1	7 .3C023	7328600
YC1_ Ct		736C8AC	9 cs/S	7381C .5	7 ._AA 2	736C8AC

SN3857-001

Medhr d7, my e: Ft ST-2 3_O, UCt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7773:31:C2PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .5111	ug/L	7 .CA33	76 .23	-C5.A1
t l16_3CR		75.C35	ug/L	73 . 2	73A5.	75 .11
t s3A63Ct		73. 61	ug/L	73.C6	731_.1	- .__03
BC2 A6Ct		72C.12	ug/L	7 . 55A	7 .226C	7C0.3
BmC55CCR		71 .A1	ug/L	7 .3AC5	7 .56A5	73810A
Be131 CR		7 . 3 _	ug/L	7 .3 C	73 811	-5.2CC
9 m135ACR	W	73 68C	ug/L	72 .11	7 . 3A5A	733C83
9 d22_5Ct		7 .305A	ug/L	7 . A5C	7CA.5A	72.0_3
9 r 22A_Ct		7 . A621	ug/L	7 . _661	70.A10	73 .61
9 N2_00Ct		7 .6CA5	ug/L	7 .36A6	72 .60	730._6
9 u1201Ct		71.A52	ug/L	7 . 0 1	73.A25	-32.2C
Fe2566CR		7_1. 1	ug/L	7 .2035	7 .C1 A	7A2.0
KC0__CCR		718C05	ug/L	72C.	7 ._6 0	7380 3C
Li_0 0CR		7_.A_	ug/L	7 .612A	731._	7A0.C5
Mg2 25Ct		73825	ug/L	71.23A	7 .2501	7_ _.C
Mn250_CR		71_.C5	ug/L	7 .2261	7 ._26	7260._
Mr 2 2 Ct		735.55	ug/L	7 . C3_5	7 .2_0A	705.16
, m5A65CR	W	71 86C	ug/L	7A.12C	7 . 2_63	7C_8C6
, i213_Ct		73.125	ug/L	7 .12 2	72C.30	7C._1C
Pb22 1Ct		-3. __	ug/L	7 .5AA1	755.30	- ._6C2
Sb2 _ACt		- . CAA5	ug/L	7 .C22A	7A_5.C	7 .A12C
Se36_ Ct		- .6C__	ug/L	7 .6A56	73 C.3	71.A5
Si253_CR		71801C	ug/L	73 .0_	7 .2AA3	738530
Sn3A66Ct		7 .2C26	ug/L	7 . 1C1_	73.C3C	72. _
SNC235CR		75 0.6	ug/L	73.3 6	7 .23A1	7208C_
Ti11C6Ct		7 .6CA2	ug/L	7 ._ 15	7_1._5	-3.C02
Tl36 ACt		- .3201	ug/L	7 .2620	7226.6	- .AA06
VC262CCt		7 ._302	ug/L	7 .2 22	712.00	71.02_
Zn2 _2Ct		7263.3	ug/L	7 . A3_5	7 . 2A 5	738A6A
YC1_ CR		73C8 5	9 cs/S	731 .6C	7 .61365	73C8 5
YC22C1Ct		7318A30	9 cs/S	731.C53	7 . 60150	7318A30
YC1_ Ct		72 C8	9 cs/S	7_35.C	7 .1 3__	72 C8

SN3857-002

Medhr d7, my e: Ft ST-2 3_O, UCt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7773:30:50PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3857-002

Medhr d7, my e:	Ft ST-2 3_Q, UQt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 773:30:50PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		- .C_56	ug/L	7 .2332	7C5.12	-QC.22
t l16_3QR		-16.6A	ug/L	732.16	71 .66	732.2A
t s3A63Qt		7 .112_	ug/L	7 . C332	732.1_	-3.3_
BQ2 A6Qt		721.0_	ug/L	7 .C 2A	73._65	7C5.6
BmC55QQR		71 .23	ug/L	7 .3_	7 .526A	738150
Be131 QR		7 . _01C	ug/L	7 . 0 _3	73 C.6	-3.201
9 m135AQR	W	73 _81	ug/L	7260.A	7 .2A 1	733382
9 d22_5Qt		7 .3C 5	ug/L	7 . 231_	735.2	73.A_3
9 r 22A_Qt		7 .35_3	ug/L	7 .30A1	733C.2	733.2A
9 N2_00Qt		7 .650C	ug/L	7 .1606	7C3.5_	73A. 2
9 u1201Qt		71.0 A	ug/L	7 .A321	723.63	-3C.2A
Fe2566QR		731.16	ug/L	7 . 13C6	7 .2153	730._3
KQ0__QQR		718153	ug/L	72.25C	7 . _02A	738_55
Li_0 0QR		7_.1 A	ug/L	72.C 5	71A.32	7A1.53
Mg2 25Qt		738251	ug/L	733.56	7 .62CA	7_ C.6
Mn250_QR		720.A6	ug/L	7 . 015	7 .2_1_	7226.1
Mr 2 2 Qt		735.C	ug/L	7 .31_3	7 .AA15	70C.11
, m5A65QR		758_20	ug/L	731. C	7 .213A	7A8QC_
, i213_Qt		73.A02	ug/L	7 .225A	732. 0	7_.23C
Pb22 1Qt		-3.C51	ug/L	7 .C6A6	71C.1C	-3.1CC
Sb2 _AQt		7 .12_2	ug/L	7 .061	72C1.3	73.33_
Se36_ Qt		-3.0A_	ug/L	73. 6_	7_3.15	71.C1A
Si253_QR		718502	ug/L	75.A03	7 .3_CC	738C5A
Sn3A66Qt		7 .2620	ug/L	7 .3C51	706._C	72.3
SNC235QR		7CA6.A	ug/L	7 .1306	7 . _C63	72_85A
Ti11C6Qt		7 .30_	ug/L	7 .C6 _	720A.0	-1 .36
Tl36 AQt		- ._616	ug/L	7 .A233	733A.1	-3.C__
VQ262CQt		7 .130	ug/L	7 . 210_	70.C65	-3. A0
Zn2 _2Qt		7201.0	ug/L	72.2A6	7 .A1_3	73800_
YQ1_ QR		73C83 5	9 os/S	72 6. 1	73.CA2	73C83 5
YQ22C1Qt		7318052	9 os/S	75C.666	7 .1666C	7318052
YQ1_ Qt		72 _82C	9 os/S	730A.35	7 . A_106	72 _82C

SN3857-003

Medhr d7, my e:	Ft ST-2 3_Q, UQt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 773:22:31PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		- .1A05	ug/L	7 . 3_ 6	7C.351	-C1.C3
t l16_3QR		7_.202	ug/L	7C.125	7_A6_	75 .16
t s3A63Qt		7 .0201	ug/L	7 .C553	7_2.5A	- .6303
BQ2 A6Qt		72C.31	ug/L	7 .1_35	73.C6A	7C0.2C
BmC55QQR		71 . 0	ug/L	7 .33C1	7 .1A 2	738155
Be131 QR		- . A_0C	ug/L	7 . 1_03	7C2.12	-3 ._
9 m135AQR	W	73 A83	ug/L	7216.5	7 .2235	73318C
9 d22_5Qt		7 .2__A	ug/L	7 . 2 _A	70.052	7C.60C
9 r 22A_Qt		7 . 1C16	ug/L	7 .311C	71A0.A	73 .03
9 N2_00Qt		7 .0C2A	ug/L	7 . 1_A	7C.655	73C.1
9 u1201Qt		71.65A	ug/L	7 .35A5	7C. _	-33.3C
Fe2566QR		7_6.62	ug/L	71.351	7C.5 6	762.1C
KQ0__QQR		71821	ug/L	730.C6	7 .5C3_	7385 6C
Li_0 0QR		70.CC5	ug/L	7 .56A6	7A. C5	762.CA
Mg2 25Qt		738C1	ug/L	7A.5	7 ._A1_	7_ 6.1
Mn250_QR		710.5	ug/L	7 .13__	7 .ACC2	71 A.3
Mr 2 2 Qt		735.15	ug/L	7 . 652A	7 ._2 _	705.23
, m5A65QR		758006	ug/L	720.20	7 .C036	7A8_6A
, i213_Qt		73.01	ug/L	7 . 5 6C	7 .26C5	75.AA

SN3857-003

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:22:31PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		- ._C11	ug/L	7 . 20 5	7C.2 5	7 . 1236
Sb2 _AOt		7 .2AC	ug/L	7 . C1 6	735.30	73.3 C
Se36_ Ot		7 . 5C 3	ug/L	7 .0031	738C2A	7C.1_C
Si253_OR		718_C1	ug/L	73 .1_	7 .2AC1	738C6
Sn3A66Ot		- .2A03	ug/L	7 . __CC	721.3C	73.5C_
SNC235OR		75 .C	ug/L	7 .6352	7 .3A26	7208C
Ti11C6Ot		73.3_5	ug/L	7 . _112	75.C1C	7_._ C
Tl36 AOt		- .C63_	ug/L	7 . 2_16	75.1_A	-3.2A5
VO262COt		7 .266	ug/L	7 . 126	73.3	-3.C3_
Zn2 _2Ot		72_6.6	ug/L	7 .60 A	7 .156A	738000
YO1_ OR		73C83C2	9 os/S	715.6 2	7 .251A0	73C83C2
YO22C1Ot		73186_2	9 os/S	7A2.530	7 .563 2	73186_2
YO1_ Ot		72 A86A	9 os/S	73812.0	7 .5C2 2	72 A86A

CCV

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:2_:2APM	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		75 3.0	ug/L	73.AA5	7 .105A	7328C_
t l16_3OR		7318 2	ug/L	706.3_	7 .1005	73 800
t s3A63Ot		75 5.C	ug/L	72. _5	7 .C A5	7115.0
BO2 A6Ot		7531.1	ug/L	73.AA_	7 .1_05	7620.6
BmC55COR		753C.1	ug/L	73.63C	7 .1022	7228C
Be131 OR		7522.0	ug/L	72.CC3	7 .C_0	7138_3
9 m135AOR		73286_	ug/L	720._A	7 .231_	7318_6
9 d22_5Ot		75 A.1	ug/L	72.525	7 .C6_0	732825
9 r 22A_Ot		7530.C	ug/L	72.2C	7 .C126	7182 6
9 N2_00Ot		75 A.	ug/L	71.C_3	7 ._A31	768_22
9 u1201Ot		7535.	ug/L	7C.2_A	7 .A2A0	7_86AA
Fe2566OR		7328AC	ug/L	7C_.A3	7 .1_C0	7308 6
KC0__COR		73286C	ug/L	71 .1	7 .21C3	7_8A5C
Li_0 0OR		752 .A	ug/L	7C.5 0	7 .A_51	7C8 36
Mg2 25Ot		7328A5	ug/L	7C5. _	7 .15 _	7_8C5C
Mn250_OR		7530.A	ug/L	7 .A051	7 .3_6	7C82C0
Mr 2 2 Ot		752C.5	ug/L	71.16_	7 ._C0C	728503
, m5A65OR		7318 1	ug/L	716.0A	7 .1 52	7368A5
, i213_Ot		752 .1	ug/L	72.325	7 .C AC	7385_C
Pb22 1Ot		7532.0	ug/L	72.51	7 .C61_	7A63.5
Sb2 _AOt		7523.	ug/L	71.165	7 ._535	7C AC
Se36_ Ot		7C66.A	ug/L	71. C6	7 ._3	72C1.3
Si253_OR		731813	ug/L	700.50	7 .5A2A	758C 5
Sn3A66Ot		75 5.A	ug/L	72.100	7 .C0	753_.A
SNC235OR		7521.0	ug/L	7 .A523	7 .3_20	72A80C
Ti11C6Ot		75 1.5	ug/L	71. 3	7 .56_	736826
Tl36 AOt		753A.1	ug/L	72. 6_	7 .C C1	7551.2
VO262COt		75 _.C	ug/L	72. C3	7 .C 1	7A8C56
Zn2 _2Ot		75 1.6	ug/L	72.565	7 .535	71811_
YO1_ OR		73C825_	9 os/S	731.506	7 . 6525	73C825_
YO22C1Ot		73C8 CA	9 os/S	722.560	7 .3_ A5	73C8 CA
YO1_ Ot		7231830	9 os/S	712C._6	7 .35212	7231830

CCB

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:1 :15PM	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmte:	5/22/2 2 773:1 :15PM	Smy 4le7Tp4e:	Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- ._ 00	ug/L	7 .20 2	7CC.C0	-5 . _
t l16_3CR		76.ACA	ug/L	7C._35	7C_.A_	-2 .C3
t s3A63Ct		7 ._625	ug/L	7 .0212	73 C.C	- .6_60
BC2 A6Ct		7 .0_6C	ug/L	7 .36_A	725.5A	7_. 52
BmC55CCR		7 . _A11	ug/L	7 .2A31	7C33.0	7_2.13
Be131 CR		7 . 0331	ug/L	7 . _ 5A	7A5.30	-3. 65
9 m135ACR		-5.0AC	ug/L	7 .C100	70.5_A	-2A_6
9 d22_5Ct		- . 3111	ug/L	7 . 3 02	7A. C2	-3.A5C
9 r 22A_Ct		- . 1_C6	ug/L	7 . C _6	7333.5	73 ._
9 N2_00Ct		7 . 6CA2	ug/L	7 .32__	7311.5	72.206
9 u1201Ct		7 .2CCC	ug/L	7 ._50A	72_6.2	-_1.1
Fe2566CR		7_._C6	ug/L	7 .C 2	7_. 2	7A.061
KC0__CCR		7 .22 6	ug/L	731.20	7_8 A	-310.
Li_0 0CR		73. 5C	ug/L	73.C00	73C .3	7CC.25
Mg2 25Ct		- .5002	ug/L	7 .0C21	732A_	-A.6C1
Mn250_CR		- .116_	ug/L	7 . 6036	72A_2	7 . 23 0
Mr 2 2 Ct		73._ 2	ug/L	7 .2A 0	730.51	7A.5 A
, m5A65CR		7 .6506	ug/L	721.A0	728062	-52.2
, i213_Ct		7 .2 1	ug/L	7 . 1C C	73_.66	73. 6A
Pb22 1Ct		- .0 CA	ug/L	7 .26CC	7C3.0_	- . _1 3
Sb2 _ACt		7 .62 3	ug/L	7 .1 52	711.30	73._C0
Se36_ Ct		73. 6_	ug/L	73. __	760.2_	75. 3
Si253_CR		730. 3	ug/L	730. C	73 .2	716._1
Sn3A66Ct		- .213A	ug/L	7 .20C1	733A.C	73._5C
SNC235CR		- . 2205	ug/L	7 .CC_3	7386_3	-25.23
Ti11C6Ct		7 .22 2	ug/L	7 . A 25	71_.CC	-1 .C1
Tl36 ACt		- .CA2A	ug/L	7 .5_50	7330.2	-3.20_
VC262CCt		7 .331	ug/L	7 .3 __	76C.1_	-1.3 C
Zn2 _2Ct		7 . 26C_	ug/L	7 . CC__	73853_	7 .2A3C
YC1_ CR		73C823A	9 cs/S	733.C25	7 . A 155	73C823A
YC22C1Ct		73C8C3_	9 cs/S	7A0.5_1	7 ._ 016	73C8C3_
YC1_ Ct		72308 A	9 cs/S	7286 2.A	73.1102	72308 A

SN3857-004

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmte:	5/22/2 2 773:1C5CPM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .2__6	ug/L	7 .32 3	7C5.	-16.5_
t l16_3CR		-26.A1	ug/L	730.1C	75A32	72 .33
t s3A63Ct		7 .663C	ug/L	7 ._CC3	7_C.60	- .0256
BC2 A6Ct		72C.C5	ug/L	7 .C533	73.AC5	7C_.6A
BmC55CCR		71 .53	ug/L	7 .CC36	73.CC6	7381A2
Be131 CR		7 . 5_33	ug/L	7 .3 A_	7361.5	-2. 32
9 m135ACR	W	73 58A	ug/L	7C 5.3	7 .1A26	733380
9 d22_5Ct		7 .305C	ug/L	7 . 3C2_	7A.31	72._0_
9 r 22A_Ct		7 . 0 35	ug/L	7 . C03	7_0.3C	73 .02
9 N2_00Ct		7 .02CA	ug/L	7 . CC 3	7_. 02	731.A1
9 u1201Ct		7C.260	ug/L	7 .2026	7_.152	-_.5 _
Fe2566CR		735.53	ug/L	72.A02	73A.53	72 ._
KC0__CCR		718156	ug/L	71 .33	7 .A6_C	738_0C
Li_0 0CR		71.022	ug/L	73.22	712.00	7_C._A
Mg2 25Ct		7382_A	ug/L	7_.0AA	7 .5152	7_3 .C
Mn250_CR		72A.5	ug/L	7 .3C1	7 .5 3_	721_.1
Mr 2 2 Ct		73_.2	ug/L	7 .3612	73.362	700.61
, m5A65CR		758062	ug/L	73.C_	7 . 252	7A8002
, i213_Ct		73._2C	ug/L	7 .3 _	7_.52C	75.CAA

SN3857-004

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 773:1C:5CPM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.366	ug/L	7 .C1_C	71_.16	- .6 6C
Sb2 _ACt		73. A2	ug/L	7 .C0_6	7CC. _	73._65
Se36_ Ct		-3.2 _	ug/L	7 .C63	7C .02	71._60
Si253_CR		7185_1	ug/L	72.C52	7 . _AA1	738C_0
Sn3A66Ct		- .2536	ug/L	7 ._036	72__.0	73.552
SNC235CR		7CA6.	ug/L	7 .66A6	7 .2 C1	72_80A
Ti11C6Ct		- . _156	ug/L	7 . 3205	72 . 5	-16.21
Tl36 ACt		- .0C _	ug/L	7 . 0_13	73 .1	-3.53
VC262CCt		7 .2 C0	ug/L	7 .36_3	765.A2	-1. 5
Zn2 _2Ct		72_1.0	ug/L	73.5A_	7 ._ 35	7380 _
YC1_ CR		73C821	9cs/S	73 .35	7 .0 1A3	73C821
YC22C1Ct		731803	9cs/S	726.A3C	7 .230C0	731803
YC1_ Ct		72 083A	9cs/S	7_A1.A1	7 .11 0	72 083A

SN3857-005

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 773:16: 6PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .505	ug/L	7 . 3332	73.61C	-CA. A
t l16_3CR		75A.12	ug/L	72_.2C	7C5.	76_.__
t s3A63Ct		7 .C3__	ug/L	7 .A11A	72 .3	-3.32A
BC2 A6Ct		72C.02	ug/L	7 .361C	7 .0A22	7CA.2A
BmC55CCR		72 .C6	ug/L	7 .360A	7 .6_52	76C5.5
Be131 CR		- . 1C0	ug/L	7 . A13A	7216.0	-0.55C
9m135ACR	W	733C8A	ug/L	7620.C	7 .A 00	73238
9d22_5Ct		7 . 5A05	ug/L	7 . C60	7 .AC5_	7 . 05_5
9r22A_Ct		- .131_	ug/L	7 . 0 02	722.55	7A._2C
9N2_00Ct		7 .6110	ug/L	7 .2 65	722.CC	730.56
9u1201Ct		73.32	ug/L	7 . 222A	73.6A6	-CA._5
Fe2566CR		731A.C	ug/L	7 . _52_	7 . C030	73A1.5
KC0__CCR		718 62	ug/L	710.22	73.2 C	73852_
Li_0 0CR		73._C_	ug/L	7 .51_A	712._3	7CA._A
Mg2 25Ct		738063	ug/L	71 .23	73._A_	7AA1.6
Mn250_CR		733.C6	ug/L	7 . 2 3	7 .30C2	760.
Mr2 2 Ct		733.13	ug/L	7 .231_	73.AAA	755.02
, m5A65CR		73 8A1	ug/L	765.06	7 .AACA	73_8C3
, i213_Ct		7 .A6A1	ug/L	7 .35C1	730.30	71.113
Pb22 1Ct		-3.3A	ug/L	7 . A315	7_.A65	- .6 36
Sb2 _ACt		- ._ 35	ug/L	7 .53_2	7A5.A3	7 .C 11
Se36_ Ct		7 .02A5	ug/L	7 .0633	73 A_	7C._62
Si253_CR		7C8C_C	ug/L	7C6.01	73.33C	738A2_
Sn3A66Ct		7 .1AA1	ug/L	7 .5C2	7316._	72.211
SNC235CR		7516.A	ug/L	7C.163	7 .A315	72680C6
Ti11C6Ct		71.1 1	ug/L	7 .3A 5	75.C_5	7A5.A1
Tl36 ACt		- .5A_A	ug/L	7 . 2035	7C._2_	-3.1_5
VC262CCt		7 .011	ug/L	7 . _500	7A.601	7_.220
Zn2 _2Ct		73.31	ug/L	7 .3_21	73C.1_	70.03
YC1_ CR		73C8360	9cs/S	760.__3	7 ._A0A6	73C8360
YC22C1Ct		73C8 _	9cs/S	7350.A0	73.3203	73C8 _
YC1_ Ct		72 _811	9cs/S	728 A2.6	73. 65	72 _811

SN3857-006

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 773:C1:25PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3857-006

Medhr d7, my e: Ft ST-2 3_Q, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 773:C1:25PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .11 1	ug/L	7 .3A33	75C.AC	-C3.1C
t l16_3CR		-2 .66	ug/L	731._1	7_C.61	726._
t s3A63Ct		7 .CC13	ug/L	7 .512_	732 .2	-3. 6_
BC2 A6Ct		72C._	ug/L	7 . C2A5	7 .30C2	7C0.53
BmC55CCR		736.C5	ug/L	7 .2CAC	73.200	7A60.2
Be131 CR		7 . 256A	ug/L	7 . A3C2	7131.C	-1.06
9 m135ACR	W	73 680	ug/L	7361._	7 .30_5	733588
9 d22_5Ct		7 . 650A	ug/L	7 . 21C5	72C.CA	7 .A1C_
9 r 22A_Ct		- .353A	ug/L	7 . A_51	75_.6A	76.C06
9 N2_00Ct		73. A	ug/L	7 .33CA	733.16	736. C
9 u1201Ct		73.1_	ug/L	7 .A322	756.01	-C5.0
Fe2566CR		713.25	ug/L	71.02A	733.61	7C3.25
KC0__CCR		7286C2	ug/L	7 .3A51	7 . _26A	738CC
Li_0 0CR		7 .A2C1	ug/L	73.55_	73AA.A	7C2.2_
Mg2 25Ct		7380CA	ug/L	75._15	7 .1221	7A52._
Mn250_CR		733.3_	ug/L	7 .16_C	71.552	76C.
Mr 2 2 Ct		73 .A0	ug/L	7 . 2_15	7 .2C2C	752.6C
, m5A65CR		73 836	ug/L	72A.0	7 .2A3_	735816
, i213_Ct		7 .5_A0	ug/L	7 . 60CA	730.3C	72.120
Pb22 1Ct		-3.2	ug/L	7 .C50C	71A.3	- .63_
Sb2 _ACt		7 .5C36	ug/L	73.166	725A.2	73.2AA
Se36_ Ct		7 .__0C	ug/L	73.5C6	7212.3	7C._33
Si253_CR		7C8 C	ug/L	75.3CA	7 .320C	738_5
Sn3A66Ct		7 . 5_3A	ug/L	7 .1501	7_81_	73.A20
SNC235CR		7531.5	ug/L	73. C1	7 .2 1	72086_
Ti11C6Ct		7 .20A3	ug/L	7 .33C5	7C3.3_	-2_._0
Tl36 ACt		-3.533	ug/L	7 . 5C1C	71.56_	-2.13_
VC262CCt		7 .0 6A	ug/L	7 .123C	7C5.2A	75.AC_
Zn2 _2Ct		73.22A	ug/L	7 .32C3	73 .3	7A.2_6
YC1_ CR		73C83C0	9 cs/S	7_2.A3A	7 .CCC 1	73C83C0
YC22C1Ct		7318AC_	9 cs/S	732.0 1	7 . 630CC	7318AC_
YC1_ Ct		72 0800	9 cs/S	7A5_. 3	7 .C3256	72 0800

SN3857-007

Medhr d7, my e: Ft ST-2 3_Q, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 773:C0:C3PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- . A0__	ug/L	7 .321	73C .1	-15.20
t l16_3CR		70.A01	ug/L	73C.A	73AA.	72C.3A
t s3A63Ct		7 ._A2	ug/L	7 .3AA6	720.0	- .6211
BC2 A6Ct		73_.6	ug/L	7 . 0 50	7 .C30_	711.1A
BmC55CCR		7A_5	ug/L	7 .3 5_	73.22	7C1_.3
Be131 CR		7 . 2026	ug/L	7 . _50C	72C. 6	-1.051
9 m135ACR	W	7_080	ug/L	753 .2	7 .0510	703800
9 d22_5Ct		- . 333_	ug/L	7 . _5__	75AA.C	-3._A6
9 r 22A_Ct		- . AAC6	ug/L	7 .31 5	73C0.5	76.03C
9 N2_00Ct		7 .A5A0	ug/L	7 . C61A	75.053	73_.2_
9 u1201Ct		7 .6C3C	ug/L	7 .30C	73A.CA	-53.23
Fe2566CR		736.15	ug/L	73.3_C	7_. 3_	725.A
KC0__CCR		72_C.2	ug/L	7C._A5	73.001	75.23
Li_0 0CR		71._6_	ug/L	71. 2A	7A3.62	7_C.A1
Mg2 25Ct		7_C .5	ug/L	73._60	7 .2_C6	71 2.5
Mn250_CR		71.256	ug/L	7 .C60_	735.20	726.0
Mr 2 2 Ct		7C. 2A	ug/L	7 .3150	71.10	736.56
, m5A65CR		758516	ug/L	736. C	7 .1C10	7A8C2
, i213_Ct		7 .3032	ug/L	7 . C_ _	72_.63	73. 2

SN3857-007

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:C0:C3PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.535	ug/L	7 ._A1	7C5. 6	-3.C26
Sb2 _ACt		7 .055A	ug/L	7 .35_	72 ._5	73.C13
Se36_ Ct		72.105	ug/L	73.215	752.	75.113
Si253_CR		718 63	ug/L	730.__	7 .5031	7382A2
Sn3A66Ct		7 .C2_0	ug/L	7 .23A1	753.3_	72.235
SNC235CR		713A.5	ug/L	73.551	7 .CA0C	73085
Ti11C6Ct		- . 6 _6	ug/L	7 . _52C	7036.C	-10.53
Tl36 ACt		- .222A	ug/L	7 .25C6	733C.C	- .616A
VC262CCt		7 . 06 3	ug/L	7 .35A2	72 .2	-1.A2A
Zn2 _2Ct		72.C23	ug/L	7 . 20 6	73.336	735.A2
YC1_ CR		73C82A_	9 cs/S	7352.51	73. _00	73C82A_
YC22C1Ct		7318_16	9 cs/S	73C.6_	7 .3 6_6	7318_16
YC1_ Ct		72 081C	9 cs/S	718 10.5	73.C_5	72 081C

SN3857-007L

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:53:5APM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		-1._1_	ug/L	7 . 6013	7 .2_0_	-52._3
t l16_3CR		720. C	ug/L	7A6.36	7126.A	-3C.C0
t s3A63Ct		-2.16_	ug/L	73.C56	7_ .6	-3.056
BC2 A6Ct		730.16	ug/L	7 .303	7 .6A12	73 .AC
BmC55CCR		76.C2C	ug/L	7 .0C2_	70.AA	73C3.5
Be131 CR		- . _ C2	ug/L	7 .1C A	75_C.2	-_.330
9 m135ACR		70 832	ug/L	73C_.6	7 .2 65	73C8A1
9 d22_5Ct		- .2561	ug/L	7 . 5655	722.60	-2.0AA
9 r 22A_Ct		-3.C53	ug/L	7 . 1 60	72.31C	7A.620
9 N2_00Ct		73.36	ug/L	7 .622	700.C6	75. 1
9 u1201Ct		72.532	ug/L	73.5_1	7_2.22	-56.3C
Fe2566CR		72A.35	ug/L	732.3A	7C1.2_	70.C03
KC0__CCR		7126.	ug/L	732.66	71.65	-3 2.
Li_0 0CR		-5.210	ug/L	7A.21C	7350.2	72A.1
Mg2 25Ct		7_C1.	ug/L	7 .3162	7 . 23_5	75_.A0
Mn250_CR		73.225	ug/L	73.50_	732A_	7C.A1C
Mr 2 2 Ct		7C.12_	ug/L	7 .2_	7_. 6	7C.0_0
, m5A65CR		758_2	ug/L	750.20	73. 36	738__1
, i213_Ct		7 .6_C1	ug/L	7 .252C	72_.3A	73. 52
Pb22 1Ct		-_.203	ug/L	73.255	72 . 2	-3. 1C
Sb2 _ACt		- .30AA	ug/L	72.36A	738226	7 .A__3
Se36_ Ct		7 .11A3	ug/L	73.210	71__.	7C.C0C
Si253_CR		718 12	ug/L	7C .15	73.113	7200._
Sn3A66Ct		73._1	ug/L	73.2 3	701._6	72.223
SNC235CR		7120.5	ug/L	73._21	7 .C655	718505
Ti11C6Ct		- .C_22	ug/L	7 .31 A	72A.26	-C2.36
Tl36 ACt		-3.1A1	ug/L	7 .__5	7CA. 6	-3. C2
VC262CCt		7 .5C5	ug/L	7 .2 2C	710.3C	-1. 60
Zn2 _2Ct		71.C51	ug/L	7 ._050	736.50	7C.62C
YC1_ CR		73C82_0	9 cs/S	706.C53	7 .1C__3	73C82_0
YC22C1Ct		73C8130	9 cs/S	725.102	7 .30022	73C8130
YC1_ Ct		723C8A1	9 cs/S	7251.66	7 .33A21	723C8A1

SN3857-007A

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 773:5_:23PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3857-007A

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmue:	5/22/2 2 773:5_:23PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73 5.0	ug/L	73.C05	73.165	7280C6C
t l16_3CR		73 8A0	ug/L	716.A0	7 .1__0	7A8_A1
t s3A63Ct		700C.2	ug/L	72.31	7 .CC63	713_.1
BC2 A6Ct		75 A.1	ug/L	71. A2	7 ._ _C	7623.0
BmC55CCR		7531.A	ug/L	73._C_	7 .12 1	722832
Be131 CR		7511.A	ug/L	7 .2_C5	7 . C655	713863
9 m135ACR	W	701855	ug/L	762.63	7 .32_1	70_863
9 d22_5Ct		7CA3.5	ug/L	72.6A0	7 ._2 C	7338_C
9 r 22A_Ct		7065._	ug/L	72.A_0	7 .50A5	718 A5
9 N2_00Ct		75 C.5	ug/L	70.A A	73.5CA	7681
9 u1201Ct		75 0.C	ug/L	76.2A_	73.A1	7_80 3
Fe2566CR		758_05	ug/L	72 ._1	7 .1_15	708003
KC0__CCR		73 853	ug/L	700.3	7 .0115	75800_
Li_0 0CR		7526.1	ug/L	73.1CC	7 .25C	7C8 1_
Mg2 25Ct		758A_C	ug/L	7C_.13	7 .0A6A	72860
Mn250_CR		7533.A	ug/L	7 .3_22	7 . 13_6	7C83C6
Mr 2 2 Ct		7535.1	ug/L	73.C0C	7 .2A_3	72851C
, m5A65CR		73382A	ug/L	733.52	7 .3 23	73_860
, i213_Ct		7061.	ug/L	72._	7 .5201	738CAA
Pb22 1Ct		7CAC.5	ug/L	71.A_	7 .06_0	7AC5.1
Sb2 _ACt		7065.0	ug/L	71.1_A	7 ._06C	71A6._
Se36_ Ct		7CA3.C	ug/L	71.3 5	7 ._C53	7215.3
Si253_CR		718C_	ug/L	721.21	7 ._032	738C35
Sn3A66Ct		7061.1	ug/L	7C. C2	7 .A365	75 5.0
SNC235CR		7A1A.	ug/L	7 .C200	7 . 53 1	7C58C_
Ti11C6Ct		75 5.5	ug/L	7A.A6_	73.0_	73A8A5
Tl36 ACt		7CA6.C	ug/L	71.5C3	7 .021_	7521.6
VC262CCt		75 C.1	ug/L	76.31C	73.A33	7A836_
Zn2 _2Ct		7CA .C	ug/L	71.211	7 ._026	718363
YC1_ CR		73C8 63	9 cs/S	730_.6C	73.2550	73C8 63
YC22C1Ct		73C8 65	9 cs/S	7A2.6A3	7 .5AA0C	73C8 65
YC1_ Ct		72 08CA	9 cs/S	728AA0.2	73.1635	72 08CA

SN3857-007S

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmue:	5/22/2 2 772: :1 PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		752.__	ug/L	7 .0_A2	73.C56	7382C6
t l16_3CR		728236	ug/L	750.25	72.506	738A35
t s3A63Ct		73 0.	ug/L	7 .25A_	7 .2C3A	7_6._0
BC2 A6Ct		75C1.0	ug/L	73.336	7 .2 5A	76_ .0
BmC55CCR	W	728363	ug/L	72A.01	73.133	7658C
Be131 CR		75_.5	ug/L	7 ._15A	73.325	718C30
9 m135ACR	W	705830	ug/L	7625.0	73.213	7068_5
9 d22_5Ct		725A._	ug/L	7 .1 16	7 .3305	7_836C
9 r 22A_Ct		7516.	ug/L	7 .25 6	7 . C_55	71812_
9 N2_00Ct		723_._	ug/L	7 .551	7 .255C	7C8 16
9 u1201Ct		7201.1	ug/L	7 .A0 5	7 .13A5	718_2
Fe2566CR		738336	ug/L	736.05	73.0_5	738C61
KC0__CCR		733826	ug/L	736.12	7 .3032	7586_6
Li_0 0CR		7550.	ug/L	7A. 20	73.CC3	7C81 2
Mg2 25Ct		758_03	ug/L	732.6C	7 .22A3	728AC6
Mn250_CR		75C6.5	ug/L	7A.322	73.C0A	7C8530
Mr 2 2 Ct		7335.A	ug/L	7 .C5A2	7 .165_	75_C.6
, m5A65CR		73C82	ug/L	7336.	7 .A1AC	7238_5
, i213_Ct		7516.	ug/L	73.0	7 .135C	738_ C

SN3857-007S

Medhr d7, my e: Ft ST-2 3_Q, UQt a	Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772: :1 PM	Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Qt		73 2.0	ug/L	7 .2CC1	7 .21A	730A.5
Sb2 _AQt		733 .1	ug/L	73.33	73. _	7A1.36
Se36_ Qt		73 5.A	ug/L	7 .11C5	7 .13_3	75C.03
Si253_QR		7C806	ug/L	71.02_	7 . A26A	738AC6
Sn3A66Qt		752_.	ug/L	7 .6 10	7 .303A	751C.5
SNC235QR		7A6C.A	ug/L	76._1A	73. 00	7C6836
Ti11C6Qt		751_.5	ug/L	7 .CA2	7 . A6A1	72 822
Tl36 AQt		73 C.	ug/L	7 . _2 C	7 . 56_1	733 .6
VQ262CQt		75C3.3	ug/L	7 .3_5_	7 . 1 _	7A865
Zn2 _2Qt		752 .A	ug/L	7 .2_2C	7 . 5 16	718C12
YQ1_ QR		73C8206	9 os/S	7CC.3__	7 .1 61	73C8206
YQ22C1Qt		731860C	9 os/S	71 ._A3	7 .2365_	731860C
YQ1_ Qt		72 68A_	9 os/S	72 .C2	7 . 601	72 68A_

SN3857-007P

Medhr d7, my e: Ft ST-2 3_Q, UQt a	Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772: C:C1PM	Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		7C6.0_	ug/L	73.32_	72.2_1	73830_
t l16_3QR		728 63	ug/L	72_.56	73.202	738_6C
t s3A63Qt		73 2.1	ug/L	7 .0AC1	7 .0__C	7_0.2_
BQ2 A6Qt		7523.2	ug/L	71.560	7 ._6	761 .1
BmC55CQR	W	728 03	ug/L	720.A0	73.1C_	7A681A
Be131 QR		752.00	ug/L	7 .20_0	7 .52C1	7183_1
9 m135AQR	W	702825	ug/L	76 A.6	73.25A	7058A6
9 d22_5Qt		72C0.A	ug/L	7 .A5C0	7 .1C06	758662
9 r 22A_Qt		75 _._	ug/L	73.623	7 .1062	718350
9 N2_00Qt		72 _.3	ug/L	75.A_0	72.AC_	718A15
9 u1201Qt		7256.5	ug/L	75.500	72.3C6	718C2_
Fe2566QR		738 03	ug/L	73_.CA	73.516	738C30
KQ0__CQR		73 80_	ug/L	735_.2	73.C52	758_1C
Li_0 0QR		7512.1	ug/L	72.223	7 .C30C	7C8 00
Mg2 25Qt		758C5	ug/L	722. _	7 .C CA	7280_C
Mn250_QR		753_.0	ug/L	70.0C_	73.C66	7C823
Mr 2 2 Qt		733 .3	ug/L	7 .5C 2	7 .C6 5	75C2.1
, m5A65QR		7318_0	ug/L	732 .0	7 .AA13	72 8__
, i213_Qt		75 0.C	ug/L	71.2 3	7 ._1 6	73852C
Pb22 1Qt		76A_C	ug/L	7 .56_6	7 ._ 53	7301.1
Sb2 _AQt		73 1.0	ug/L	7 .C05_	7 .C5AA	70A.65
Se36_ Qt		73 3.A	ug/L	72.23A	72.30A	751.1C
Si253_QR		7C81 A	ug/L	721.1	7 .5C 6	7380_
Sn3A66Qt		75 C.C	ug/L	73._02	7 .113C	7530.0
SNC235QR		7A5_.6	ug/L	73 .2	73.36	7C_80
Ti11C6Qt		7536.C	ug/L	735.22	72.61	736851
Tl36 AQt		766._	ug/L	7 .CC6C	7 .C532	73 0.2
VQ262CQt		7535._	ug/L	735.56	71. 21	7A85 A
Zn2 _2Qt		7CAA.6	ug/L	73.C65	7 .1 5A	718251
YQ1_ QR		73C8355	9 os/S	72 .621	7 .3C0A3	73C8355
YQ22C1Qt		73C8332	9 os/S	7C3.665	7 .26056	73C8332
YQ1_ Qt		72 68C3	9 os/S	718A5C.3	73.AC 5	72 68C3

SN3857-008

Medhr d7, my e: Ft ST-2 3_Q, UQt a	Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772: A:5CPM	Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3857-008

Medhr d7, my e: Ft ST-2 3_Q UCt a | Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 772: A:5CPM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .C C5	ug/L	7 .0210	730A.6	-C1.2C
t l16_3CR		-36.C0	ug/L	7_._C5	71C.31	7C._C_
t s3A63Ct		7 .CA0C	ug/L	7 .51C6	73 6.0	-3. _0
BC2 A6Ct		730.10	ug/L	7 .C0 1	72.0 A	71C.A1
BmC55CCR		7A.6_C	ug/L	7 .1662	7C.C5C	7CC1._
Be131 CR		- . A21_	ug/L	7 . 1562	7C1._3	-3 .21
9 m135ACR	W	703815	ug/L	7336.6	7 .3_A3	70C85A
9 d22_5Ct		- . 5_5	ug/L	7 . 52__	76813C	-3.CA6
9 r 22A_Ct		- .126_	ug/L	7 .2555	700.51	7A.C3_
9 N2_00Ct		7 .6_C_	ug/L	7 .2633	71 .3A	73A.10
9 u1201Ct		73.352	ug/L	7 . 50 0	7C.652	-CA.00
Fe2566CR		7C.C36	ug/L	7 .0C2A	73_.A3	75.000
KC0__CCR		725_.3	ug/L	732. 2	7C._62	7 .A_06
Li_0 0CR		72.30_	ug/L	7 .32A0	75.631	752.12
Mg2 25Ct		7_C2.3	ug/L	75._62	7 .AA_C	71 A6
Mn250_CR		71.23	ug/L	7 . _055	72.3 C	72A.62
Mr 2 2 Ct		7C.___	ug/L	7 .3C10	71. A	721. C
, m5A65CR		758_6A	ug/L	725.1C	7 .CCC0	7A85C1
, i213_Ct		7 .1_33	ug/L	7 . 6C23	72_. 6	73.560
Pb22 1Ct		- .03AC	ug/L	7 .21A3	711.3C	- . A226
Sb2 _ACt		7 . _5C3	ug/L	7 .5205	7A _.1	7 .6230
Se36_ Ct		-3.5 2	ug/L	7 .2115	735.55	71._
Si253_CR		718206	ug/L	73C.C	7 .C161	738116
Sn3A66Ct		7 .2666	ug/L	7 .22C6	70C.60	72.326
SNC235CR		7115.1	ug/L	7 .2021	7 . A32	73A830
Ti11C6Ct		- . A23	ug/L	7 . CC65	75.C05	-C .51
Tl36 ACt		- .65AC	ug/L	7 .130	711. A	-3.012
VC262CCt		7 .5121	ug/L	7 .3A1	71C.10	71.5__
Zn2 _2Ct		73.553	ug/L	7 . 5 0	71.2_A	73 .C3
YC1_ CR		73C8 AA	9 cs/S	7 .35255	7 . 3 A1	73C8 AA
YC22C1Ct		7318A6	9 cs/S	7A_.6AA	7 ._2_26	7318A6
YC1_ Ct		72 A8A1	9 cs/S	738C _.	7 ._012C	72 A8A1

SN3857-008L

Medhr d7, my e: Ft ST-2 3_Q UCt a | Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 772:31:33PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		-2. C3	ug/L	73.A51	76 .A3	-C5.12
t l16_3CR		7C3.11	ug/L	7C6._5	732 .3	-32.A0
t s3A63Ct		-5.2C3	ug/L	7 . AC3A	73._ _	-2.35A
BC2 A6Ct		730.6	ug/L	73.1C2	70.C66	733. A
BmC55CCR		7A.250	ug/L	7 .1 A_	71.010	7315.1
Be131 CR		- .2122	ug/L	7 .3352	7C6._	-A.C55
9 m135ACR		7_A821	ug/L	71C5.1	7 .5 _3	73C8A_
9 d22_5Ct		- .3 02	ug/L	7 .3CAC	731A.C	-2. 5C
9 r 22A_Ct		-3.3 _	ug/L	7 .1_66	711.C1	76.C 6
9 N2_00Ct		73._21	ug/L	7 .1522	723.03	7_.0A2
9 u1201Ct		71. C2	ug/L	7 .C25A	73C.	-5A.05
Fe2566CR		733.02	ug/L	7_.351	752.5	71.3A0
KC0__CCR		7C16.0	ug/L	735C.1	715. 6	-62.A1
Li_0 0CR		73 .66	ug/L	732.3	733 .3	75C._0
Mg2 25Ct		7_16.	ug/L	7C.C2_	7 ._62_	75_.0_
Mn250_CR		72.502	ug/L	73.__	7_C.51	70.2__
Mr 2 2 Ct		7C._A_	ug/L	7 ._A_C	73C._5	75.355
, m5A65CR		758C11	ug/L	7C0.C0	7 .A01A	738_5C
, i213_Ct		73.36	ug/L	73.301	76A._1	73.366

SN3857-008L

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:31:33PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-1.160	ug/L	72. 6_	7_3.03	- . 32_0
Sb2 _ACt		71.CA1	ug/L	72.C5_	70 .5C	73.C_2
Se36_ Ct		72.5CA	ug/L	7 .C051	73A_5	7C.031
Si253_CR		718 1	ug/L	73 2.6	71.C20	72A1.5
Sn3A66Ct		7 .C552	ug/L	73.101	71 3.5	73.6A_
SNC235CR		712 .C	ug/L	7 ._C1A	7 .2 3	718_ 2
Ti11C6Ct		7 .31_3	ug/L	7 .0AC_	750_._	-1A.20
Tl36 ACt		-1.03_	ug/L	73.15A	71_.5_	-3.55A
VC262CCt		- .21_A	ug/L	7 .01C	713 .	-5.A0
Zn2 _2Ct		72.6_A	ug/L	7 .3 60	71._6_	7C.2A6
YC1_ CR		73C8_65	9 cs/S	73CC.65	7 .6A_C	73C8_65
YC22C1Ct		73C816	9 cs/S	700._C0	7 .51656	73C816
YC1_ Ct		723A8A_	9 cs/S	751.0C_	7 . 2C55A	723A8A_

CCV

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:30:12PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7C61.3	ug/L	7_.CC1	73.1 0	7328C
t l16_3CR		73280	ug/L	7AA.C3	7 ._656	73 81
t s3A63Ct		7C60.5	ug/L	71.50	7 .0305	711C.1
BC2 A6Ct		75 5.3	ug/L	7C.022	7 .615	7621._
BmC55CCR		75 1.C	ug/L	7C.3C5	7 .A21C	722833
Be131 CR		75 6.6	ug/L	72._AC	7 .52_1	7138 6
9 m135ACR		7328__	ug/L	766.22	7 .0A10	7318C6
9 d22_5Ct		7C6_.0	ug/L	71.5AA	7 .022C	732833
9 r 22A_Ct		75 0.5	ug/L	71.AC2	7 .050	7183A5
9 N2_00Ct		7C66.3	ug/L	7C.306	7 .A10C	7650C
9 u1201Ct		75 _._	ug/L	71.3 _	7 ._312	7_86_3
Fe2566CR		73285C	ug/L	760.C5	7 .00_6	73_8AC
KC0__CCR		73285A	ug/L	702.2_	7 .50C1	7_8031
Li_0 0CR		7533._	ug/L	73.056	7 .1C16	7186A3
Mg2 25Ct		7328_	ug/L	7AA.C5	7 .0 23	7_8166
Mn250_CR		75 C.6	ug/L	7C.005	7 .6C50	7C8305
Mr 2 2 Ct		7535.5	ug/L	7_C__	73.25C	72855_
, m5A65CR		732801	ug/L	7A .1C	7 ._131	736851
, i213_Ct		7533.C	ug/L	7C.CC2	7 .A_A5	738555
Pb22 1Ct		75 .2	ug/L	71.56A	7 .0361	7AA .
Sb2 _ACt		75 6._	ug/L	7C.A10	7 .6C62	7C C.3
Se36_ Ct		7CAA.C	ug/L	7C.5__	7 .615	72C .C
Si253_CR		7318 3	ug/L	7315._	73. C2	758120
Sn3A66Ct		7C65.	ug/L	72._ 5	7 .52_1	7533.0
SNC235CR		753 .2	ug/L	72.C00	7 .CA5_	72A822
Ti11C6Ct		7C65.5	ug/L	70. 65	73.C12	736822
Tl36 ACt		75 A.2	ug/L	71.655	7 .00A1	75CA._
VC262CCt		7C6A.3	ug/L	7C. 11	7 .A 60	7A8C2_
Zn2 _2Ct		7C62.0	ug/L	71.302	7 ._C1A	7181
YC1_ CR		73C810C	9 cs/S	7326.2A	7 .A66C1	73C810C
YC22C1Ct		73C8233	9 cs/S	760.C03	7 ._A5A0	73C8233
YC1_ Ct		7235863	9 cs/S	7_61.12	7 .12333	7235863

CCB

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:23:C PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 772:23:C PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .C362	ug/L	7 .2 21	7CA.25	-C5.3
t l16_3CR		70._32	ug/L	73.1_	730.A0	-22.C1
t s3A63Ct		7 .55 0	ug/L	7 .C C	701.1_	-3. 5_
BC2 A6Ct		73. 1A	ug/L	7 . CC53	7C.2A0	7_.C05
BmC55CCR		- . _1 6	ug/L	7 .331A	73A .C	750.31
Be131 CR		7 .3 00	ug/L	7 . C606	7C_.2C	73. A3
9 m135ACR		-0.600	ug/L	7_.CC	7A .01	-13.2_
9 d22_5Ct		7 . 1606	ug/L	7 . _60A	730.5C	- .5101
9 r 22A_Ct		- .235	ug/L	7 . 22 2	73 .2C	76.106
9 N2_00Ct		7 .1555	ug/L	7 .2A51	7A .2C	70.1 C
9 u1201Ct		- .202A	ug/L	7 . _0_0	72C.A3	-0 .1
Fe2566CR		7C.1_	ug/L	71.21_	70C.22	75.A1_
KC0__CCR		-13._3	ug/L	721.C5	70C.36	-355._
Li_0 0CR		- .0556	ug/L	71. A0	7C A.C	71 .6
Mg2 25Ct		- .22_2	ug/L	7 .33A6	752.56	-A_61
Mn250_CR		7 . 2_C3	ug/L	7 .55 2	728 A1	71. 52
Mr 2 2 Ct		73._26	ug/L	7 .1_1_	722.12	7A.5_5
, m5A65CR		-2.CC2	ug/L	76.1 5	71A3.3	-50.A_
, i213_Ct		7 .3 25	ug/L	7 .1_3A	7152.6	7 .0652
Pb22 1Ct		- .2A6	ug/L	7 ._1C6	7236.0	7 ._0A6
Sb2 _ACt		7 .3_C5	ug/L	7 . 3 30	7_.3A3	73. 2A
Se36_ Ct		- .C530	ug/L	73.53C	7115.2	7C.2 0
Si253_CR		731._A	ug/L	73C.12	73 C.0	71A.0
Sn3A66Ct		- . C_1C	ug/L	7 .C0 3	738 3C	73.A2A
SNC235CR		7 .3_A0	ug/L	7 .2221	7313.0	-3C.A
Ti11C6Ct		7 .1_AA	ug/L	7 .103_	73 .A	-2C.CA
Tl36 ACt		7 .03C_	ug/L	7 ._50C	762.	7 . 1_1C
VC262CCt		- .3065	ug/L	7 .301_	76_.0C	-A.332
Zn2 _2Ct		7 . _00_	ug/L	7 . 2633	7C2.6_	7 .0310
YC1_ CR		73C815_	9 cs/S	73A2.A	73.2011	73C815_
YC22C1Ct		73C820A	9 cs/S	76 ._C	7 ._1CAC	73C820A
YC1_ Ct		723_821	9 cs/S	7001.3_	7 .1505_	723_821

SN3857-008A

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 772:2_: 2PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		73C6.1	ug/L	73.3_1	7 .0061	718A3
t l16_3CR		73 806	ug/L	7C .1	7 .1AC	7A8515
t s3A63Ct		700 .A	ug/L	7 .6303	7 .36CA	713C._
BC2 A6Ct		75 _.1	ug/L	7 ._C_C	7 .3200	7636.0
BmC55CCR		7061.3	ug/L	73.56A	7 .12C3	7238_2
Be131 CR		7530.A	ug/L	72.316	7 .C313	713853
9 m135ACR	W	7028_0	ug/L	73C2.C	7 .3656	700810
9 d22_5Ct		700_.1	ug/L	7 .3__3	7 . 1CAA	733851
9 r 22A_Ct		7063.	ug/L	7 .566C	7 .3223	718 _2
9 N2_00Ct		7060.A	ug/L	7 .35__	7 . 13C5	768225
9 u1201Ct		75 1.5	ug/L	73.052	7 .1CA	7_8_A5
Fe2566CR		758C1_	ug/L	72_.33	7 .CA C	7082A_
KC0__CCR		73 836	ug/L	700.0	7 .C_A2	758C
Li_0 0CR		753 .6	ug/L	7 .6525	7 .3A_C	7186_A
Mg2 25Ct		758A1C	ug/L	7_.6CC	7 .336	7286_
Mn250_CR		7061.5	ug/L	73.352	7 .211C	708 0C
Mr 2 2 Ct		7532.2	ug/L	73._05	7 .120	72852C
, m5A65CR		7338	ug/L	7_.C1C	7 . 5AC6	73_8A5
, i213_Ct		7CA6.C	ug/L	73. 0	7 .2 50	738006

SN3857-008A

Medhr d7, my e: Ft ST-2 3_Q UQt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772:2_: 2PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Qt		700A.0	ug/L	7 .C2A0	7 . A650	7A1_.0
Sb2 _AQt		7063.2	ug/L	73.A00	7 .1A22	71A_.A
Se36_ Qt		7000.2	ug/L	7C.132	7 .6 10	7211.5
Si253_QR		718C5	ug/L	72_.61	7 .0A _	738C10
Sn3A66Qt		7CAA.C	ug/L	73.020	7 .151_	75 3.0
SNC235QR		7A23.0	ug/L	7 .52 A	7 . _11A	7C581A
Ti11C6Qt		706_.5	ug/L	7 .5610	7 .336_	73A8_3
Tl36 AQt		7CAC._	ug/L	73.__2	7 .1C1	7536.A
VQ262CQt		7060._	ug/L	7 .CA3C	7 . 6_05	7A8313
Zn2 _2Qt		7001.2	ug/L	7 .531C	7 .3 A5	718306
YQ1_ QR		73C81C0	9 cs/S	7A .530	7 .5_323	73C81C0
YQ22C1Qt		73C832	9 cs/S	70.6663	7 . 5__5	73C832
YQ1_ Qt		72 A856	9 cs/S	738 30.3	7 .CA0_2	72 A856

SN3857-008S

Medhr d7, my e: Ft ST-2 3_Q UQt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772:1 :32PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		75 .A0	ug/L	7 .2_1_	7 .53A3	7382 2
t l16_3QR		728316	ug/L	733.02	7 .5C06	73801A
t s3A63Qt		73 C.A	ug/L	7 .2132	7 .22 0	7_A.A3
BQ2 A6Qt		751C.1	ug/L	73.512	7 .2A__	7652._
BmC55CQR	W	72833A	ug/L	7C.52A	7 .231A	7638_C
Be131 QR		75C.A1	ug/L	7 . _A51	7 .325	71826_
9 m135AQR	W	701832	ug/L	761.5A	7 .32A	7008 3
9 d22_5Qt		7251.6	ug/L	7 ._311	7 .2C3_	7_8311
9 r 22A_Qt		7536.0	ug/L	73.326	7 .2301	718215
9 N2_00Qt		7233.2	ug/L	7 .55	7 .2_ 5	718620
9 u1201Qt		72_0.2	ug/L	73.C60	7 .5_ C	718520
Fe2566QR		738 0_	ug/L	7_.050	7 ._2A	738C20
KQ0__CQR		733831	ug/L	7_.25C	7 . 5_30	758A53
Li_0 0QR		755A.3	ug/L	7 .62__	7 .3__	7C82A5
Mg2 25Qt		758501	ug/L	76.C05	7 .30	728A21
Mn250_QR		7526.6	ug/L	71.C_0	7 ._5C2	7C8126
Mr 2 2 Qt		7331.6	ug/L	7 .531C	7 .C5 _	75_ .C
, m5A65QR		7318AA	ug/L	713.AC	7 .226C	7238 C
, i213_Qt		752 .	ug/L	73.C3C	7 .202	7385_3
Pb22 1Qt		73 3.2	ug/L	7 . 0353	7 . 0 __	7300._
Sb2 _AQt		73 A.0	ug/L	73.33A	73. 26	7A2.01
Se36_ Qt		73 5.A	ug/L	71.562	71.16_	755.3A
Si253_QR		7C8C26	ug/L	71A.5C	7 .A0 2	738A3C
Sn3A66Qt		753C.5	ug/L	7 .C561	7 . A620	7520.5
SNC235QR		7A06.0	ug/L	73. A2	7 .321	7CA8 0
Ti11C6Qt		7526.6	ug/L	72. 65	7 .165C	736863
Tl36 AQt		73 2.2	ug/L	7 ._A _	7 .___	73 6.6
VQ262CQt		7520.A	ug/L	72. 6	7 .1A _	7A80 5
Zn2 _2Qt		7066.5	ug/L	73.A1A	7 .1_A	71812
YQ1_ QR		73C8361	9 cs/S	7C .663	7 .2AAA2	73C8361
YQ22C1Qt		73C8 60	9 cs/S	713.602	7 .22_A	73C8 60
YQ1_ Qt		72 682C	9 cs/S	75C.AA1	7 . 2_21	72 682C

SN3857-008P

Medhr d7, my e: Ft ST-2 3_Q UQt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 772:1C:2CPM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3857-008P

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:1C:2CPM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7CA.A6	ug/L	7 .3 61	7 .2215	73830A
t l16_3CR		728 A_	ug/L	70.135	7 .15 0	73016
t s3A63Ct		73 1.A	ug/L	7 ._620	7 .__0C	7_A.1_
BC2 A6Ct		7513.A	ug/L	71.0 6	7 ._60C	765 .6
BmC55CCR	W	728 11	ug/L	73C.6	7 .011	76 813
Be131 CR		752.6C	ug/L	7 . C2 A	7 . 06C6	7182_0
9 m135ACR	W	703821	ug/L	7C25.2	7 .56_6	7008 3
9 d22_5Ct		7253.3	ug/L	73.6C3	7 .001	7_8 A2
9 r 22A_Ct		7535.0	ug/L	71.AA3	7 .0525	718236
9 N2_00Ct		72 5.	ug/L	7 . 5_65	7 . 200A	718A6
9 u1201Ct		72_ .C	ug/L	7 .3 33	7 . 1AA2	7185 0
Fe2566CR		738 20	ug/L	75.510	7 .516	73816A
KC0__CCR		73 8A1	ug/L	7CA._5	7 .CC61	758A10
Li_0 0CR		751C.1	ug/L	73.62A	7 .1_ 6	7C8232
Mg2 25Ct		758525	ug/L	7C1.C0	7 .0A_6	728A 0
Mn250_CR		7532.	ug/L	72.36_	7 .C2AA	7C826C
Mr 2 2 Ct		7332.1	ug/L	73. _	7 .6CC	7551.A
, m5A65CR		7318C_	ug/L	73 1.1	7 .0_0C	72 86C
, i213_Ct		753A.2	ug/L	7C. C6	7 .0A3C	7385_
Pb22 1Ct		73 .1	ug/L	7 .A6C6	7 .A625	730_.5
Sb2 _ACt		73 5.1	ug/L	72.610	72.0A6	7A .12
Se36_ Ct		73 2.6	ug/L	7 .6 5	7 .A066	751.61
Si253_CR		7C826	ug/L	73C.51	7 .11A_	738A C
Sn3A66Ct		75 6.6	ug/L	72.6AC	7 .5A51	752C.2
SNC235CR		7A53.5	ug/L	7_.15A	7 .0C__	7C080_
Ti11C6Ct		7532._	ug/L	72. 33	7 .1621	7368__
Tl36 ACt		73 3.C	ug/L	7 .5011	7 .5_5_	73 6.1
VC262CCt		753 .A	ug/L	7 .065A	7 .355A	7A8560
Zn2 _2Ct		706C.2	ug/L	71.__	7 .0C _	71826C
YC1_ CR		73C850	9 cs/S	732C.10	7 .A5156	73C850
YC22C1Ct		73C8310	9 cs/S	762.0_6	7 ._5_23	73C8310
YC1_ Ct		723185_	9 cs/S	7362.1C	7 . 6 _3	723185_

SN3857-009

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:1A:15PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .1_C6	ug/L	7 . 5A6C	73_.35	-CC.3A
t l16_3CR		733.30	ug/L	7 .5503	7C.66	-36.05
t s3A63Ct		-3.1_A	ug/L	7 .3C02	73 .0_	-2.1__
BC2 A6Ct		72.111	ug/L	7 . _211	72._02	7A.001
BmC55CCR		7 . 02 2	ug/L	7 . _25	7A_.0A	7_1.__
Be131 CR		- . 2 _6	ug/L	7 .32_A	7_32.6	-_._6_
9 m135ACR		7A. 5A	ug/L	71._01	7C5.56	-3C.12
9 d22_5Ct		- . 10A6	ug/L	7 . 103_	76A. 0	-2.CCC
9 r 22A_Ct		- .10_C	ug/L	7 .32CC	711. 5	7A.16C
9 N2_00Ct		7 .3151	ug/L	7 . 33 6	7A.360	71. 6_
9 u1201Ct		7 ._130	ug/L	7 .0CA1	733A.5	-5A.11
Fe2566CR		75.C5	ug/L	7 .23AA	7C. 35	70.116
KC0__CCR		-_.216	ug/L	72 . C	7123.1	-3C1.3
Li_0 0CR		71.31	ug/L	72. _	7_C. 6	7_3.3
Mg2 25Ct		733.C1	ug/L	7 .52C2	7C.5AA	-2.A 1
Mn250_CR		7 . 0_6_	ug/L	7 .320A	73__.3	71.CA0
Mr 2 2 Ct		7 .C65A	ug/L	7 .2 _2	7C3.56	72.621
, m5A65CR		722.C1	ug/L	7_.35_	720.CC	-36.A
, i213_Ct		- . 065	ug/L	7 .3C0A	73A_.	7 .23_

SN3857-009

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 772:1A:15PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.1 0	ug/L	7 . 2AA6	72.23	-3.326
Sb2 _ACt		7 .C131	ug/L	7 .1622	76 .62	73.2C
Se36_ Ct		7 .63A_	ug/L	7 .1C15	710.16	7C.AA6
Si253_CR		735.C	ug/L	725.20	73_C.3	716.A5
Sn3A66Ct		7 .C 0	ug/L	7 .3303	72A.0_	72.1 _
SNC235CR		7 .31 1	ug/L	7 .3206	76A.3	-30. 6
Ti11C6Ct		7 .5221	ug/L	7 .2 1	71A.1C	-3A.05
Tl36 ACt		- .2_A	ug/L	7 .CAC_	73A .A	-3. 1C
VC262CCt		7 .35 1	ug/L	7 . _62_	7C_. A	-2.1A0
Zn2 _2Ct		7 .0265	ug/L	7 . C1C3	75.65	75.3AA
YO1_ CR		73C8C60	9 os/S	726A.60	72. _21	73C8C60
YC22C1Ct		73C812	9 os/S	7 .2C0 1	7 . 3025	73C812
YO1_ Ct		723A85C	9 os/S	7056.CA	7 .1C051	723A85C

SN3857-010

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 772:C2:5APM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .20_3	ug/L	7 . A A3	726.20	-C .6_
t l16_3CR		731.61	ug/L	7A.6A2	7_C.C0	-30. C
t s3A63Ct		- .3_C	ug/L	7 .C1AC	72_0.1	-3.526
BC2 A6Ct		73.5A0	ug/L	7 .50_1	71_.13	70.15C
BmC55CCR		- .230A	ug/L	7 .1502	73_C.	706._3
Be131 CR		- . 201	ug/L	7 . _1A	7211.0	-5.5CA
9 m135ACR		735.21	ug/L	7_. 50	716.0A	-_.5CA
9 d22_5Ct		- . 0 13	ug/L	7 . 35 C	723.16	-1.23
9 r 22A_Ct		- .2A_2	ug/L	7 . CC63	735._6	7A.A0
9 N2_00Ct		7 .363C	ug/L	7 .3 CA	75C.01	7C. 6_
9 u1201Ct		73. 1C	ug/L	7 .C_25	7CC.02	-53.51
Fe2566CR		75.365	ug/L	73.33	723.10	7_.A2_
KC0__CCR		7_.02C	ug/L	73 .0C	7356.0	-311.
Li_0 0CR		7 . 2316	ug/L	72.6CC	7318C0_	71_.CC
Mg2 25Ct		733.51	ug/L	72.350	73A.03	-2.03A
Mn250_CR		7 .C22_	ug/L	7 .3 _5	725.23	7_.223
Mr 2 2 Ct		7 .1 _C	ug/L	7 . 0203	721.01	73.650
, m5A65CR		72C.65	ug/L	721.C1	761.A6	-35.11
, i213_Ct		7 .C 11	ug/L	7 . 356	71.6C1	73.__5
Pb22 1Ct		-3.__	ug/L	7 .563_	715._C	-3.010
Sb2 _ACt		7 .36CC	ug/L	7 .112_	7303.3	73. C
Se36_ Ct		- .0A0C	ug/L	7 .12C	7C3.3C	7C. 36
Si253_CR		73.0_0	ug/L	73.AA6	73 _.6	711.1A
Sn3A66Ct		7 .C12	ug/L	7 .C610	733C.1	72.1 A
SNC235CR		7 .323	ug/L	7 .3231	73 .2	-30.1C
Ti11C6Ct		7 .3_AC	ug/L	7 . C2_A	725.1C	-13.6_
Tl36 ACt		- .C510	ug/L	7 .0C21	73_1._	-3.22C
VC262CCt		- .215A	ug/L	7 .1015	735A.C	-A.AC2
Zn2 _2Ct		7 ._2A0	ug/L	7 . 0 56	733.21	7C.C_2
YO1_ CR		73C830	9 os/S	7215.56	73.__2_	73C830
YC22C1Ct		73C8306	9 os/S	72C.6 _	7 .305__	73C8306
YO1_ Ct		72318C0	9 os/S	72A_.3	7 .311AA	72318C0

SN3878-001

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 772:C0:23PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3878-001

Medhr d7, my e: Ft ST-2 3_O, UOt a | Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 772:C0:23PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- . 2_0_	ug/L	7 .CA65	738A26	-310.6
t l16_3OR		7_C3.A	ug/L	73 .AA	73._65	706A.
t s3A63Ot		7 .0A23	ug/L	7 . 3C 3	73.063	-3.510
BO2 A6Ot		7_6.06	ug/L	7 .5C30	7 .00_2	7326.C
BmC55OOR		75_.A_	ug/L	7 .0AC5	73.1A	72851C
Be131 OR		7 . 121	ug/L	7 . _1 5	7365.2	-C.CA5
9 m135AOR		731811	ug/L	710.C2	7 .2A A	73C833
9 d22_5Ot		7 . 2105	ug/L	7 . 2 _3	7A_00	733.1_
9 r 22A_Ot		73.C 0	ug/L	7 .3C35	73 . . _	736.A2
9 N2_00Ot		73.CA0	ug/L	7 .3 32	7_.A3	726.2_
9 u1201Ot		7_. __	ug/L	7 . 351A	7 .251_	735.31
Fe2566OR		733831	ug/L	7330.3	73. 52	73C8A5
KO0__OOR		7C8_30	ug/L	73_.26	7 .152A	7281_3
Li_0 0OR		72.6_5	ug/L	72.3 2	70 .62	756. 2
Mg2 25Ot		7C8525	ug/L	71.6 1	7 . A_25	72826
Mn250_OR		753C.A	ug/L	7 .1A_2	7 . 05 3	7C821
Mr 2 2 Ot		7 .32 0	ug/L	7 .2A_C	7210.1	7 .663_
, m5A65OR		733805	ug/L	733.C0	7 . 60_5	730863
, i213_Ot		71.61C	ug/L	7 .1 3	70._20	733.11
Pb22 1Ot		73.A_3	ug/L	7 .2C_	731.22	75. 0C
Sb2 _AOt		- . 1 _3	ug/L	7 .30_0	7500.5	73.2CC
Se36_ Ot		- .3022	ug/L	73.10_	706A.6	7C.C_5
Si253_OR		7C85_5	ug/L	711.23	7 .0205	738A0A
Sn3A66Ot		- .25C2	ug/L	7 . 1_2A	73C.20	73._35
SNC235OR		7A0.00	ug/L	7 . 2_C5	7 . 1 31	7C8A C
Ti11C6Ot		72_.A2	ug/L	7 .230A	7 .A323	76A6.5
Tl36 AOt		- .02C5	ug/L	7 .A3A5	7331.	-2.31
VO262OOt		73.51_	ug/L	7 .2350	73C. C	72 .A2
Zn2 _2Ot		7A.C35	ug/L	7 . CC60	7 .51CC	75_.61
YO1_ OR		73C82A3	9 os/S	766._36	7 ._605A	73C82A3
YO22C1Ot		73C8206	9 os/S	730.6 2	7 .32510	73C8206
YO1_ Ot		723286A	9 os/S	7CC3.65	7 .2 05	723286A

SN3878-002

Medhr d7, my e: Ft ST-2 3_O, UOt a | Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 772:53:10PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		7 . 5C36	ug/L	7 . 32A3	721._1	-315.6
t l16_3OR		7_23.A	ug/L	7 .6_ _	7 .35C5	7C0C.C
t s3A63Ot		7 .C202	ug/L	7 .316	712.5C	-3.050
BO2 A6Ot		70 . 2	ug/L	7 .13C	7 .CCA5	7320.2
BmC55OOR		750.52	ug/L	7 .3A 0	7 .13C2	728521
Be131 OR		7 .3 A0	ug/L	7 . 5C_5	75 .2A	7 .2C01
9 m135AOR		731810	ug/L	7_.5CA	7 . CA6_	73186C
9 d22_5Ot		7 . 565	ug/L	7 . C 1	7_0.01	732.25
9 r 22A_Ot		73.152	ug/L	7 . AC0A	7_.202	736. 5
9 N2_00Ot		73.5C2	ug/L	7 .1205	723.2C	726.05
9 u1201Ot		7_.066	ug/L	7 .2C10	71.5AC	72C._6
Fe2566OR		73381A	ug/L	753.C_	7 .C522	73C865
KO0__OOR		7C85A	ug/L	723.50	7 .C03	7281 C
Li_0 0OR		7C.21A	ug/L	73.5CA	71_.52	7_0.03
Mg2 25Ot		7C8516	ug/L	7A_63	7 .3635	728253
Mn250_OR		753A.6	ug/L	7 . 16C2	7 . 056_	7C836A
Mr 2 2 Ot		7 .365_	ug/L	7 .3106	70 .52	73.116
, m5A65OR		73380C	ug/L	71C.00	7 .26_3	7308_1
, i213_Ot		71.A36	ug/L	7 .1031	76.021	73 .0C

SN3878-002

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpsd7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:53:10PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		72.213	ug/L	7 .62 _	7C3.20	75._11
Sb2 _AOt		7 .1A6C	ug/L	7 .2A32	702.22	73.55C
Se36_ Ot		73.1A2	ug/L	7 . 36 2	73.10_	75.335
Si253_OR		7C855A	ug/L	7 ._C_	7 . 3C30	738AC_
Sn3A66Ot		- . 3C32	ug/L	7 . _110	7CCA.6	73.A2_
SNC235OR		7A0.0	ug/L	7 .C662	7 .5_62	7C802_
Ti11C6Ot		72C.22	ug/L	7 .C652	72. CC	7A0C.6
Tl36 AOt		-3.222	ug/L	7 .1552	726. 0	-2._30
VO262COt		73.C10	ug/L	7 .C010	712.60	73A.6
Zn2 _2Ot		7A.25	ug/L	7 . 6223	73.33A	75C.0
YO1_ OR		73C8 _	9 cs/S	731C.25	7 .65CA_	73C8 _
YO22C1Ot		7318661	9 cs/S	730. 2A	7 .323_6	7318661
YO1_ Ot		72 68CC	9 cs/S	718_21.A	73.01 2	72 68CC

SN3878-003

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpsd7, my e: RS
t cquiNe7Dme: 5/22/2 2 772:55:50PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- .1_3	ug/L	7 . 5A1_	73_.30	-52.16
t l16_3OR		7CC1.6	ug/L	75._23	73.2__	711A.2
t s3A63Ot		7 .00A5	ug/L	7 .26CA	710.A0	- .6C03
BO2 A6Ot		71A.A6	ug/L	7 .3 35	7 .2_ 6	702.A5
BmC55COR		730.A0	ug/L	7 . 2655	7 .3_51	7A21.
Be131 OR		- . 511_	ug/L	7 . C5 1	7A.CC	-6.301
9 m135ACR		723855	ug/L	76C.C6	7 .C1A5	7228C1
9 d22_5Ot		- . 22A1	ug/L	7 . C16	7362.1	- .001_
9 r 22A_Ot		7 .13A5	ug/L	7 . 5325	73_. 6	732._6
9 N2_00Ot		73.32_	ug/L	7 .332C	76.606	723.52
9 u1201Ot		73.011	ug/L	7 .22 1	732.03	-C .6
Fe2566OR		73835C	ug/L	7_.AC_	7 .5613	73853C
KO0__COR		7_8511	ug/L	71 .0_	7 .C0 6	718116
Li_0 0OR		7_._15	ug/L	72.025	7C3. A	7A5.55
Mg2 25Ot		7_8212	ug/L	720.32	7 .C152	7183 3
Mn250_OR		725 .C	ug/L	7 .23AA	7 . A0C2	728 25
Mr 2 2 Ot		7 .13 3	ug/L	7 . 250A	7A.132	73.626
, m5A65OR	W	716832	ug/L	7__.20	7 .3_6C	75A80C
, i213_Ot		75.0A	ug/L	7 .3555	72._63	730.50
Pb22 1Ot		- .630A	ug/L	7 .351_	73_.01	- .CC5_
Sb2 _AOt		73.C60	ug/L	7 .5 6_	71C. C	72. 6_
Se36_ Ot		- .6_ 5	ug/L	73.2_6	7312.3	71.6_
Si253_OR		758A33	ug/L	72 .3_	7 .1C0	7281C
Sn3A66Ot		- .3532	ug/L	7 .C_0_	71 6.1	73._63
SNC235OR		73 _.5	ug/L	7 ._36A	7 .5A2	758011
Ti11C6Ot		730._1	ug/L	7 .1A21	72.3_6	7_3A.6
Tl36 AOt		- ._013	ug/L	7 .1 0	7C5._3	-3.015
VO262COt		7 .623_	ug/L	7 .3 2_	733.31	76.1_1
Zn2 _2Ot		7_. 0	ug/L	7 . 0AC1	73.262	7C .C2
YO1_ OR		73C8 15	9 cs/S	73A6.52	73.15 1	73C8 15
YO22C1Ot		73C8 26	9 cs/S	72A_13	7 .2 C A	73C8 26
YO1_ Ot		72 _8A_	9 cs/S	738_ 6.6	7 .00A20	72 _8A_

SN3878-004

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpsd7, my e: RS
t cquiNe7Dme: 5/22/2 2 771: :3CPM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3878-004

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 77/1: :3OPM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		7 .C20_	ug/L	7 .1_C5	7A5.25	-162.C
t l16_3OR		7555.5	ug/L	733.0	72.3 0	7522.2
t s3A63Ot		722.1	ug/L	7 .0O6C	71.1_3	73 .55
BO2 A6Ot	W	738_0_	ug/L	7_C C	7 .1A22	728A3_
BmC55OOR		7355.	ug/L	7 .626A	7 .5666	7_8A5A
Be131 OR		- . 22 3	ug/L	7 . 1AA	730_.1	-A.50C
9 m135AOR	W	73OO8_	ug/L	7A2.5	7 . 50 0	735O8C
9 d22_5Ot		7 . A656	ug/L	7 . 32 1	731.C2	7OC._6
9 r 22A_Ot		70.C2_	ug/L	7 .1122	7C.O01	75C.23
9 N2_00Ot		732.60	ug/L	7 .1AO0	72.6_5	721C.6
9 u1201Ot		75.263	ug/L	7 .2_51	75. 31	-3.623
Fe2566OR	W	7C28_0	ug/L	72AA.0	7 ._0__	75081A
KO0__OOR	W	7_A8 _	ug/L	71OC.A	7 .5 _5	71_86A
Li_0 0OR		73_. A	ug/L	7 .C_15	72.AA1	73_ .A
Mg2 25Ot	W	7C 800	ug/L	73A .C	7 .OO2C	7368C3
Mn250_OR	W	718153	ug/L	73. 35	7 . 1 26	720805
Mr 2 2 Ot		7 .1235	ug/L	7 .35C3	7O0.61	73.565
, m5A65OR	F	72C 80	ug/L	7380_A	7 .01C_	71038
, i213_Ot		71C.1	ug/L	7 .35A0	7 .C_20	76C.21
Pb22 1Ot		7 ._66A	ug/L	7 .161_	75_.2C	7C.00
Sb2 _AOt		73.366	ug/L	7 .22 3	73A.15	71. A3
Se36_ Ot		-3.CA1	ug/L	7 .03C3	7CA.3C	7C.22_
Si253_OR		7338_1	ug/L	732 ._	73. 10	7O80_6
Sn3A66Ot		7 .__ 1	ug/L	7 .21 6	71C.60	72.C 2
SNC235OR		7636._	ug/L	71.__5	7 .16A_	75 86_
Ti11O6Ot		75C.C3	ug/L	7 .A3 _	73.O6	73863A
Tl36 AOt		-3.6_6	ug/L	73.3A	756.6	-_.2_0
VO262OOt		733.6C	ug/L	7 . 1013	7 .132_	730C.0
Zn2 _2Ot		75C.05	ug/L	7 .3__3	7 .1 11	71C_.
YO1_ OR		73C816C	9 os/S	732.A_	7 . A6116	73C816C
YO22C1Ot		7318163	9 os/S	733._15	7 . A_A6	7318163
YO1_ Ot		73668_C	9 os/S	766C.3_	7 .O6066	73668_C

SN3878-005

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 77/1: 5:5APM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		73.3C_	ug/L	7 .3310	76.620	-5 0.5
t l16_3OR		-3 ._3	ug/L	731.16	732_.1	710.2C
t s3A63Ot		73C.6_	ug/L	7 .020C	7C.A_2	75.3 A
BO2 A6Ot		76OC.C	ug/L	731.50	73.C10	738_35
BmC55OOR		73A3.0	ug/L	72.1A6	73.135	708A02
Be131 OR		- . _C32	ug/L	7 . 1_0	750.2C	-6. 61
9 m135AOR	W	73 68C	ug/L	7381C_	73.21	733C8_
9 d22_5Ot		7 . 5012	ug/L	7 . 5663	73 C.5	7_3. 0
9 r 22A_Ot		73.0 6	ug/L	7 .3C 0	7A.212	72 .1
9 N2_00Ot		72.23C	ug/L	7 . A110	71.0_5	7C5.1A
9 u1201Ot		- .A 60	ug/L	7 . C03	7 .5A30	-A2.15
Fe2566OR	W	75A812	ug/L	7631.6	73.5_0	70_86
KO0__OOR	W	7C280	ug/L	7125._	7 .0_25	72280
Li_0 0OR		75.515	ug/L	72.C3_	7C1._5	700.A3
Mg2 25Ot	W	7C5802	ug/L	7_ C.1	73.122	722831
Mn250_OR	W	7O8CA2	ug/L	75 .A	73.311	71_81A
Mr 2 2 Ot		- .3C12	ug/L	7 .1 3	72 6._	- ._A16
, m5A65OR	F	723680	ug/L	711A.A	7 .35C2	71128
, i213_Ot		735.6	ug/L	7 . 32 _	7 . 05AC	7C3.3C

SN3878-005

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 777l: 5:5APM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.25A	ug/L	7 .A_22	7_A5_	72._22
Sb2 _ACt		7 .3 1A	ug/L	7 .A532	7A2 .	72.056
Se36_ Ct		7 .A1CA	ug/L	73.0C6	72 6.5	75._32
Si253_CR		733831	ug/L	75A16	7 .52CA	7C800_
Sn3A66Ct		7 ._A_1	ug/L	7 .A2C_	732 .3	72.C02
SNC235CR		7A53.C	ug/L	7A555	73. 5	7C_82_
Ti11C6Ct		73.50A	ug/L	7 .3C2C	76. 25	72 .__
Tl36 ACt		-2.3CA	ug/L	7 .3060	7A1_C	-0.051
VC262CCt		71.03C	ug/L	7 .2___	70.30A	7C3.A6
Zn2 _2Ct		75.000	ug/L	7 . 53A5	7 .A605	710.1C
YC1_ CR		73C8331	9 cs/S	752._3	7 .10200	73C8331
YC22C1Ct		7318_35	9 cs/S	7356.00	73.3015	7318_35
YC1_ Ct		736A8_	9 cs/S	75 C._A	7 .25C33	736A8_

CCV

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 777l:33:3 PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		75 _.5	ug/L	7 .22C2	7 . CC2_	7328CA
t l16_3CR		732863	ug/L	7A5C_	7 . __36	73 8C1
t s3A63Ct		7C6_._	ug/L	73.636	7 .1A_C	711_.2
BC2 A6Ct		75 6.5	ug/L	72.126	7 .C502	761A_
BmC55CCR		75 A6	ug/L	7 .C1A1	7 . A_32	7228_
Be131 CR		753C._	ug/L	73.261	7 .2532	713825
9 m135ACR		7328A_	ug/L	7C_.1_	7 .1_ _	7318_C
9 d22_5Ct		7C61._	ug/L	7 .5_13	7 .33C3	732832
9 r 22A_Ct		75 0.	ug/L	7 .2256	7 . CC5_	7182 _
9 N2_00Ct		7535.0	ug/L	73.2A1	7 .2CA0	768_62
9 u1201Ct	W	7520.3	ug/L	7 . 0 A1	7 . 31CC	7C83
Fe2566CR		7328_A	ug/L	73_.03	7 .313A	73_86_
KC0__CCR		73286C	ug/L	7C3.3A	7 .13AC	7_8A0A
Li_0 0CR		753A2	ug/L	73.265	7 .25	7C8 3C
Mg2 25Ct		732851	ug/L	73 .65	7 . A0C	7_8C3_
Mn250_CR		75 6.1	ug/L	7 ._336	7 .32 3	7C8365
Mr 2 2 Ct		7535.0	ug/L	73._A3	7 .1256	728500
, m5A65CR		7318 6	ug/L	7C6 _	7 . 10C6	72 8 3
, i213_Ct		753C._	ug/L	7 .A056	7 .30 2	73850_
Pb22 1Ct		7C6_.6	ug/L	7 .5235	7 .3 C6	7AA .A
Sb2 _ACt		75 0._	ug/L	7 .1126	7 . _55A	7C 5.0
Se36_ Ct		7C63.0	ug/L	7 .A11C	7 .3_65	72C1.6
Si253_CR		73182	ug/L	7_0.CC	7 .53 6	7581A2
Sn3A66Ct		7C63.1	ug/L	7 . 0C13	7 . 3531	7533.0
SNC235CR		7521.1	ug/L	7 .25A6	7 . C6CA	72A8A1
Ti11C6Ct		75 0._	ug/L	7 .6622	7 .3655	73681
Tl36 ACt		75 0.	ug/L	7 .C23	7 . A1 1	7553.5
VC262CCt		7533.A	ug/L	7 .3_	7 . 132_	7A8CA5
Zn2 _2Ct		7CAA2	ug/L	7 .5A03	7 .32 2	71826C
YC1_ CR		73C813C	9 cs/S	7A5.305	7 .565 _	73C813C
YC22C1Ct		73C8136	9 cs/S	7_.111	7 . CC22_	73C8136
YC1_ Ct		7233855	9 cs/S	75 5._3	7 .216	7233855

CCB

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 777l:35:30PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmte: 5/22/2 2 771:35:30PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- . 1_1	ug/L	7 .132	7A56.5	-15.13
t l16_3CR		-3._02	ug/L	75.C3C	7121.A	-26.6
t s3A63Ct		7 .A 33	ug/L	7 .362A	72C. 0	- .A6A_
BC2 A6Ct		73.06	ug/L	7 . 1_C5	72. 1_	70.610
BmC55CCR		7 . 26 _	ug/L	7 . 3133	7C53.3	7_ .
Be131 CR		- . 360C	ug/L	7 . 1210	73_C.	-_.__C
9m135ACR		-1.25A	ug/L	7_.622	7232.5	-2_.21
9d22_5Ct		7 . 1_A6	ug/L	7 . C21_	733C.6	- ._3_
9r22A_Ct		- . 13A6	ug/L	7 . 1 35	76C.51	73 ._6
9N2_00Ct		7 .2 __	ug/L	7 .3 51	75 .6A	7C.C2A
9u1201Ct		7 .1_22	ug/L	7 .1301	7A0._	-_3.5
Fe2566CR		75.5CC	ug/L	73.6	71C.20	70.1A1
KC0__CCR		70.53	ug/L	733._5	7355.2	-31C.2
Li_0 0CR		73.A66	ug/L	71.0C_	7360.2	753.2C
Mg2 25Ct		-3.312	ug/L	73.653	7302.C	-6.2A
Mn250_CR		- . A6C5	ug/L	7 .21_6	72_C.A	72. 56
Mr2 2 Ct		73.55C	ug/L	7 .CC25	72A.C0	7A.131
, m5A65CR		732.52	ug/L	73.511	732.2C	-1C.62
, i213_Ct		7 . 2__A	ug/L	7 .3_12	7_832	7 .C6C0
Pb22 1Ct		- ._3__	ug/L	7 .C26_	7_6._0	7 . 66_2
Sb2 _ACt		7 . A_ 6	ug/L	7 .1112	718A03	7 .63AC
Se36_ Ct		7 .56 3	ug/L	7 . 0136	732.C	7C.0A0
Si253_CR		71C.33	ug/L	72_.15	700.21	7C_.6_
Sn3A66Ct		- .1 02	ug/L	7 . 532_	73_._6	73.5A1
SNC235CR		7 .2 26	ug/L	7 .3A3	7A6.23	-32.6C
Ti11C6Ct		7 .5 A3	ug/L	7 .3510	71 .25	-36.33
Tl36 ACt		7 . 51C6	ug/L	7 .2A5	7512.0	- ._630
VC262CCt		- .335A	ug/L	7 .223	736 .6	-_.666
Zn2 _2Ct		7 . 333	ug/L	7 . 20AC	725 .0	7 .11AA
YC1_ CR		73C81CC	9cs/S	761.AA5	7 ._5C52	73C81CC
YC22C1Ct		73C8C6_	9cs/S	76.3 3	7 . _20AC	73C8C6_
YC1_ Ct		723_825	9cs/S	738_ 2.1	7 .0C 62	723_825

PBWNE21ICW2

Medhr d7, my e: Ft ST-2 3_Q UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmte: 5/22/2 2 771:36:16PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .3C	ug/L	7 .16C3	72A3._	-1A. A
t l16_3CR		7 .AC66	ug/L	7A. C_	76C_.0	-20._6
t s3A63Ct		7 .36CC	ug/L	7 .5C__	72A3.2	-3.132
BC2 A6Ct		73.220	ug/L	7 . C6AC	7C. _1	7_.AC6
BmC55CCR		7 .2056	ug/L	7 .3526	755.C1	703.C
Be131 CR		7 . 11_2	ug/L	7 . 105A	7333.A	-1.1_0
9m135ACR		-2.260	ug/L	7 .6_ 5	7C3.A3	-25. C
9d22_5Ct		- . 2CCC	ug/L	7 . C036	7361.3	-2.311
9r22A_Ct		- .32AA	ug/L	7 .3606	7351._	73 . 5
9N2_00Ct		7 .3__A	ug/L	7 . C_30	720._0	71._A5
9u1201Ct		7 ._AC3	ug/L	7 ._0	760.6C	-50.12
Fe2566CR		7C.102	ug/L	7 .6C52	723._2	75.00C
KC0__CCR		-2_. 1	ug/L	72_.C2	73 3.5	-353.C
Li_0 0CR		73. C5	ug/L	7 . 5 23	7C.A 5	7CC.2C
Mg2 25Ct		730.63	ug/L	7 .A 2_	7C.CA3	7 .52 _
Mn250_CR		7 .13 5	ug/L	7 . 55C3	730.A5	75.126
Mr2 2 Ct		7 .C 6	ug/L	7 . 05A3	73A.5C	72.53C
, m5A65CR		-3.515	ug/L	73. 1	7_5.11	-5_. A
, i213_Ct		7 .3A 6	ug/L	7 . _110	715. 2	73. 30

PBWNE21ICW2

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 777:36:16PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		- .0CA_	ug/L	7 . A_2C	73.352	- .31_3
Sb2 _AOt		7 .50 0	ug/L	7 . 56CA	73 .C2	73.103
Se36_ Ot		- ._6C3	ug/L	73.256	73A3.5	7C.3C5
Si253_OR		-0.153	ug/L	73A.C6	7253.5	726.AA
Sn3A66Ot		- .153	ug/L	7 .15	766.02	73.512
SNC235OR		- . 66C0	ug/L	7 . _A__	7_6. 1	-26.C_
Ti11C6Ot		7 .3 01	ug/L	7 . _C_	7_ .36	-15. A
Tl36 AOt		- ._605	ug/L	7 .2260	712.61	-3.535
VO262COt		- .3_36	ug/L	7 .3 C	7_C.25	-0.A 0
Zn2 _2Ot		7 .__1C	ug/L	7 . _	76. C5	7C.0A5
YO1_ OR		73C821_	9 cs/S	71A.2A_	7 .2_A61	73C821_
YO22C1Ot		73C8C5_	9 cs/S	76C.A03	7 ._5_20	73C8C5_
YO1_ Ot		723A822	9 cs/S	768_C_.6	7C.C2 0	723A822

LCSWNE21ICW2

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 777:2C: OPM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		751.A3	ug/L	7 . 11C0	7 . _223	7381 0
t l16_3OR		728215	ug/L	732._A	7 .5_01	738000
t s3A63Ot		73 _.3	ug/L	73.AC6	73.0C1	702. 5
BO2 A6Ot		751A.6	ug/L	7A.AA	73._CA	7662.C
BmC55COR		72830A	ug/L	735.5C	7 .0312	76C806
Be131 OR		755.31	ug/L	7 .5515	73. C	718111
9 m135ACR		72800_	ug/L	735._2	7 .5_2A	728636
9 d22_5Ot		72_3.A	ug/L	7C.A33	73.A1A	7_8510
9 r 22A_Ot		751_.C	ug/L	76.C10	73.056	718C53
9 N2_00Ot		7235.6	ug/L	73.103	7 ._153	7C833_
9 u1201Ot		720C.A	ug/L	7 .16_0	7 .3COC	718023
Fe2566OR		738 C5	ug/L	732.AA	73.212	73816C
KO0__COR		73383_	ug/L	73A. 1	7 .3_35	7586
Li_0 0OR		755_.1	ug/L	73.A12	7 .1262	7C8265
Mg2 25Ot		758C50	ug/L	73 C.C	73.631	728A56
Mn250_OR		75C0.2	ug/L	71._33	7 ._566	7C806_
Mr 2 2 Ot		766.22	ug/L	7 .A5_A	7 .A_15	75 C._
, m5A65OR		7A8536	ug/L	7C_. 3	7 .5C 2	732860
, i213_Ot		75C1.	ug/L	7A.63C	73._C2	738_AC
Pb22 1Ot		73 5.0	ug/L	72.32_	72. 32	7363._
Sb2 _AOt		73 A.5	ug/L	72.2_3	72. AC	7A5.1A
Se36_ Ot		73 _.3	ug/L	73.660	73.AA1	750.30
Si253_OR		738 66	ug/L	7 .A5	7 . 001C	7C06.1
Sn3A66Ot		7533.6	ug/L	75.065	73.312	75C2.5
SNC235OR		75_5.2	ug/L	73._A6	7 .26AA	7138 5
Ti11C6Ot		7511.6	ug/L	73._ A	7 .1 31	72 850
Tl36 AOt		73 A.A	ug/L	72. C_	73.AA3	732 .6
VO262COt		752A.5	ug/L	7 .CC16	7 . A166	7A861A
Zn2 _2Ot		753A.3	ug/L	7A_5	73._0	7185_
YO1_ OR		73C820C	9 cs/S	7C1. 10	7 .1 35	73C820C
YO22C1Ot		73C8501	9 cs/S	735A.6C	73. 6 0	73C8501
YO1_ Ot		723C851	9 cs/S	7_2A. 6	7 .2620A	723C851

SN3772-001

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 777:2A:22PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3772-001

Medhr d7, my e: Ft ST-2 3_Q UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7771:2A:22PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		- .1 5C	ug/L	7 .16_1	7326.A	-_2._0
t l16_3QR		715A.1	ug/L	76._51	72._6C	7250.A
t s3A63Qt		73.2AC	ug/L	7 .5106	7C3.AA	- ._0AC
BQ2 A6Qt	W	728A C	ug/L	73 .10	7 .1_60	7C8_A6
BmC55QQR		7_.A_2	ug/L	7 .C3Q6	7_. C_	71QC.1
Be131 QR		- . 3 AC	ug/L	7 .3 A_	738 2	-5.A0_
9 m135AQR		7338 A	ug/L	73 0.	7 .6_50	73382_
9 d22_5Qt		7 . 5 50	ug/L	7 . C311	7A3.01	- .3_C2
9 r 22A_Qt		7 .233A	ug/L	7 . 2_5A	732.55	732.1
9 N2_00Qt		72C._	ug/L	7 .C6A_	72. 20	7C2 .A
9 u1201Qt		73 .22	ug/L	7 . C 6	7 . C 3	7__.01
Fe2566QR		718 36	ug/L	7_ .1_	73.666	718A02
KQ0__QQR		718A1	ug/L	70_. 2	73.6A5	738A_
Li_0 0QR		762.QC	ug/L	72.623	71.3_	7035.5
Mg2 25Qt		7355.0	ug/L	7 .201A	7 .3056	7__. _
Mn250_QR		71A.AC	ug/L	7 .C120	73.33C	71 A.0
Mr 2 2 Qt		732.5A	ug/L	7 .32Q0	7 .6631	75A.63
, m5A65QR	F	70A586	ug/L	718113	7 .C21A	7383558
, i213_Qt	W	738356	ug/L	7C._02	7 .C 1	7182A5
Pb22 1Qt		- ._20C	ug/L	7 .63C	73C5.0	7 .26_2
Sb2 _AQt		73. QC	ug/L	7 .CA2C	7C_.23	73.3A3
Se36_ Qt		73.222	ug/L	73.125	73 A.C	7C._6A
Si253_QR		7C8_ 6	ug/L	71 .C2	7 .__ 3	738A23
Sn3A66Qt		71.25	ug/L	7 .C65_	735.25	7C.A65
SNC235QR		7C 1.5	ug/L	72.55C	7 ._126	723813
Ti11C6Qt		73.551	ug/L	7 .1 03	736.0A	736.C6
Tl36 AQt		7 .2122	ug/L	7 .A5 A	71__.C	- .C6C2
VQ262QQt		7 .0100	ug/L	7 .3C6	72 .2	75.2_5
Zn2 _2Qt		72 .60	ug/L	7 .32C1	7 .5626	7313.6
YQ1_ QR		7318020	9 os/S	7_5.33_	7 .C0C10	7318020
YQ22C1Qt		7318112	9 os/S	7_ .520	7 .C516A	7318112
YQ1_ Qt		7362816	9 os/S	728_01.5	73.1A6_	7362816

SN3779-018

Medhr d7, my e: Ft ST-2 3_Q UQt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 7771:1C:C5PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		- . 661	ug/L	7 . 0 00	703.20	-1_.11
t l16_3QR		73C. 3	ug/L	723.5_	7351.6	73.2 5
t s3A63Qt		725._0	ug/L	7 .3165	7 .5C12	735.6C
BQ2 A6Qt		73C. 1	ug/L	7 .C23C	71. C	726.55
BmC55QQR		76.631	ug/L	7 .2 C6	72. _0	7CA0.A
Be131 QR		7 . 16AA	ug/L	7 . _06C	730 .C	-2.33_
9 m135AQR	W	72_80A	ug/L	7325.0	7 .C_61	72A83A
9 d22_5Qt		- . C10A	ug/L	7 . 20_6	7_1.25	-2.511
9 r 22A_Qt		- .30A1	ug/L	7 . 5_5A	713.0C	76.5__
9 N2_00Qt		7 .6566	ug/L	7 . 5C33	75._10	73A.QC
9 u1201Qt		71.512	ug/L	7 .6165	72_._	-3_.A5
Fe2566QR		7C . 1	ug/L	73. 0	72._0C	751. 1
KQ0__QQR		7_6A._	ug/L	730.1C	72.CA2	721A.0
Li_0 0QR		71A.56	ug/L	7 .2302	7 .5_2A	7126.A
Mg2 25Qt		72852_	ug/L	72.__C	7 .3 5C	7382_6
Mn250_QR		7 ._5A6	ug/L	7 .C6AC	705._1	7A.063
Mr 2 2 Qt		7 ._526	ug/L	7 . 06 6	732.33	71.__A
, m5A65QR		73 8CA	ug/L	7A2.C5	7 .0A_6	7358A_
, i213_Qt		7 .22__	ug/L	7 .32_5	755.AC	73.316

SN3779-018

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 7771:1C:C5PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.133	ug/L	7 .22_5	730.2A	-3.325
Sb2 _ACt		7 .0_5C	ug/L	7 .AC00	733 .0	73.C62
Se36_ Ct		7 .3623	ug/L	7 .A2CA	7C26.2	7C.5 1
Si253_CR		718A16	ug/L	733.A1	7 .1 A1	738501
Sn3A66Ct		7 .1111	ug/L	7 . C153	731. _	72.231
SNC235CR		706C.1	ug/L	72.506	7 .5350	72_866
Ti11C6Ct		7 .3510	ug/L	7 . _ 3A	716.35	-12. 0
Tl36 ACt		7 . 10_6	ug/L	7 .3033	7C5C.3	- ._06_
VC262CCt		723.0	ug/L	7 .20A2	73.2A2	715 _.A
Zn2 _2Ct		73.012	ug/L	7 . 6562	7 .551A	733.A0
YC1_ CR		73C83AA	9 cs/S	73C2.CA	73. C1	73C83AA
YC22C1Ct		73C8230	9 cs/S	71.CC2	7 . 2C233	73C8230
YC1_ Ct		723 86	9 cs/S	7385C .2	7 .01 26	723 86

SN3779-018L

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 7771:16: _PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		-2.323	ug/L	7 .3153	7_.10	-CC.6
t l16_3CR		73 2.1	ug/L	730._1	730.2C	-A.C 5
t s3A63Ct		720.20	ug/L	72.C	7A.A	72.1 2
BC2 A6Ct		722.C	ug/L	73. 2_	7C.5A	732.0C
BmC55CCR		733.10	ug/L	7 .3_26	73.C11	7350.0
Be131 CR		7 .5236	ug/L	7 . 60_1	73A.03	73. _6
9 m135ACR		725805	ug/L	735.2A	7 . 561C	758C 0
9 d22_5Ct		- . 6050	ug/L	7 . _0A1	7_6.52	-2. 1
9 r 22A_Ct		-3.03C	ug/L	7 . CC36	7 .250A	7A_AC
9 N2_00Ct		73.CA	ug/L	7 ._3 5	7C3.2_	7_. A5
9 u1201Ct		7C.A63	ug/L	7C.112	7AA.5A	-52.16
Fe2566CR		7_3.C_	ug/L	73.663	71.216	73_.20
KC0__CCR		7A .5	ug/L	7122.0	7C .12	-5 .62
Li_0 0CR		712.A5	ug/L	76.61A	71 .2_	7A_.2A
Mg2 25Ct		728C36	ug/L	712._1	73.1C6	72C .
Mn250_CR		-3.35	ug/L	71.2_5	72A1.6	73. 26
Mr 2 2 Ct		72.361	ug/L	7 .C306	736. _	72._50
, m5A65CR		73 8C	ug/L	7A_.2	7 .A263	71833
, i213_Ct		- .116A	ug/L	7 ._ C_	7300.6	7 .2513
Pb22 1Ct		-5.05A	ug/L	72.C3A	7C2.	- .A5A2
Sb2 _ACt		7C.553	ug/L	72.60A	7_5.C1	73._16
Se36_ Ct		72.CC1	ug/L	732._	7535.0	7C.03A
Si253_CR		718_CC	ug/L	755.6_	73.515	7125.0
Sn3A66Ct		71.20A	ug/L	7 .2CC1	70.C53	72.5AA
SNC235CR		7CA .0	ug/L	73.631	7 .16A	758210
Ti11C6Ct		73.1AC	ug/L	7 .3A02	731.52	-20.A0
Tl36 ACt		-2. 11	ug/L	7 . 6 60	7C.C0_	-3.362
VC262CCt		72 .2_	ug/L	7 .30 2	7 .AC 3	7_1.05
Zn2 _2Ct		72.035	ug/L	7 .2536	76.2A3	71.6_5
YC1_ CR		73C82 _	9 cs/S	7A3.C0_	7 .5015C	73C82 _
YC22C1Ct		73C8C55	9 cs/S	732 .3C	7 .A133	73C8C55
YC1_ Ct		723C8C	9 cs/S	7283C5.A	73. A	723C8C

SN3779-018A

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 7771:C1:25PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-018A

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 777:C1:25PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		720.A2	ug/L	7 . _C6_	7 .2115	7_33.6
t l16_3OR		73 855	ug/L	7 .6330	7 . A_C5	7A8003
t s3A63Ot		7C65.5	ug/L	73.1_6	7 .20_2	71C3.3
BO2 A6Ot		753 .6	ug/L	72.CA2	7 .CA50	7651.C
BmC55OOR		7C61.0	ug/L	73.3AC	7 .216A	722823
Be131 OR		75 6.3	ug/L	7 .205A	7 . 5C30	7138A
9 m135AOR	W	71 815	ug/L	7_1.03	7 .2 66	711835
9 d22_5Ot		7C06.2	ug/L	7 .5C1A	7 .3315	733665
9 r 22A_Ot		7C62.3	ug/L	73.2 2	7 .2OC2	7183_
9 N2_00Ot		7C6C._	ug/L	75. 1C	73. 3A	768OOC
9 u1201Ot		75 3.5	ug/L	7C. 6C	7 .A3_1	7_8A_3
Fe2566OR		7582A2	ug/L	7C6.02	7 .6C31	7C82__
KO0__OOR		73 8_	ug/L	762.C_	7 .A025	7580_6
Li_0 0OR		751A.5	ug/L	7C.56A	7 .A516	7C826
Mg2 25Ot		7C8003	ug/L	7_.552	7 . AC12	7C8 5
Mn250_OR		7C6 .0	ug/L	7 . 3_C3	7 . 11C1	7C835A
Mr 2 2 Ot		7C55.3	ug/L	735.1A	71.106	7281 6
, m5A65OR		73582A	ug/L	75C.60	7 .1566	72C8 1
, i213_Ot		7C6C.A	ug/L	73.5CA	7 .1326	738516
Pb22 1Ot		7CA1.3	ug/L	72. 3_	7 .C30C	7A_6.5
Sb2 _AOt		7C55.6	ug/L	71. 0C	7 ._0C2	71_6.0
Se36_ Ot		7CA5.1	ug/L	75.2AA	73. 6	72CC.C
Si253_OR		718AA6	ug/L	732.C1	7 .1365	738_50
Sn3A66Ot		7C0C.0	ug/L	71.3AA	7 ._035	75 2.2
SNC235OR		76_5.	ug/L	73.21	7 .3205	75C80
Ti11C6Ot		7CA5.1	ug/L	73.00_	7 .1_56	73A80C
Tl36 AOt		7C6C.C	ug/L	7 .501A	7 .33_3	75C_.3
VO262OOt		75 5.6	ug/L	7C. 61	7 .A 6	7A8525
Zn2 _2Ot		7C0A.6	ug/L	7 .5C05	7 .33C1	7182A3
YO1_ OR		73C802C	9 os/S	7236.25	73.CA6	73C802C
YO22C1Ot		73C85C3	9 os/S	72.2310	7 . 3522C	73C85C3
YO1_ Ot		723C86C	9 os/S	71812A.3	73.5CAC	723C86C

SN3779-018S

Medhr d7, my e:	Ft ST-2 3_O, UOt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmoe:	5/22/2 2 777:C0:10PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		752.1_	ug/L	73.32A	72.35C	7382_0
t l16_3OR		72836_	ug/L	725.C0	73.3_	7380_6
t s3A63Ot		731A.2	ug/L	72._1A	73.63	763. 3
BO2 A6Ot		75__.1	ug/L	7A. 30	73.C3_	738 0
BmC55OOR	W	72833_	ug/L	73_.0	7 .0A63	762811
Be131 OR		75C._C	ug/L	7 .16A3	7 .02A_	718132
9 m135AOR	W	71 826	ug/L	7260.6	7 .6A15	712835
9 d22_5Ot		72_5.0	ug/L	71.50C	73.1C5	7_8C 1
9 r 22A_Ot		75C .A	ug/L	70.55C	73.160	71815A
9 N2_00Ot		7232.	ug/L	71.A0A	73.A1	7C8 26
9 u1201Ot		72_A	ug/L	7C.C1C	73._5C	718_3A
Fe2566OR		738 01	ug/L	7_.0C	7 ._2A	738C15
KO0__OOR		7338_3	ug/L	73C2.0	73.226	7_8355
Li_0 0OR		75A6.	ug/L	7C.C_1	7 .0500	7C855_
Mg2 25Ot		7A8 C	ug/L	73 0.A	73.1C0	7C8 1C
Mn250_OR		7526.5	ug/L	73.0_5	7 .1111	7C81_2
Mr 2 2 Ot		7332.2	ug/L	72.2 C	73.6_5	755 ._
, m5A65OR		736833	ug/L	723A.C	73.3C1	726821
, i213_Ot		75C_.A	ug/L	7_.AAC	73.256	738_10

SN3779-018S

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmœ:	5/22/2 2 7771:C0:10PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		73 _.1	ug/L	73.6A3	73.A_5	73A_.
Sb2 _ACt		733C._	ug/L	7 . _20_	7 . 5C05	7A0.3C
Se36_ Ct		7332._	ug/L	72.332	73.A0_	75A.26
Si253_CR		758312	ug/L	721.56	7 .C560	728331
Sn3A66Ct		7520.0	ug/L	73 . 2	73.A66	7516.0
SNC235CR	W	738 __	ug/L	733.3_	73. C_	75A80C
Ti11C6Ct		7525.A	ug/L	732.13	72.1C3	72 82
Tl36 ACt		73 A.5	ug/L	73._06	73.5CA	733_.C
VC262CCt		75CC.3	ug/L	7A.206	73.522	76830C
Zn2 _2Ct		7525.A	ug/L	7_._52	73.2_5	718CA0
YC1_ CR		73C81 6	9 cs/S	71 .C_	72. 66A	73C81 6
YC22C1Ct		73C8 __	9 cs/S	7336.50	7 .A5 2	73C8 __
YC1_ Ct		7231865	9 cs/S	718115.3	73.55AA	7231865

SN3779-018P

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmœ:	5/22/2 2 7771:53:52PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		752.5C	ug/L	7 .52_5	73. 2	738210
t l16_3CR		72835_	ug/L	732.55	7 .5A23	7380C2
t s3A63Ct		7313.2	ug/L	7 .C A0	7 .133C	7A0._1
BC2 A6Ct		7510.0	ug/L	7 .5026	7 .3 _5	76_6.A
BmC55CCR	W	728 _2	ug/L	70.6A2	7 .1A02	76 82_
Be131 CR		751. 0	ug/L	7 .2526	7 .C0_5	71822A
9 m135ACR	W	726826	ug/L	75_. A	7 .3635	713836
9 d22_5Ct		7251.C	ug/L	7 . 0A32	7 . 1 A1	7_8365
9 r 22A_Ct		7530.2	ug/L	7 .25A6	7 . 5 5	718256
9 N2_00Ct		7233.	ug/L	7C. AA	73.610	7186 1
9 u1201Ct		72_A.0	ug/L	7C._55	73.011	71852A
Fe2566CR		738 C1	ug/L	70. C_	7 ._05_	738166
KC0__CCR		733826	ug/L	7C2.AA	7 .1066	7_8 2
Li_0 0CR		7503.6	ug/L	7 .0 A0	7 .3216	7C8CC3
Mg2 25Ct		708_ 6	ug/L	71.2_C	7 . C26	718A63
Mn250_CR		753_.2	ug/L	73.C11	7 .200_	7C82_0
Mr 2 2 Ct		73 2.A	ug/L	73.666	73.6C1	7532.3
, m5A65CR		73A8CC	ug/L	730.30	7 . 613_	72A826
, i213_Ct		7522.1	ug/L	73. 32	7 .361A	7385A_
Pb22 1Ct		73 .6	ug/L	7 ._0A2	7 ._02	7306.1
Sb2 _ACt		73 _.A	ug/L	7 .0A3	7 .013_	7A2.1
Se36_ Ct		73 1.1	ug/L	72.23	72.316	75C._5
Si253_CR		7C86_0	ug/L	725.01	7 .53A3	728 51
Sn3A66Ct		75 1.0	ug/L	71. _6	7 ._ 62	7522.A
SNC235CR	W	738 1	ug/L	73.5 1	7 .3C_	75_862
Ti11C6Ct		7525.1	ug/L	7A.353	73.552	7368_C
Tl36 ACt		73 C.C	ug/L	7 .A03	7 .A1C5	7331._
VC262CCt		75C3._	ug/L	73 .A1	72.	7A8AA0
Zn2 _2Ct		75 C.1	ug/L	7 .3605	7 . 163_	718161
YC1_ CR		73C8156	9 cs/S	733.2 6	7 . 0A _5	73C8156
YC22C1Ct		73C82_A	9 cs/S	7C1.CA3	7 .1 C0C	73C82_A
YC1_ Ct		72 A83A	9 cs/S	718363.6	73.5111	72 A83A

SN3779-019

Medhr d7, my e:	Ft ST-2 3_Q UCt a	Medhr d7Revisir n:	73816
t nmlpso7, my e:	RS		
t cquiNe7Dmœ:	5/22/2 2 7771:5_: _PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-019

Meohr d7, my e: Ft ST-2 3_O, UOt a Meohr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 777:5_: _PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- . 1_	ug/L	7 .22A3	7_11._	-15.2C
t l16_3OR		71 .O6	ug/L	73C.0_	7CA.C	73C._5
t s3A63Ot		720.AA	ug/L	7 .65 5	71.C 6	730.56
BO2 A6Ot		732.__	ug/L	7 .3313	7 .A615	720.C1
BmC55OOR		73 .20	ug/L	7 .CA6	7C.0_1	75 0.1
Be131 OR		- . 0A1_	ug/L	7 . OC _	75_.21	-6.135
9m135AOR	W	72_86	ug/L	7231.C	7 .0611	72A855
9d22_5Ot		7 . 2 2C	ug/L	7 . 2A25	7316._	- .6A1C
9r22A_Ot		- . _A33	ug/L	7 . _30C	76 ._C	73 .15
9N2_00Ot		7 .A__0	ug/L	7 .20C5	713._0	73_.62
9u1201Ot		71.__5	ug/L	7 ._160	730.C_	-35.13
Fe2566OR		716.0_	ug/L	7 .0_6A	73.61_	751.31
KO0__OOR		7_5 .2	ug/L	76.2A	73.C20	723C._
Li_0 0OR		71_.6A	ug/L	71.13A	7A.602	712 .C
Mg2 25Ot		7285_1	ug/L	723.50	7 .AC3C	738266
Mn250_OR		7 .2 3C	ug/L	7 .3613	765.A6	75. 0A
Mr2 2 Ot		72._6	ug/L	7 .56AA	722.2_	731.AA
, m5A65OR		73 85_	ug/L	70C.C5	7 .0 53	73_831
, i213_Ot		7 .3AOC	ug/L	7 .33_C	7_1.32	73. _5
Pb22 1Ot		- .AA_	ug/L	7 ._ 0_	7_A.5A	- .1A21
Sb2 _AOt		7 .10A2	ug/L	7 .__56	730_.	73.3_A
Se36_ Ot		7 .1023	ug/L	7 ._665	73AA.	7C._1
Si253_OR		718A0_	ug/L	716.61	73. 1	738_ 2
Sn3A66Ot		71. C_	ug/L	73.520	75 .31	75. O0
SNC235OR		706A.C	ug/L	71.5 1	7 .0 26	7208C5
Ti11O6Ot		7 .A131	ug/L	7 .2_30	713.O6	-_.1AA
Tl36 AOt		7 .2A6A	ug/L	7 .2AA0	766._1	- .C330
VO262OOt		722.2	ug/L	7 .5_2	72.512	71_6.0
Zn2 _2Ot		72. 20	ug/L	7 . 3231	7 .56A_	731.60
YO1_ OR		73C8133	9os/S	73_C.A6	73.3522	73C8133
YO22C1Ot		73C81C1	9os/S	762.0 2	7 ._C_13	73C81C1
YO1_ Ot		72318__	9os/S	7033.16	7 .1126_	72318__

SN3779-020

Meohr d7, my e: Ft ST-2 3_O, UOt a Meohr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C: :25PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- ._0A_	ug/L	7 .35_6	721.32	-01.C_
t l16_3OR		70C .A	ug/L	75.25_	7 .0 65	7565.
t s3A63Ot		726. A	ug/L	7 ._5AA	72.2__	73A.12
BO2 A6Ot		73 .06	ug/L	7 . 1AA6	7 .1_ C	72C. 6
BmC55OOR		731.13	ug/L	7 .20_1	72. 0_	7_C_.1
Be131 OR		- . 3 2	ug/L	7 . 3A01	73A1.A	-0.AC5
9m135AOR	W	72A82C	ug/L	750.02	7 .2 OC	71 820
9d22_5Ot		7 . C32	ug/L	7 . _6_2	73_862	73.316
9r22A_Ot		7 .205	ug/L	7 .320A	7C_.CA	731. 5
9N2_00Ot		73._21	ug/L	7 . 1A26	72.156	713.25
9u1201Ot		72.56A	ug/L	7 .A_A5	711.C1	-1 .A5
Fe2566OR		72813A	ug/L	72.__1	7 .33O6	718326
KO0__OOR		7A15.	ug/L	75_.03	7_.063	7130.A
Li_0 0OR		72C.2A	ug/L	7 .2C30	7 .6651	7225.
Mg2 25Ot		738_6C	ug/L	71.202	7 .3612	7A50.A
Mn250_OR		72A.C5	ug/L	7 . 552A	7 .36C1	7216.2
Mr2 2 Ot		73.52	ug/L	7 . 500A	71.A 3	7A. _6
, m5A65OR		73 800	ug/L	7A.30	7 . 0A C	73_835
, i213_Ot		73.C22	ug/L	7 .2C 3	73_.AA	7C._ 0

SN3779-020

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C: :25PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		- . C02	ug/L	7 . 6 A3	7362.C	73.3 5
Sb2 _AOt		7 .3C 1	ug/L	7 .2C0_	730_.5	73. 63
Se36_ Ot		- .C313	ug/L	7 .1150	7A3.2_	7C.20
Si253_OR		7583 6	ug/L	70.525	7 .3C01	728322
Sn3A66Ot		7 .6 3	ug/L	7 .135_	715. _	72.A26
SNC235OR		71C6.	ug/L	73. 56	7 .1 1C	7368C
Ti11C6Ot		7C5.01	ug/L	73.325	72.C56	738036
Tl36 AOt		7 . AA51	ug/L	7 .C201	7CA2._	- .02C_
VO262COt		7C. 23	ug/L	7 . 2_13	7 ._5C2	7_1.03
Zn2 _2Ot		72.233	ug/L	7 . 2 A6	7 . 6COA	735.25
YO1_ OR		73C8C53	9 cs/S	71C.___	7 .216A6	73C8C53
YO22C1Ot		73C81A	9 cs/S	73.A2C_	7 . 32_AA	73C81A
YO1_ Ot		7231852	9 cs/S	7A5_. 2	7 .C 6	7231852

CCV

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C: C:CAPM Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		75 _.A	ug/L	73.C50	7 .2A05	7328C3
t l16_3OR		73183	ug/L	7A3.C_	7 ._22	73 810
t s3A63Ot		7C65.A	ug/L	73. 1_	7 .2 6	7111.
BO2 A6Ot		75 6.	ug/L	7 .256_	7 . 5 66	761 .1
BmC55COR		7530.5	ug/L	71.53A	7 ._060	722836
Be131 OR		7521.5	ug/L	7 .3_02	7 . 136C	713830
9 m135AOR		7318 3	ug/L	7C .63	7 .13C1	73185C
9 d22_5Ot		7C63._	ug/L	7 .0_C1	7 .3555	73386A
9 r 22A_Ot		75 _.5	ug/L	7 .C0_1	7 . 6C C	718300
9 N2_00Ot		7531.A	ug/L	7C.1A_	7 .A51_	76856_
9 u1201Ot	W	752A.3	ug/L	7C.0 A	7 .A635	708 _6
Fe2566OR		7328A5	ug/L	73CA.3	73.351	73_8A5
KC0__COR		7318 C	ug/L	725.2A	7 .361A	7_8A 2
Li_0 0OR		752C.A	ug/L	71.3_6	7 ._ 1A	7186A0
Mg2 25Ot		732851	ug/L	7C2.5	7 .1162	7_81_3
Mn250_OR		753A.A	ug/L	72.1 1	7 .CC16	7C836
Mr 2 2 Ot		753_.3	ug/L	73.201	7 .2C_0	72855A
, m5A65OR	W	731813	ug/L	72 .5	7 .35C	736865
, i213_Ot		753C.1	ug/L	7 .335C	7 . 22C5	7385_1
Pb22 1Ot		7C65.C	ug/L	73.30_	7 .210C	7A03.
Sb2 _AOt		75 0.C	ug/L	7 ._C33	7 .32_1	7C 2.1
Se36_ Ot		7C62.0	ug/L	7C.22C	7 .A501	72C2.C
Si253_OR		731820	ug/L	716.A0	7 .1 5	7581 _
Sn3A66Ot		7C63.2	ug/L	7 .3CA	7 . 1 31	75 0._
SNC235OR	W	7512.C	ug/L	7 .3_56	7 . 1330	72A80_
Ti11C6Ot		75 6.6	ug/L	71. 53	7 .56A1	736820
Tl36 AOt		75 C.5	ug/L	73.__C	7 .126A	75CC.C
VO262COt		753 .1	ug/L	75. C1	7 .6AA3	7A8C A
Zn2 _2Ot		7CA_._	ug/L	73.3 _	7 .2202	718250
YO1_ OR		73C8 1A	9 cs/S	751.C60	7 .1A3 A	73C8 1A
YO22C1Ot		73C82 5	9 cs/S	735.C_C	7 .3 AA_	73C82 5
YO1_ Ot		723 82C	9 cs/S	728 A6.5	7 .661A_	723 82C

CCB

Medhr d7, my e: Ft ST-2 3_O, UOt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C: A:5_PM Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 77C: A:5_PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- .1 6	ug/L	7 .3_1C	752.AA	-C1.C3
t l16_3OR		71.2	ug/L	72. 35	7_2.6A	-2_.A_
t s3A63Ot		73.1 3	ug/L	7 . C360	7 .122_	- .5_A5
BO2 A6Ot		73.365	ug/L	7 . C_3	71.A56	70. C2
BmC55OOR		7 .2031	ug/L	7 .33	7C .55	70C.22
Be131 OR		7 . 3AO0	ug/L	7 .3 55	750 .6	-C.5 C
9 m135AOR		7 .1121	ug/L	7A_AA	728_35	-21.3A
9 d22_5Ot		7 . 13C	ug/L	7 . A362	72_. 6	- .002_
9 r 22A_Ot		- .3AA2	ug/L	7 .32__	7_0.1	76.6C1
9 N2_00Ot		- . 5A_1	ug/L	7 . 631A	7355.6	- ._62
9 u1201Ot		7 ._ 01	ug/L	7 ._52A	73 0.5	-56._1
Fe2566OR		75.6O6	ug/L	73. 33	730.	7A.23_
KO0__OOR		7A.501	ug/L	726.32	7116.0	-31A.1
Li_0 0OR		72.00	ug/L	7 .C3 2	73C.A3	756.A6
Mg2 25Ot		-3.0A5	ug/L	7 .66A0	755.65	-6.A01
Mn250_OR		7 . 3325	ug/L	7 . AO66	7055._	72.661
Mr 2 2 Ot		73.066	ug/L	7 .1 _5	730. C	76.060
, m5A65OR		-3.303	ug/L	73.A03	7356.A	-50.A6
, i213_Ot		7 .326A	ug/L	7 .110	7256._	7 .63_5
Pb22 1Ot		- .0C30	ug/L	73.205	7303.6	- .3253
Sb2 _AOt		- . 3AA0	ug/L	7 .5100	728AO6	7 .6312
Se36_ Ot		7 .626	ug/L	7 .35 C	73_.36	75. A2
Si253_OR		72C.05	ug/L	7A.3AA	711. A	7OC._2
Sn3A66Ot		7 .3226	ug/L	7 .5_25	7C50._	72. A6
SNC235OR		7 .312	ug/L	7 .3366	76 .A_	-30.53
Ti11O6Ot		7 .C21C	ug/L	7 . 0013	73A.2_	-22.62
Tl36 AOt		7 .1_56	ug/L	7 .3C3	71A.5C	- .150C
VO262OOt		- . 0AA2	ug/L	7 .301	7236.C	-_.5A2
Zn2 _2Ot		7 . 3A_0	ug/L	7 . 0A35	7C3A.5	7 .C 1A
YO1_ OR		73C8AC_	9 os/S	733 ._3	7 .0C5 _	73C8AC_
YO22C1Ot		73C8A0	9 os/S	7_3.66_	7 .C3_61	73C8A0
YO1_ Ot		72238O_	9 os/S	718500._	73._311	72238O_

SN3779-021

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 7381 6
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 77C:31:23PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- .C6OC	ug/L	7 .11 5	7__.AC	-CA.35
t l16_3OR		72__._	ug/L	7C.316	73.551	736C.1
t s3A63Ot		710.5	ug/L	7 ._C2A	73.03C	72C.16
BO2 A6Ot		75_.6	ug/L	7 .3036	7 .1 22	73 A.
BmC55OOR		71. _	ug/L	7 .33A5	71.6C2	7360.C
Be131 OR		- . 3_05	ug/L	7 . 0C_3	7OC5.C	-_.05C
9 m135AOR		73810A	ug/L	7C.AC3	7 .1531	738O63
9 d22_5Ot		- . A056	ug/L	7 . 3252	73C1.	-3.501
9 r 22A_Ot		- .3C_6	ug/L	7 . 5AA3	7C . 1	73 . 3
9 N2_00Ot		7 .CA2_	ug/L	7 . 5 C3	73 .C5	76._5_
9 u1201Ot		73.066	ug/L	7 .2332	733.0C	-C3.36
Fe2566OR		7355.5	ug/L	73.5 3	7 .6_55	7235.
KO0__OOR		713 .5	ug/L	76.103	71. 3A	713.C
Li_0 0OR		765.65	ug/L	72.3 _	72.365	7066._
Mg2 25Ot		733_.1	ug/L	73.A	73.5O0	753.20
Mn250_OR		71.33	ug/L	7 .5 A6	73_.1_	726.15
Mr 2 2 Ot		72.365	ug/L	7 . 6_ 5	7C.105	733.55
, m5A65OR	W	750802	ug/L	7315.A	7 .2152	7638C_
, i213_Ot		7 .31__	ug/L	7 .30__	7326.1	7 .6 _

SN3779-021

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 77C:31:23PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ot		- .6 6_	ug/L	7 .3011	736. _	- .O0_3
Sb2 _AOt		73.1O0	ug/L	73. _	70A__	72. 5
Se36_ Ot		- .6O00	ug/L	7 .5 C	752.A	7C. 11
Si253_OR		758555	ug/L	73A.51	7 .1115	7281_3
Sn3A66Ot		7 .C122	ug/L	7 .1636	76 .__	72.1_
SNC235OR		72_.CC	ug/L	7 .102	73.C 0	738CA1
Ti11O6Ot		75.551	ug/L	7 .3 C3	73.A0C	7305._
Tl36 AOt		7 .1_20	ug/L	7 . 53O6	73C.2	- .15A2
VO262OOt		71.3A	ug/L	7 . 5 6A	7 .3_ 1	7CA.A0
Zn2 _2Ot		73. _6	ug/L	7 . 0523	70. 10	70.5_A
YO1_ OR		73C8A 5	9 cs/S	7C5.126	7 .1 _30	73C8A 5
YO22C1Ot		73C8O61	9 cs/S	72 .C5	7 .3C33	73C8O61
YO1_ Ot		723C812	9 cs/S	728 20.5	7 .6C566	723C812

SN3779-022

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 77C:30:C2PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ot		- .515A	ug/L	7 .5_01	73 5.6	-_2.A
t l16_3OR		7_ 1.3	ug/L	70.OC3	73.21C	7C5_.2
t s3A63Ot		7C5.2C	ug/L	7 .A 5	73.006	726.25
BO2 A6Ot		732_.6	ug/L	7 .1_30	7 .2A5	7212.2
BmC55OOR		7C.01C	ug/L	7 . AC15	7 .30A2	72_C.1
Be131 OR		- .323_	ug/L	7 .32A_	73 5.0	-32.0A
9 m135AOR		7383 0	ug/L	72 .6C	73.A63	7383C5
9 d22_5Ot		- . A_C_	ug/L	7 . 5316	756.OC	7 .30_C
9 r 22A_Ot		7 . O060	ug/L	7 .32_3	72_2.6	733. 6
9 N2_00Ot		7 .5_A0	ug/L	7 .2C_	7C1.25	733.32
9 u1201Ot		7 . 0313	ug/L	7 .3265	738A3_	-_5.2_
Fe2566OR		738021	ug/L	76.5	7 .5535	7282A0
KO0__OOR		7C_0.0	ug/L	7A.121	73.006	733C.A
Li_0 0OR		73A .0	ug/L	72.333	73.3_A	738C31
Mg2 25Ot		733C._	ug/L	73.3_A	73. 36	706.A1
Mn250_OR		73_.02	ug/L	7 .1 C1	73.A2	7316.3
Mr 2 2 Ot		71.366	ug/L	7 . 1_51	73.3C2	73_.C3
, m5A65OR	W	7018 1	ug/L	722A.5	7 .1326	733383
, i213_Ot		7 .C_OC	ug/L	7 . 15A_	70.022	73.0_1
Pb22 1Ot		- .10_5	ug/L	7 ._A_	73A2.2	7 .O666
Sb2 _AOt		- .O22C	ug/L	7 ._5_A	7355.5	7 ._2 0
Se36_ Ot		- .6_10	ug/L	73.523	7350.A	71.605
Si253_OR		768C 0	ug/L	75. 5A	7 . 5100	718A3C
Sn3A66Ot		- .1530	ug/L	7 ._105	73A3.1	73.53A
SNC235OR		722.22	ug/L	7 . 1251	7 . 3C_C	738362
Ti11O6Ot		7C._ 6	ug/L	7 .5C 1	733.02	7310.5
Tl36 AOt		7 .2 6C	ug/L	7 .5A_1	72A .	- .5103
VO262OOt		73.0_3	ug/L	7 .2C22	731.05	72C._6
Zn2 _2Ot		73.251	ug/L	7 . 0300	7 .5020	7A.031
YO1_ OR		73C82 6	9 cs/S	7302.20	73.232C	73C82 6
YO22C1Ot		73C81 5	9 cs/S	7AC. 51	7 .5A05A	73C81 5
YO1_ Ot		7233800	9 cs/S	728 0C.C	7 .6A 6	7233800

SN3779-023

Medhr d7, my e: Ft ST-2 3_O, UOt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dme: 5/22/2 2 77C:22: 1PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3779-023

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 77C:22: 1PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .230C	ug/L	7 .305C	7A ._0	-55.02
t l16_3CR		7C00.2	ug/L	7A.12	73.0C1	71A5._
t s3A63Ct		736.2	ug/L	7 . 6210	7 . CA3	733.A5
BC2 A6Ct		75.A53	ug/L	7 .3 6C	73.A0	735.C5
BmC55CCR		736.1	ug/L	7 . A165	7 .C1C6	7631.0
Be131 CR		- . 3113	ug/L	7 . 1_22	72802	-A. 36
9 m135ACR	W	71C820	ug/L	732C.C	7 .1_13	71_8AA
9 d22_5Ct		- . 3515	ug/L	7 . 2C00	7356.C	7 .2_23
9 r 22A_Ct		- . 5A5A	ug/L	7 . _613	733A.1	733.1C
9 N2_00Ct		7 .0565	ug/L	7 .312	730.1A	735. 0
9 u1201Ct		7 .__25	ug/L	7 ._A35	73 2.6	-5A.20
Fe2566CR		738510	ug/L	76.C_	7 ._35_	728 A1
KC0__CCR		73821	ug/L	7A.336	7 ._566	751_.C
Li_0 0CR		735.A2	ug/L	73.603	732.C_	73_ .
Mg2 25Ct		73850	ug/L	7CA.A3	71.3 6	7A3 ._
Mn250_CR		73C.33	ug/L	7 .5555	71.61A	732 ._
Mr 2 2 Ct		7 .1_06	ug/L	7 . A212	722.10	72.1C2
, m5A65CR		758 A	ug/L	71 .A_	7 ._3_2	708025
, i213_Ct		7 .55_3	ug/L	7 . 3306	72.336	72. 52
Pb22 1Ct		-3.2 A	ug/L	7 . A065	70.2A2	- .60_5
Sb2 _ACt		7 .250	ug/L	7 .562	721 .C	73.363
Se36_ Ct		- .C61C	ug/L	73._C3	7112.0	7C.1 C
Si253_CR		7C830A	ug/L	75.300	7 .3216	7380CA
Sn3A66Ct		7 . C 0C	ug/L	7 .3255	71 A	73.605
SNC235CR		7C 6.1	ug/L	7 .52_C	7 .32A_	7228A5
Ti11C6Ct		7_ ._1	ug/L	7 ._C_3	73. __	728121
Tl36 ACt		- . 35C0	ug/L	7 .3131	7ACA.6	- .A5_2
VC262CCt		72._62	ug/L	7 .1 5C	733.1C	7C2. 0
Zn2 _2Ct		73.166	ug/L	7 . A_02	7 ._360	76.65
YC1_ CR		73C85 0	9 cs/S	702. 01	7 .C6_A2	73C85 0
YC22C1Ct		73C8_0_	9 cs/S	726_.23	72. 3A1	73C8_0_
YC1_ Ct		723_85_	9 cs/S	7386C .A	7 .A6_3A	723_85_

PBWNE21ICW3

Medhr d7, my e:	Ft ST-2 3_O, UCt a	Medhr d7Revisir n:	7381 6
t nmlpso7, my e:	RS		
t cquiNe7Dme:	5/22/2 2 77C:2_:20PM	Smy 4le7Tp4e:	a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .2_C2	ug/L	7 .25_2	76_.66	-C .A5
t l16_3CR		73A.1_	ug/L	735.	7A3.0	-31.A0
t s3A63Ct		- .3C21	ug/L	73.16C	7606.C	-3.51_
BC2 A6Ct		73.C 2	ug/L	7 . 6A	7_.663	70.33
BmC55CCR		7 . 3056	ug/L	7 . 3 5_	7_ .	7_ .6C
Be131 CR		- . 1_C2	ug/L	7 . 33 _	71 .1_	-0.0 5
9 m135ACR		7 .060A	ug/L	7 .2 21	725.15	-22. 5
9 d22_5Ct		- . C3__	ug/L	7 . 25A	7_3.6C	-2.535
9 r 22A_Ct		- .2_AC	ug/L	7 . 0625	726.51	76. A0
9 N2_00Ct		7 . 0051	ug/L	7 .306C	7213.5	73.6C6
9 u1201Ct		7 .A666	ug/L	7 . 32C5	73.1AC	-51.26
Fe2566CR		720.AC	ug/L	7C.321	73C.A3	710.C1
KC0__CCR		72. 52	ug/L	71 .A	7385 3	-310.A
Li_0 0CR		73.00A	ug/L	7 .___	710.C_	75 .C6
Mg2 25Ct		73 .__	ug/L	72. A6	736.56	-1.361
Mn250_CR		- .32 A	ug/L	7 . __CA	755. 1	73.A 6
Mr 2 2 Ct		7 .10_0	ug/L	7 . 150_	76.C62	72.112
, m5A65CR		726._3	ug/L	7C. 3_	731.5_	-A_01
, i213_Ct		- . A 21	ug/L	7 .215A	7261.6	7 .2 A2

PBWNE21ICW3

Medhr d7, my e: Ft ST-2 3_Q UQt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C2_:20PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Qt		- .5C31	ug/L	7 ._1 6	733_.5	7 .211C
Sb2 _AQt		7 .6 32	ug/L	7 .3A12	72 .11	73._23
Se36_ Qt		7 . 5262	ug/L	7 .5635	73833A	7C.C05
Si253_QR		71.6AC	ug/L	72._3_	7_5._5	71C.A_
Sn3A66Qt		7 .15 1	ug/L	7 . __16	73A.65	72.25
SNC235QR		7 . _ A6	ug/L	7 .C151	703C.A	-23. _
Ti11C6Qt		7 .10A	ug/L	7 . C60_	731.30	-21.A0
Tl36 AQt		- .A1_	ug/L	7 .13C5	710._2	-3._51
VQ262CQt		- .3A03	ug/L	7 .131_	73_0._	-A 11
Zn2 _2Qt		7 .0133	ug/L	7 . C366	75.0CC	75.2 6
YQ1_ QR		73C8C3_	9 cs/S	7350.32	73. A66	73C8C3_
YQ22C1Qt		73C81C5	9 cs/S	706.C62	7 .1C5 2	73C81C5
YQ1_ Qt		723181A	9 cs/S	728530.3	73.3060	723181A

LCSWNE21ICW3

Medhr d7, my e: Ft ST-2 3_Q UQt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C1 :51PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Qt		75 .C1	ug/L	7 .32C2	7 .2C_C	7382 1
t l16_3QR		72831C	ug/L	73.601	7 . 62C6	738_6C
t s3A63Qt		73 .A	ug/L	7 .6015	7 .6__	7_0. 3
BQ2 A6Qt		75 A.A	ug/L	7 .620	7 .3A22	7636.3
BmC55CQR		728 06	ug/L	7A.025	7 .C360	76 8C3
Be131 QR		752.01	ug/L	7 .55_C	73. 55	7183A_
9 m135AQR		728_13	ug/L	723.6_	7 .A1C5	7280_1
9 d22_5Qt		725 .5	ug/L	7 .C _6	7 .3_2C	7_831
9 r 22A_Qt		753A._	ug/L	73.330	7 .235C	718203
9 N2_00Qt		72 A.A	ug/L	7 .2 35	7 . 6_C_	71862
9 u1201Qt		72__.5	ug/L	7 .6CC3	7 .15C2	718553
Fe2566QR		738 5A	ug/L	70.362	7 ._066	738C3
KC0__CQR		73 850	ug/L	72C._A	7 .211C	75850A
Li_0 0QR		7515.6	ug/L	7C.65A	7 .6253	7C831_
Mg2 25Qt		758 A_	ug/L	73_.0A	7 .11	728_31
Mn250_QR		753A.6	ug/L	71.016	7 .02 _	7C82_3
Mr 2 2 Qt		73 _.5	ug/L	7 .3__3	7 .35_	751 ._
, m5A65QR		7A8315	ug/L	722. 1	7 .20 6	732810
, i213_Qt		752C.6	ug/L	7 .A16A	7 .3_	73856_
Pb22 1Qt		73 ._	ug/L	7 .0365	7 .0351	730A.A
Sb2 _AQt		73 C.A	ug/L	7 .1 52	7 .263C	7A .00
Se36_ Qt		73 .A	ug/L	73.A5C	73.A1A	751.C6
Si253_QR		738 A2	ug/L	73.0_	7 .3_20	7C03.6
Sn3A66Qt		75 C._	ug/L	73.05_	7 .1CA	752C.2
SNC235QR		751A.6	ug/L	72.3 3	7 .1A6A	726856
Ti11C6Qt		753_.2	ug/L	7 .63_0	7 .300_	73685A
Tl36 AQt		73 2._	ug/L	73. C5	73. 3A	7333.A
VQ262CQt		7531.0	ug/L	7 ._1 5	7 .322A	7A8553
Zn2 _2Qt		7C63.	ug/L	7 .6A03	7 .2 3	7181 0
YQ1_ QR		73C82_C	9 cs/S	7CA.3	7 .11023	73C82_C
YQ22C1Qt		73C82A2	9 cs/S	73_._C1	7 .33_51	73C82A2
YQ1_ Qt		7233823	9 cs/S	7106.31	7 .3065	7233823

SN3855-001

Medhr d7, my e: Ft ST-2 3_Q UQt a Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 77C15: _PM Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3855-001

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 77C:15: _PM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- . 0C20	ug/L	7 .3C31	736 .2	-15.3_
t l16_3CR		73C0.C	ug/L	71.06A	72.500	7AA.A2
t s3A63Ct		-3.3 6	ug/L	7 .C_	7C3.CA	-2.3_0
BC2 A6Ct		71.A5_	ug/L	7 .1332	7A. 0	733.16
BmC55CCR		75.200	ug/L	7 .5_ A	73 ._1	72A2.6
Be131 CR		7 . 5326	ug/L	7 . 56A0	733._0	-2.2A1
9 m135ACR		70 .0	ug/L	7 .26__	7 . C211	70 C.5
9 d22_5Ct		- . C532	ug/L	7 . 21C0	752. 2	-2.506
9 r 22A_Ct		- . 5522	ug/L	7 . _05	7322.2	73 .13
9 N2_00Ct		7 .5A65	ug/L	7 .2CA6	7C2.21	733.1A
9 u1201Ct		73.630	ug/L	7 . 2_33	73.1_2	-1A.C3
Fe2566CR		721.A6	ug/L	7 .CA11	72. 21	713.3C
KC0__CCR		7256.A	ug/L	730.A0	7_.AA	72.0_6
Li_0 0CR		72.615	ug/L	73.2_A	7C1.2	750._
Mg2 25Ct		7_56.A	ug/L	72.01	7 .C31A	712C.3
Mn250_CR		730.53	ug/L	7 . _551	7 .10C1	73C1._
Mr 2 2 Ct		7 .16_6	ug/L	7 .3_ A	7C .53	72.C 1
, m5A65CR		7283__	ug/L	7 .0C 6	7 . 1C23	7183AA
, i213_Ct		73.251	ug/L	7 . C3CA	71.133	7C.221
Pb22 1Ct		- .C00	ug/L	7 .02_	7352.2	7 .13_5
Sb2 _ACt		72.351	ug/L	73.225	75_.AA	72.56A
Se36_ Ct		7 .5211	ug/L	73.0C	7112.5	7C._51
Si253_CR		7183_	ug/L	72.2_2	7 . 0350	7382A3
Sn3A66Ct		7 .C35C	ug/L	7 .3CA_	715.0_	72.263
SNC235CR		7A.513	ug/L	7 . 6 20	73. 5A	7C15._
Ti11C6Ct		7 .05__	ug/L	7 . A656	73.3AC	-6.3 0
Tl36 ACt		- .63_A	ug/L	7 . _ C0	7_.56_	-3.0C
VC262CCt		- . ___	ug/L	7 .331A	730 .6	-5.655
Zn2 _2Ct		70.31C	ug/L	7 . 211A	7 .120A	7C0.6_
YC1_ CR		7318603	9 cs/S	7C0._30	7 .1C A2	7318603
YC22C1Ct		73C830_	9 cs/S	716.C_1	7 .20A16	73C830_
YC1_ Ct		72 A8C	9 cs/S	7520.56	7 .2513_	72 A8C

SN3855-002

Medhr d7, my e: Ft ST-2 3_O, UCt a   Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmte: 5/22/2 2 77C:16:2APM   Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .3A12	ug/L	7 .C00A	72_ .6	-CC.35
t l16_3CR		7 .50A3	ug/L	71.23_	755_.1	-33.32
t s3A63Ct		73.263	ug/L	7 .C002	71_.60	- .562C
BC2 A6Ct		732._2	ug/L	7 .2553	72. 23	72_.62
BmC55CCR		736. A	ug/L	7 .30_A	7 .62__	7A_2.C
Be131 CR		7 . C0_6	ug/L	7 . 561_	7382C5	-C.6A6
9 m135ACR		72C823	ug/L	7253.3	73. 10	72C8AC
9 d22_5Ct		- . 51 0	ug/L	7 . A 6_	735.2_	-3.6_5
9 r 22A_Ct		73.3A3	ug/L	7 . 65	7A. C3	730.6A
9 N2_00Ct		7 .CCA2	ug/L	7 . C6_	73.3 0	7A.AA0
9 u1201Ct		72. 20	ug/L	7 .05C2	710.23	-1_.06
Fe2566CR		70_C.C	ug/L	72.___	7 .1CA0	76AA.C
KC0__CCR		71852_	ug/L	732._0	7 .156C	73803_
Li_0 0CR		712.C6	ug/L	7C.05	73C._2	720_.1
Mg2 25Ct		7338CA	ug/L	73 3.5	7 .AAC_	7580_6
Mn250_CR		73CA_	ug/L	73.C25	7 .656C	7383AA
Mr 2 2 Ct		7 .101C	ug/L	7 .305_	7C0. 1	72.201
, m5A65CR		73 852	ug/L	7330.3	73.331	73585C
, i213_Ct		72.A65	ug/L	7 .2663	73 .11	76. AC

SN3855-002

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 77C:16:2APM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		-3.C_C	ug/L	7 .0313	7CA.02	-3.115
Sb2 _ACt		73.356	ug/L	7 .26_A	725._3	73.A21
Se36_ Ct		-3.AC2	ug/L	72.C0	731C.3	71.51A
Si253_CR		73C85	ug/L	7A3. 1	7 .55A0	758033
Sn3A66Ct		7 .AA0_	ug/L	7 . 5A55	7_.56_	72.002
SNC235CR		73 C.1	ug/L	7 .6122	7 .A61A	758510
Ti11C6Ct		7 .3 2_	ug/L	7 .30C0	730 .1	-11.15
Tl36 ACt		- .0501	ug/L	7 . __10	7A.0_C	-3.0 A
VC262CCt		- .26A6	ug/L	7 . 00_6	725.66	-3 .20
Zn2 _2Ct		7C.C3_	ug/L	7 . 06 5	73.06	726.0C
YC1_ CR		7318AC3	9 cs/S	73 1._0	7 .0C6 3	7318AC3
YC22C1Ct		73C835_	9 cs/S	76 ._26	7 ._C 2	73C835_
YC1_ Ct		72 _856	9 cs/S	752C.02	7 .25166	72 _856

SN3855-003

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 77C:C1:C_PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .3523	ug/L	7 .2 A	731_.0	-10._5
t l16_3CR		71 .66	ug/L	76. 32	726. A	7A.6
t s3A63Ct		7 . C6_2	ug/L	7 .2C65	75 2.A	-3.16A
BC2 A6Ct		73 . C	ug/L	7 .1_61	71._00	722.50
BmC55CCR		72.1A0	ug/L	7 .3C2A	75.6A2	73_2.C
Be131 CR		- . 162A	ug/L	7 . A C2	72 C.A	-0.050
9 m135ACR		73A823	ug/L	73A1.	73. 5	736835
9 d22_5Ct		- . C156	ug/L	7 . A_C_	7386A1	-3._ 0
9 r 22A_Ct		- .2_36	ug/L	7 . 1 0C	733.0C	76. 66
9 N2_00Ct		7 .10_A	ug/L	7 .16A2	73 5.0	70._ 3
9 u1201Ct		72.A_C	ug/L	7 .06A6	720.6	-2_. 0
Fe2566CR		730.02	ug/L	73.250	70. 6_	721.CC
KC0__CCR		7383CC	ug/L	721.6C	72. 6C	7C00.6
Li_0 0CR		- .C6A3	ug/L	7 .C5 6	76 .52	712.1C
Mg2 25Ct		718_C5	ug/L	73_.6	7 .C_10	738AC5
Mn250_CR		73.CC0	ug/L	7 .3205	7A.A3C	735.CA
Mr 2 2 Ct		7 .2532	ug/L	7 . 53AA	72 .__	73._6A
, m5A65CR		758566	ug/L	71 .60	7 .5513	7A8C53
, i213_Ct		7 .3126	ug/L	7 .2A51	723C.0	7 .A552
Pb22 1Ct		- .0666	ug/L	73.13A	73_C.A	- .213_
Sb2 _ACt		7 .12 1	ug/L	7 .1C25	73 _.6	73.35
Se36_ Ct		-3.16C	ug/L	7 .60	7_6._	71.05A
Si253_CR		758 02	ug/L	7C3.5	7 .A3A1	728 _A
Sn3A66Ct		7 .CA1C	ug/L	7 .12CC	7_0.32	72.1A3
SNC235CR		762.CC	ug/L	73. 2	73.3 1	758 20
Ti11C6Ct		7 .C5 C	ug/L	7 . C30A	76.20_	-2 .6C
Tl36 ACt		-3. 5	ug/L	7 .5 AA	7CA.C0	-3.AA2
VC262CCt		7 . 131A	ug/L	7 . 5A1A	73A_.3	-C.262
Zn2 _2Ct		72.1 C	ug/L	7 . 3C12	7 ._231	735.A
YC1_ CR		73C83AC	9 cs/S	71A.321	7 .2_A0A	73C83AC
YC22C1Ct		73C826A	9 cs/S	736. 2	7 .311 1	73C826A
YC1_ Ct		723380A	9 cs/S	718 _6.3	73.CC62	723380A

SN3855-004

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dme: 5/22/2 2 77C:CA: 0PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SN3855-004

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 77C.CA: 0PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 . 2053	ug/L	7 .30_6	7_C2.6	-352.
t l16_3CR		-311.3	ug/L	73C.5A	73 .65	7C3.31
t s3A63Ct		73.A0_	ug/L	7 .6555	75 .61	- .6350
BC2 A6Ct	W	738_35	ug/L	7A.00A	7 .5C1C	7280 _
BmC55CCR		732C.C	ug/L	7 .361A	7 .355A	7581_
Be131 CR		7 . 20C5	ug/L	7 . 13C3	733C.C	-1.052
9m135ACR	W	72_ 82	ug/L	73A5._	7 . 031C	720 83
9d22_5Ct		7 . 2C1_	ug/L	7 . 2__3	73 6.1	731._A
9r22A_Ct		722.1	ug/L	7 .C332	73.ACC	73C .A
9N2_00Ct		73.10C	ug/L	7 . 30 2	7 .321A	715.30
9u1201Ct		7_.510	ug/L	7 .0AC1	732.	736.C2
Fe2566CR		73C82A	ug/L	721.55	7 .3_C6	73A8_5
KC0__CCR		73C82C	ug/L	7_.233	7 . C1_3	708C31
Li_0 0CR		7CA.1_	ug/L	73.12	72.01	716A.C
Mg2 25Ct	W	7A2853	ug/L	753C.C	7 ._215	71683_
Mn250_CR	W	708_3C	ug/L	735.1	7 .2 6	7_382_
Mr2 2 Ct		7 .A2_6	ug/L	7 . 2A53	71.CC0	71.5CC
, m5A65CR	F	72__8	ug/L	725. A	7 . 6C26	716A81
, i213_Ct		75A. A	ug/L	7 .C020	7 .A3C	73_1.6
Pb22 1Ct		7 . C1C5	ug/L	7 .C112	7660.	72. A0
Sb2 _ACt		7 .CCCC	ug/L	7 .2_A0	7_ .C_	73.5A1
Se36_ Ct		-3.CA_	ug/L	7 .C1A2	726.CA	75.2A3
Si253_CR		731862	ug/L	726.1C	7 .23 0	7585C
Sn3A66Ct		7 . 0100	ug/L	7 .3105	73A_.1	73.A2_
SNC235CR	W	738C23	ug/L	71. 5	7 .2335	70_85
Ti11C6Ct		73. 51	ug/L	7 . 5232	7C.65	73.A6A
Tl36 ACt		-2.CA0	ug/L	7 .51AA	723.__	-33.31
VC262CCt		- .6C6_	ug/L	7 . 1A11	7C. 1_	-5_.6_
Zn2 _2Ct		723._0	ug/L	7 .3025	7 .0656	731_.0
YC1_ CR		73186A_	9cs/S	7_0._11	7 .CA15A	73186A_
YC22C1Ct		73181CA	9cs/S	7C2.__A	7 .136_5	73181CA
YC1_ Ct		7365860	9cs/S	7A_605	7 . CC1A	7365860

SN3855-005

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816

t nmlpso7, my e: RS

t cquiNe7Dmoe: 5/22/2 2 77C.51:2 PM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7 .16A3	ug/L	7 .C360	73 5.C	-3 5.1
t l16_3CR		-360.1	ug/L	76.200	7C.0 3	751.C5
t s3A63Ct		7_5.10	ug/L	73.C00	72.2_	716.11
BC2 A6Ct	W	728256	ug/L	72.1 0	7 .3 23	71805C
BmC55CCR		736 .	ug/L	73.2C2	7 ._51_	7A8 00
Be131 CR		- . 561	ug/L	7 .3633	7122.1	-A.066
9m135ACR	W	715583	ug/L	7A8CC0	72.106	71_583
9d22_5Ct		- . CC	ug/L	7 . 6012	722.32	70._11
9r22A_Ct		75.AC2	ug/L	7 .32_2	72.3_	7C1.6_
9N2_00Ct		72. 3C	ug/L	7 . 0130	71._12	706._3
9u1201Ct		7_.5A6	ug/L	7 .C60A	70.555	72 .00
Fe2566CR		768A_	ug/L	730.5_	7 .30A3	73280_
KC0__CCR	W	7C_823	ug/L	7123.5	7 ._656	72C832
Li_0 0CR		735._C	ug/L	73.110	7A.5C6	7353.5
Mg2 25Ct	W	7_A8__	ug/L	72.603	7 . C120	71281C
Mn250_CR	W	73 8 C	ug/L	75C.60	7 .5C05	7A 8 3
Mr2 2 Ct		71.C33	ug/L	7 . C_C5	73.1_2	735.21
, m5A65CR	W	731C82	ug/L	7000.2	7 .506	736683
, i213_Ct		73C. 3	ug/L	7 . 5 1	7 .15A6	716. 0

SN3855-005

Medhr d7, my e: Ft ST-2 3_O, UCt a | Medhr d7Revisir n: 73816

t nmlpsd7, my e: RS

t cquiNe7Dme: 5/22/2 2 77C:51:2 PM | Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb22 1Ct		7 . 32__	ug/L	7 ._6_5	7585 2	73.050
Sb2 _ACt		- .33__	ug/L	7 .3616	73__.C	73. CC
Se36_ Ct		- .65	ug/L	73.661	72 6.A	7_. 0C
Si253_CR		73383_	ug/L	7_1. 5	7 .5_CA	7C8C 0
Sn3A66Ct		7 .CC_0	ug/L	7 ._325	7310.3	72.30
SNC235CR	W	7283_1	ug/L	73 .53	7 .CA5A	73358C
Ti11C6Ct		72.513	ug/L	7 .35CC	7_.3 1	751.A
Tl36 ACt		-2.2C_	ug/L	7 .3C 2	7_.2C2	-31.16
VC262CCt		- .5ACA	ug/L	7 . 00C0	731.25	-_5.32
Zn2 _2Ct		71.053	ug/L	7 . _066	73.A31	721._0
YC1_ CR		7318A5C	9 cs/S	7316._C	73. 06	7318A5C
YC22C1Ct		73182C0	9 cs/S	730.61	7 .31515	73182C0
YC1_ Ct		736C86A	9 cs/S	731_.23	7 . _6A5A	736C86A

CCV

Medhr d7, my e: Ft ST-2 3_O, UCt a | Medhr d7Revisir n: 73816

t nmlpsd7, my e: RS

t cquiNe7Dme: 5/22/2 2 775:3C:3APM | Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		7C61.A	ug/L	7A.2 6	73.__1	73281C
t l16_3CR		73284A5	ug/L	7335.0	7 .6 2	73 82A
t s3A63Ct		7CA_.0	ug/L	7_.2AA	73.262	711C.5
BC2 A6Ct		75 5.C	ug/L	7A.0 A	73.021	76C5.
BmC55CCR		753 .	ug/L	72.113	7 .C503	7228 A
Be131 CR		75 A.2	ug/L	7_. 33	73.3A1	71 855
9 m135ACR		732806	ug/L	702.25	7 .5_5	7318C1
9 d22_5Ct		7C0_.	ug/L	70.CA3	73.502	7338A0
9 r 22A_Ct		7C65.0	ug/L	7A.1A1	73._63	7183A2
9 N2_00Ct		75 1.3	ug/L	70.13A	73.C5C	7685A6
9 u1201Ct		7523.1	ug/L	7A.606	73.021	708336
Fe2566CR		7328_1	ug/L	763.2_	7 .0221	73_801
KC0__CCR		73280_	ug/L	7356.2	73.2CA	7_803C
Li_0 0CR		75 6.	ug/L	72.1C	7 .C56A	7186 5
Mg2 25Ct		73282A	ug/L	72 2.1	73._C0	7_81A
Mn250_CR		75 _.5	ug/L	7_._23	73.1 0	7C831
Mr 2 2 Ct		75 _.3	ug/L	76.02	73.623	7285_0
, m5A65CR		731831	ug/L	73 3.5	7 .002_	7368AA
, i213_Ct		753 .	ug/L	70.A00	73.5CC	7385A_
Pb22 1Ct		7C0A.A	ug/L	70.01	73._3C	7A_3._
Sb2 _ACt		7C62.1	ug/L	7A.5 A	73.02A	7166.C
Se36_ Ct		7CA2.A	ug/L	7A.200	73.035	72C1.2
Si253_CR		7318 _	ug/L	752.03	7 .C 1C	75820C
Sn3A66Ct		7C0C.0	ug/L	7A._C0	73.A22	75 2.
SNC235CR		752_.0	ug/L	7C.02	7 .A6_1	72A801
Ti11C6Ct		7C61.1	ug/L	7A.3C	73._5	7368 2
Tl36 ACt		7C62._	ug/L	7_.5A	73.11_	75C1.6
VC262CCt		7C61.1	ug/L	7_.022	73.1_1	7A8263
Zn2 _2Ct	W	7C0 .5	ug/L	70._C	73._2C	718221
YC1_ CR		73C8302	9 cs/S	725.66_	7 .3A1C1	73C8302
YC22C1Ct		73C851A	9 cs/S	73C_. 5	73. C_	73C851A
YC1_ Ct		723C852	9 cs/S	7386_2.2	7 .63C__	723C852

CCB

Medhr d7, my e: Ft ST-2 3_O, UCt a | Medhr d7Revisir n: 73816

t nmlpsd7, my e: RS

t cquiNe7Dme: 5/22/2 2 775:3A:12PM | Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 775:3A:12PM — Smy 4le7Tp4e: Q9

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .C3CC	ug/L	7 .33C1	720.5A	-CC.C_
t l16_3CR		73 .2	ug/L	73.220	732. 1	-36.65
t s3A63Ct		7 .5333	ug/L	7 .2C66	7CA.AA	-3. 6
BC2 A6Ct		73._10	ug/L	7 .30_3	73 .0_	70.56A
BmC55CCR		- . 2__3	ug/L	7 .11 0	7382C1	750._1
Be131 CR		- . 2A23	ug/L	7 . A6_5	71830A	-5.51_
9 m135ACR		73.125	ug/L	7 ._ A6	7C5.60	-2 .66
9 d22_5Ct		7 . 25_2	ug/L	7 . 66_1	71A.A6	- .AA60
9 r 22A_Ct		- .3100	ug/L	7 . 52__	71A.2C	76.616
9 N2_00Ct		- . 2C20	ug/L	7 .36 1	70AC.C	7 . 1_1_
9 u1201Ct		7 .1 __	ug/L	7 .555C	73A3.3	-_3._C
Fe2566CR		75._53	ug/L	7 .1AAC	7_.A02	70.C 2
KC0__CCR		-65.21	ug/L	7_5.A2	7_6.32	-3A_.A
Li_0 0CR		7 .5055	ug/L	7 .C6_	7A_.2	7C .21
Mg2 25Ct		73.31A	ug/L	73.023	7353.1	-A. 52
Mn250_CR		- .260	ug/L	7 .33C1	71A.C6	7 .1C2_
Mr 2 2 Ct		73.5C2	ug/L	7 .160A	725.A	7A.3A5
, m5A65CR		73.613	ug/L	75.2 5	72_6._	-5 .25
, i213_Ct		7 .2C5	ug/L	7 .1306	7326.0	73.212
Pb22 1Ct		- .A31	ug/L	7 .1_36	7CC.53	- .2510
Sb2 _ACt		7 .A350	ug/L	7 .A5AA	73 5.1	73.555
Se36_ Ct		7 .5502	ug/L	7 .1 C1	75C._	7C.011
Si253_CR		7C2.3_	ug/L	76.2_	723.6_	706.26
Sn3A66Ct		7 .1221	ug/L	7 . 0033	72.161	72.220
SNC235CR		- .3 3_	ug/L	7 .3052	7302.C	-26.2C
Ti11C6Ct		7 .5A2	ug/L	7 . 066	7 .310C	-3_. C
Tl36 ACt		7 .2333	ug/L	7 .3_23	70_.A3	- .53C5
VC262CCt		7 .3_16	ug/L	7 .20_1	73_A._	-2.2CC
Zn2 _2Ct		7 .322A	ug/L	7 . 2 3	73_.1	73. 65
YC1_ CR		73C8 6	9 cs/S	7A1._CC	7 .561_1	73C8 6
YC22C1Ct		73C81A3	9 cs/S	73A.3	7 .325A_	73C81A3
YC1_ Ct		72318AC	9 cs/S	7C8C30.A	72. _56	72318AC

SN3855-006

Medhr d7, my e: Ft ST-2 3_O, UCt a — Medhr d7Revisir n: 73816
t nmlpso7, my e: RS
t cquiNe7Dmoe: 5/22/2 2 775:22:5APM — Smy 4le7Tp4e: a nknr wn

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
t g12A Ct		- .116	ug/L	7 .21A2	70 .25	-05.1C
t l16_3CR		7_.625	ug/L	733.5A	73_0.2	-35.23
t s3A63Ct		71. A3	ug/L	7 .C21	731.01	7 .C12C
BC2 A6Ct		722.21	ug/L	7 .2 33	7 .6 C_	7C1.A3
BmC55CCR		7__.C3	ug/L	7 .C_11	7 ._600	728A_3
Be131 CR		7 .2 56	ug/L	7 . 2303	73 .5C	7_.A10
9 m135ACR		73 853	ug/L	7 .203A	7 . 25A_	73 806
9 d22_5Ct		- . _0C5	ug/L	7 . 2650	7C1.AC	73.321
9 r 22A_Ct		- .3_21	ug/L	7 . _5AC	7C .5_	76.50_
9 N2_00Ct		7 .2055	ug/L	7 .13 1	7332._	75._C1
9 u1201Ct		7 .2233	ug/L	7 .3326	753. _	-_ .03
Fe2566CR		7186 6	ug/L	730.2C	7 .CC 6	758 56
KC0__CCR		758 61	ug/L	73A.C2	7 .1_30	7285C
Li_0 0CR		73C.5_	ug/L	71.20A	722.53	73C1.5
Mg2 25Ct		75831A	ug/L	75.106	7 .3 C0	7285_6
Mn250_CR		73C_.6	ug/L	7 .0A__	7 .5155	738301
Mr 2 2 Ct		73. 5_	ug/L	7 . _2__	75.615	75._3A
, m5A65CR	W	7508A6	ug/L	7 .C6A	7 . A_	7A58A1
, i213_Ct		- .22C6	ug/L	7 .2 _A	763.65	- .5001

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagents and Consumables Information:

Method: 200.7

HNO3: MSR175 **HCL:** MSR173 **Digestion Vessels:** MLD026000009

1:1 HNO3: MR2670 **1:1 HCL:** MR2671

Pipet **LCS/Spiking Information:**

MH CLPP-SPK-I (ID/Vol): MS7225 / .05 mL

MH CLPP-SPK-INT1 (ID/Vol): MW19389 / .5 mL

CLPP-SPK-INT2 (ID/Vol): MW19390 / .5 mL

— Spike (ID/Vol): — / — mL

Heat Source ID : D

Start Time: 10:15 **/Temp.** 94 **°C**

End Time: 16:23 **/Temp.** 93 **°C**

Thermometer ID/Pos: AU30 / 1.3

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle	pH <2
LCSWNE18ICW2	NE18ICW2	0.05	L	0.05	L	AQ	IC	MC	05/18/2020	—	—
PBWNE18ICW2	NE18ICW2		L		L	AQ	IC	MC	05/18/2020	—	—
SN3711-001	NE18ICW2		L		L	AQ	IC	MC	05/18/2020	A	✓
SN3711-002	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3711-003	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-001	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-002	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-003	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-004	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-005	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-005P	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-005S	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-006	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-007	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-008	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-009	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-010	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-011	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-012	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-013	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-014	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-015	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-016	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		
SN3779-017	NE18ICW2		L		L	AQ	IC	MC	05/18/2020		

REVIEWED
RS 5/19/20
KATAHDIN ANALYTICAL
METALS SECTION

MC 5/18/20

QA-064-Revision 5 -12/07/2018 **Digestion performed by:** MC **On:** 5/18/20 **Page:** NE084 **Revision:** 00

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagents and Consumables Information:

Method: 200.7

HNO3: MSR175 **HCL:** MSR180 **Digestion Vessels:** 200103

1:1 HNO3: MR2670 **1:1 HCL:** MR2670

Pipet	LCS/Spiking Information:
M11	CLPP-SPK-1 (ID/Vol): MS2225 / .05 mL
M21	CLPP-SPK-INT1 (ID/Vol): MW19389 / .5 mL
⊥	CLPP-SPK-INT2 (ID/Vol): MW19390 / .5 mL
—	___ Spike (ID/Vol): — / — mL

Heat Source ID : P

Start Time: 9:31 **/Temp.** 95 **°C**

End Time: 5:57 **/Temp.** 90 **°C**

Thermometer ID/Pos: ALC30 13:3

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle	pH <2
LCSWNE21ICW2	NE21ICW2	.05	L	.05	L	AQ	IC	MC	05/21/2020	—	—
PBWNE21ICW2	NE21ICW2			L			L	AQ	IC	MC	05/21/2020	—	—
SN3772-001	NE21ICW2			L			L	AQ	IC	MC	05/21/2020	B	✓
SN3779-018	NE21ICW2			L			L	AQ	IC	MC	05/21/2020	A		
SN3779-018P	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-018S	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-019	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-020	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-021	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-022	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				
SN3779-023	NE21ICW2			L			L	AQ	IC	MC	05/21/2020				

REVIEWED
RS 5/22/20
KATAHDIN ANALYTICAL
METALS SECTION

RS 5/22/20

QA-064-Revision 5 -12/07/2018 **Digestion performed by:** MC **On:** 5/21/20 **Page:** NE105 **Revision:** 00

Amec Foster Wheeler HDR
JOINT VENTURE

APPENDIX E

WELL ABANDONMENT PHOTOS


CAUTION
See back panel for caution before use
PRECAUCIÓN
Véase el panel posterior para conocer las precaucionesantes de su uso
HOLEPLUG®
3/8"
COARSE GRADE WYOMING SODIUM BENTONITE
CLASIFICACIÓN GENERAL BENTONITA DE SODIO WYOMING
SIZED & GRADED
CLASIFICACIÓN SEGÚN EL TAMAÑO
NATURAL SODIUM BENTONITE
BENTONITA DE SODIO NATURAL
DESIGNED FOR:
DISEÑADA PARA:
•PLUGGING & ABANDONMENT OF BOREHOLES
EL SELLADO Y ABANDONO DE LAS PERFORACIONES
•LOW PERMEABLE ANNULAR SEAL
EL SELLADO ANULAR DE BAJA PERMEABILIDAD
•STEMMING SEISMIC SHOTHOLES
LA DETENCIÓN DEL FLUJO DE LOS AGUJEROS SÍSMICOS
•EFFECTIVE SEAL ABOVE FILTER PACK
EL SELLADO EFICAZ POR ENCIMA DE LOS PAQUETES DE FILTROS
•ENHANCED STRUCTURAL INTEGRITY
EL INCREMENTO DE LA INTEGRIDAD ESTRUCTURAL
PESO NETO / NET WEIGHT
22.68 KILOS / 50 POUNDS
HOLEPLUG 3/8"
HEALTH SALUD * 0
FLAMMABILITY INFLAMABILIDAD 0
PHYSICAL HAZARD PELIGRO FISICO 0
PERSONAL PROTECTION PROTECCIÓN PERSONAL At
HALLIBURTON
NSF®
Certified to NSF/ANSI 60
Baroid Industrial Drilling Products
P.O. Box 1675, Houston, Texas 77251
www.baroididp.com
877-379-7412 or 281-871-4613
3/8"

APPENDIX F

Farmland Protection Policy Act Concurrence Package

From:	Dobbins-Noble, Lesley C CIV
To:	"Hodgman, Lindsay - NRCS, Bangor, ME"
Cc:	Bills, Bob - NRCS, Machias, ME
Subject:	RE: FPPA assessment for U.S. Coast Guard property in Perry, Maine
Date:	Monday, December 9, 2019 10:12:00 AM
Attachments:	completed form AD-1006_USCG Eastport housing.pdf

Lindsay,

Thank you very much for the quick turn-around. Unless I am missing something, I believe that form AD-1006 is complete now that you have added your assessment (see attached). Let me know if I am mistaken.

Best,
Lesley

-----Original Message-----
From: Hodgman, Lindsay - NRCS, Bangor, ME <lindsay.hodgman@usda.gov>
Sent: Friday, November 29, 2019 11:58 AM
To: Dobbins-Noble, Lesley C CIV <Lesley.C.DobbinsNoble@uscg.mil>
Cc: Bills, Bob - NRCS, Machias, ME <bob.bills@usda.gov>
Subject: [Non-DoD Source] RE: FPPA assessment for U.S. Coast Guard property in Perry, Maine

Hi Lesley ,

Re: USCG Station Eastport Housing Project Eastport ME

After reviewing your correspondence dated Nov 25, 2019, it appears based on the provided location map and soil map that the project site may include areas which contain soils of prime or statewide importance. Projects are subject to Farmland Protection Policy Act (FPPA) requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance (funding) from a Federal agency. Parts II, IV, and V of form AD-1006, the Farmland Conversion Impact Rating (attached) have been completed. The project site is mapped as CtB Creasey gravelly silt loam 3 to 8 percent slopes. CtB is Farmland of Statewide Importance. The Relative Value of the project area is 81. Based on the information provided for Parts Vl and Vll the total points for the project is 153.

If the total point score is 160 or less, then the project is in full compliance with (FPPA) and no further action is required. If the total point score is above 160 points, then alternative design or location should be considered that might reduce the total point score. If this is not possible, then an explanation should be provided in Block 5 at the bottom of the form. Additional information about completing the form and the Farmland Protection Policy Act can be found at the following web site: https://urldefense.proofpoint.com/v2/url?u=http-3A__www.nrcs.usda.gov_wps_portal_nrcs_main_national_landuse_fppa_&d=DwIFAg&c=0NKfg44GVknAU-XkWXjNxQ&r=KvMKn4pvkWGuKJWpXrHZtT1odN66kZzOpyHFBHGY-zM&m=ekAmFtYnHg-dBhbVuNWkORhbj4wfWDYFqKsyTHQCY8Q&s=eRoPag4fPlZQ-GY9Ri_TOtYhIXNvDrzGzILYYy8PGV0&e= .

Please provide a final copy of the completed AD-1006 to me for NRCS records and retain a copy for your records regardless of the total point score.

If you have any questions, please feel free to contact me.

Thank you

Lindsay Hodgman

-----Original Message-----
From: Dobbins-Noble, Lesley C CIV <Lesley.C.DobbinsNoble@uscg.mil>
Sent: Monday, November 25, 2019 3:26 PM
To: Hodgman, Lindsay - NRCS, Bangor, ME <lindsay.hodgman@usda.gov>
Cc: Bills, Bob - NRCS, Machias, ME <bob.bills@usda.gov>; Hylton, Rick D CIV <Rick.D.Hylton@uscg.mil>
Subject: FPPA assessment for U.S. Coast Guard property in Perry, Maine

Ms. Hodgman,

At the direction of Bob Bills, I am submitting to you a completed form AD-1006 and associated site maps and soil survey for a site the Coast Guard is proposing for residential housing for members of Station Eastport. The site is located at 576 Shore Road in Perry. The entire site is about 75 acres in size, with the majority of the site being wooded. Approximately 10 acres up near Shore Road are in early successional state after being used for horse pasture up until about four years ago. This area is the portion of the site proposed for construction of 4-8 single family homes and is, to the best of my knowledge, classified as "farmland of statewide importance." The site was formerly operated (by the previous owner) as an equine rescue/sanctuary organization. The Coast Guard has found no evidence that the land was ever used for crops.

Please advise if you need anything else from me to complete your review.

Best,
Lesley

Lesley Dobbins-Noble

Environmental Protection Specialist
U.S. Coast Guard Facilities Design and Construction Center
5505 Robin Hood Road, Suite K
Norfolk, VA 23513
(757) 852-3410

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 25 November 2019
Name of Project USCG Station Eastport Housing Project	Federal Agency Involved U.S. Coast Guard
Proposed Land Use residential housing	County and State Washington County, Maine
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 11/26/2019 — Person Completing Form: Lindsay Hodgman

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑	NO ☐	Acres Irrigated 0	Average Farm Size 380

Major Crop(s) Blueberries	Farmable Land In Govt. Jurisdiction Acres: 215,256 % 23	Amount of Farmland As Defined in FPPA Acres: 21007 % 22
Name of Land Evaluation System Used LESA washington Co.	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 11/29/2019

PART III *(To be completed by Federal Agency)*		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		10			
B. Total Acres To Be Converted Indirectly		NA			
C. Total Acres In Site		75			
PART IV *(To be completed by NRCS)* Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		0			
B. Total Acres Statewide Important or Local Important Farmland		17			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		<.01			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		3.7			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		81			
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	15			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	2			
10. On-Farm Investments	(20)	5			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	72	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	81	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	72	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	153	0	0	0

Site Selected: site A	Date Of Selection Sep 2018	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

This property was purchased by USCG's Civil Engineering Unit Providence after scoring of a suite of site evaluation factors for multiple sites in the area. These factors did not take farm use into consideration per se.

Name of Federal agency representative completing this form: Lesley Dobbins-Noble	Date: 25 Nov 2019

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

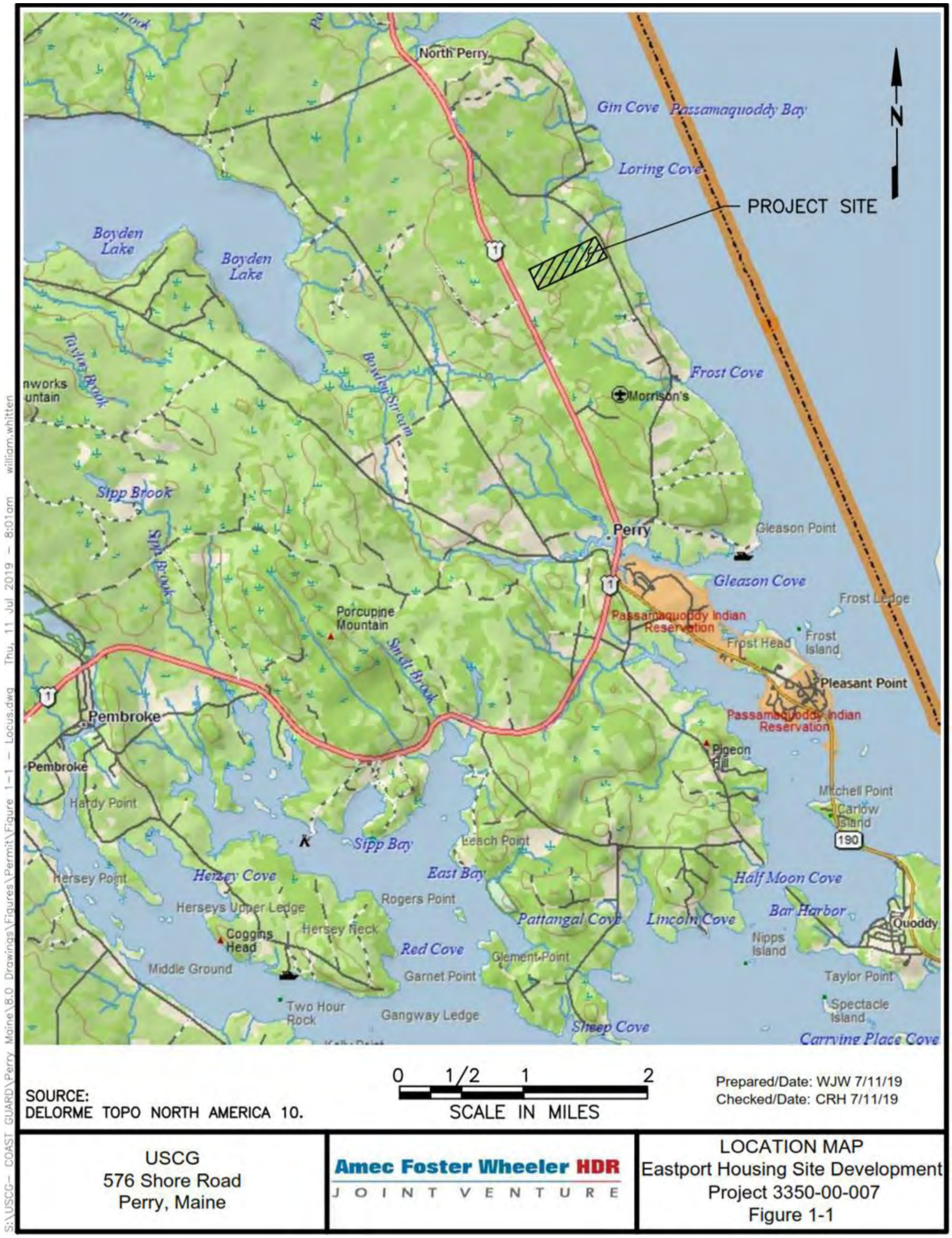
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

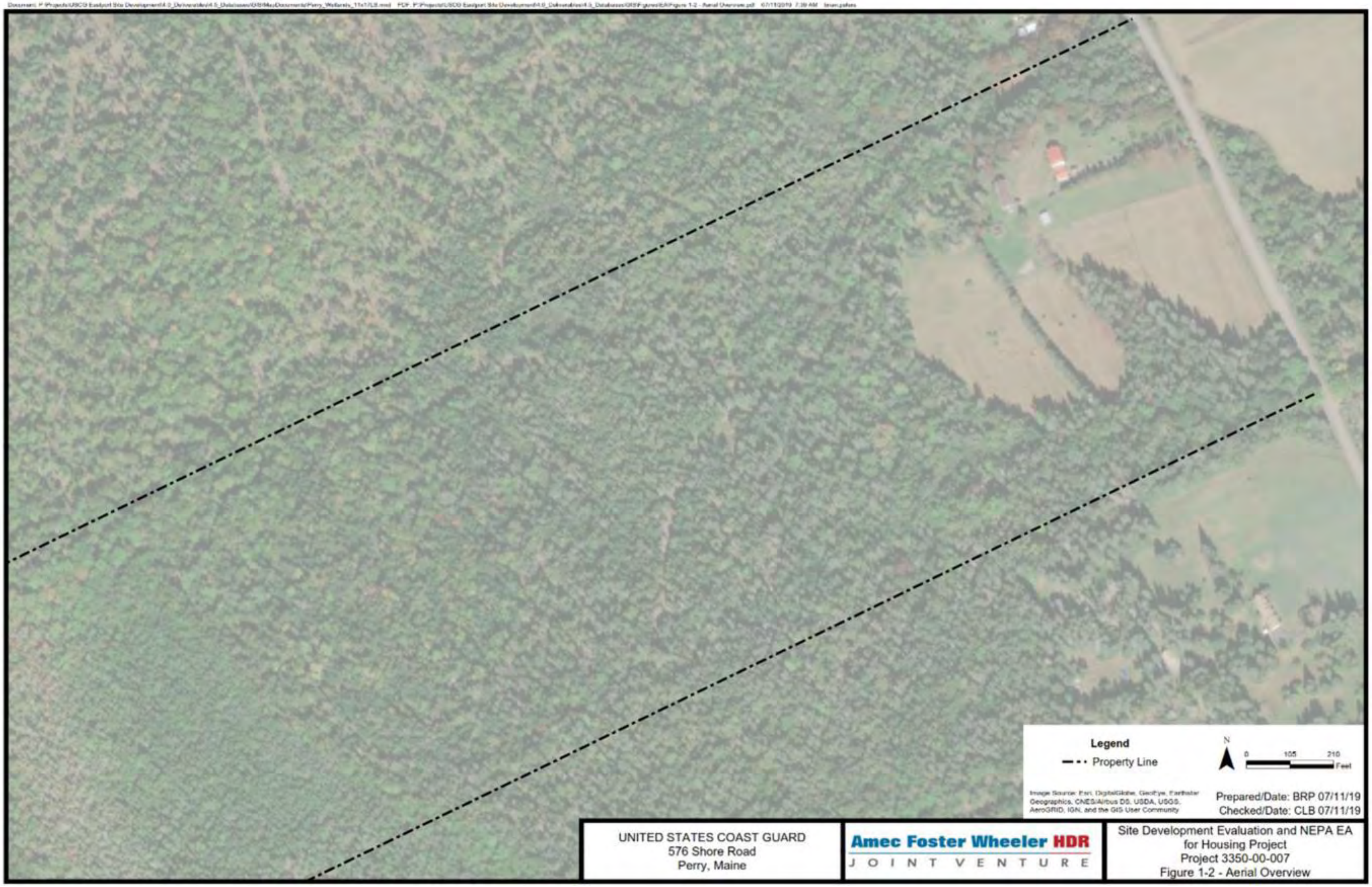
$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.



Location on USGS Robbinston quadrangle map



Legend
Property Line
N
0
105
210
Feet
Image Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Prepared/Date: BRP 07/11/19
Checked/Date: CLB 07/11/19
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
Amec Foster Wheeler HDR
JOINT VENTURE
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 1-2 - Aerial Overview

Soil Map—Washington County Area, Maine
(Eastport Housing locus)

Map Scale: 1:2,060 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County Area, Maine
Survey Area Data: Version 21, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CtB	Creasey gravelly silt loam, 3 to 8 percent slopes	16.9	82.1%
LKB	Lamoine-Rawsonville-Scantic complex, 0 to 8 percent slopes, very stony	3.7	17.9%
Totals for Area of Interest		**20.6**	**100.0%**

APPENDIX G

Threatened, Endangered, and Sensitive Species Information and Correspondence

Amec Foster Wheeler HDR
JOINT VENTURE

July 3, 2019

From: Charles R. Harman, P.W.S.
Principal Ecologist
Amec Foster Wheeler HDR JV
285 Davidson Avenue, Suite 405
Somerset, NJ 08873
charles.harman@woodplc.com
908-507-2413

To: U.S. Fish and Wildlife Service
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, Maine 04473

RE: USFWS THREATENED/ENDANGERED SPECIES CONFIRMATION OF FINDINGS, WASHINGTON COUNTY, MAINE;
USCG EASTPORT HOUSING DEVELOPMENT

Wood Environment & Infrastructure Solutions, Inc. (Wood) has reviewed the referenced project using the Maine Field Office's online project review process and have followed all guidance and instructions in completing the review. Wood concluded that no threaten and/or endangered species have the potential to be present at the location where the proposed project will be completed. We completed our review on June 10, 2019 and are submitting our project review package in accordance with the instructions for further review.

Our proposed action consists of: A 75-acre site at 576 Shore Road in Perry, Maine (County of Washington) in which the U.S. Coast Guard (USCG) is proposing the development of either six (6) duplex housing units (12 units total) consisting of four (4) 3-bedroom units (8 units total) and two (2) 4-bedroom units (4 units total) or twelve (12) single family units consisting of eight (8) 3-bedroom units and four (4) 4-bedroom units. A 5,000-square foot maintenance building and a 2,000-square foot community building are also being proposed. In addition, all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community will be provided.

The location of the project and the action area are identified on **Figure 1** and **Figure 2** of the accompanying document. The project is expected to be completed by 2021, with construction beginning in the summer of 2020.

This project review is needed by the U.S. Coast Guard, the Federal Action Agency, for completion of the National Environmental Policy Act (NEPA) documentation.

The enclosed project review package provides the information about the species, critical habitat, and bald eagles considered in our review, and the species conclusions included in the package identifies our determinations for the resources that may be affected by the project.

It is our opinion that the project will not impact threatened and/or endangered species and the USCG requests concurrence of that.

For additional information, please contact Charles Harman at the address listed above.

Sincerely,

Charles R. Harman, P.W.S.
Principal Ecologist

Enclosures:

1) ESA Concurrence Request, Site Development for Eastport Housing Project

ESA Concurrence Request

Site Development for U.S. Coast Guard Eastport Housing Project

Contract Number: 70Z05018DAMFWHD02

Task Order: 70Z04719FPEPTEV00

Prepared For:

U.S. Coast Guard
Facilities Design and Construction Center
5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431

Prepared By:

Amec Foster Wheeler HDR
JOINT VENTURE

July 3, 2019

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LIST OF ACRONYMS

BGEPA	Bald and Golden Eagle Protection Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
ESA	Endangered Species Act
IPaC	Information, Planning, and Conservation
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NAVD 88	North American Vertical Datum 1988
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
Service	United States Fish and Wildlife Service
SHPO	State Historic Preservation Office
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USDOI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WOTUS	Waters of the United States

1.0 INTRODUCTION

The United States Coast Guard (USCG) is submitting this Endangered Species Act (ESA) Consultation Package for a proposed housing development in Perry, Maine. The USCG station in Eastport, Maine is one of two USCG stations located within Washington County. This station consists of a working crew of eight search and rescue personnel and two boats that serve a 100-mile stretch of coastline. The USCG station building was constructed in 2004 and includes the local emergency response center. It is located adjacent to the repaired and expanded Eastport Breakwater on the downtown waterfront. The Eastport Breakwater re-opened in 2017, serving the commercial fishing fleet, the USCG, and visitors arriving from land and sea (City of Eastport, 2018).

The USCG is proposing the development of family housing for USCG service members reporting to USCG Station Eastport, Maine. The USCG is requesting this determination to ensure that the proposed housing project is consistent with the ESA.

1.1 Background

The USCG has recently acquired a 75-acre site located at 576 Shore Rd in Perry, Maine (County of Washington). This heavily wooded property is the proposed location for the Eastport Housing Project. This property currently contains a gravel driveway that leads to a 2,240-square foot, 2-story, colonial-style home built in 1968. A 2-story barn (24 feet wide by 64 feet long), a workshop, a wood shed, a wood boiler unit, and a shed/lean-to are also present. All these structures are in the eastern 1/3 of the land parcel. The house and barn are supported by private water supply wells. A 1,000-gallon concrete septic tank and associated leach field serve as the waste water disposal system for the property.

The USCG is proposing to develop the property under one of the two following scenarios:

1. Six (6) duplex housing units (12 units total) consisting of four (4) 3-bedroom units (8 units total) and two (2) 4-bedroom units (4 units total). Additionally, provide a 5,000-square foot maintenance building and a 2,000-square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community; or

2. Twelve (12) single family units consisting of eight (8) 3-bedroom units and four (4) 4-bedroom units. Provide a 5,000-square foot maintenance building and a 2,000-square foot community building. Provide all associated roads, sidewalks, storm water controls, street lights, utilities, and typical infrastructure to support this community.

Three-bedroom units would be 2,300 gross square feet and the 4-bedroom units would be 2,500 gross square feet.

2.0 ENVIRONMENTAL CONDITIONS

The subject property is located at 576 Shore Road (Book 2198 Page 285) in the Town of Perry, Maine (Lot 4, Block 013-004-000) (see **Figure 1**). As shown below, the property has been historically development and used for agricultural purposes. Much of the area just off Shore Road has been cleared and disturbed. The remainder of the area is wooded.

Topographically, the subject property is flat with a gradual grade downwards to the west. Small, unnamed brooks are located at the northern and southern edges of the property. The undeveloped portions of the property are heavily wooded. Soils through the developed section of the property are listed as Creasey gravelly silt loam, transitioning westward to Lamoine-Rawsonville Scantic Complex, 0 – 8% slopes, very stony.

A delineation of wetlands on the subject property identified several wetland units. As shown on **Figure 3**, there is a wetland located directly west of the cleared section of the subject property that has been categorized as a palustrine deciduous leafed, forested wetland (PF01). The wetland areas are dominated in the tree stratum by such species as red maple, balsam fir, red spruce, white birch, and yellow birch. In the subcanopy stratum, commonly observed species include winterberry and speckled alder. A vernal pool complex was identified in the western most section of the property, well away from any proposed development.

3.0 DESKTOP RESEARCH RESULTS

The list of potential threatened and/or endangered species for Maine is provided in **Appendix A**. A letter has been sent to the Maine Natural Areas Program requesting an Environmental Site Review of the subject project for rare and exemplary botanical features (see **Appendix B**). The Maine Natural Areas Program has noted that a rare and exemplary botanical feature has been found in proximity to the project area (**Appendix C**). Botanical notes for the species are included as **Appendix D**.

A field survey to identify whether this species is present onsite has not been conducted. It is anticipated that they USCG will evaluate further examine the property for the presence of this species during the site plan development stage of the project prior to construction.

A request was submitted to the USFWS for a list of threatened and endangered species that may potentially occur in the subject property. The USFWS provided an Information for Planning, and Consultation (IPaC) document in return (see **Appendix E).** The IPaC indicated the possible presence of only one species, the federally threatened northern long-eared bat (*Myotis septentrionalis*), as potentially present at the site. The USFWS provided a verification letter (**Appendix F**) that concluded that the Programmatic Biological Opinion (PBO) that was prepared by the USFWS satisfies and concludes the responsibilities for proposed project under ESA Section 7(a)(2) with respect to the northern long-eared bat.

.

FIGURES

SOURCE:
DELORME TOPO NORTH AMERICA 10.

0 1/2 1 2
SCALE IN MILES

Prepared/Date: WJW 6/11/19
Checked/Date: CRH 6/11/19

USCG 576 Shore Road Perry, Maine	wood.	LOCATION MAP Eastport Housing Site Development Project 3350-00-007 Figure 1

S:\USCG- COAST GUARD\Perry Maine\8.0 Drawings\Figures\Figure 1 - Locus.dwg Wed, 12 Jun 2019 - 11:13am william.whitten

Prepared/Date: WJW 6/13/19
Checked/Date: CRH 6/13/19

UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine

wood.

Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 3 - ZONE BOUNDARIES

APPENDIX A

MAINE'S ENDANGERED SPECIES LIST

State List of Endangered & Threatened Species

Endangered and Threatened inland fish and wildlife species in Maine are listed either under Maine's Endangered Species Act [MESA], the U.S. Endangered Species Act [ESA], or both. Species listed under MESA receive state protection; species listed under ESA receive federal protection; and species listed under both receive state and federal protection.

The Maine Department of Inland Fisheries and Wildlife holds management responsibility for inland fish and wildlife listed under MESA, and shares responsibility with the U.S. Fish and Wildlife Service [USFWS] for inland fish and wildlife listed under ESA.

Endangered and Threatened marine species are listed under Maine's Marine Endangered Species Act or ESA. The Maine Department of Marine Resources (MDMR) has responsibility for these species.

The Maine Endangered Species Act applies only to animals - plants are not included in the legislation. The Maine Natural Areas Program maintains an "official" list of rare and endangered plants in Maine.

There are currently 26 inland fish and wildlife species listed as Endangered and 25 listed as Threatened under Maine's Endangered Species Act [MESA], some of which are also listed under the U.S. Endangered Species Act [ESA].

Information about the status, life history, and conservation of each listed species is available in a fact sheet linked to the species name in the following lists. Fact sheets are available in PDF format.

Species listed through the Maine Department of Inland Fisheries and Wildlife under Title 12 § 12803. Marine species listed separately through the Maine Department of Marine Resources under Title 12 § 6975, and federally listed species not listed under Maine's Endangered Species Act, are not included in this list.

Maine's Endangered Species

October 15, 2015

Birds

- American Pipit (PDF) (*Anthus rubescens*) (breeding population only) (species plan)
- Black-crowned Night Heron (*Nycticorax nycticorax*)
- Black Tern (PDF) (*Chlidonias niger*)
- Golden Eagle (PDF) (*Aquila chrysaetos*) (species plan)
- Grasshopper Sparrow (PDF) (*Ammodramus savannarum*)

- Least Bittern (*Ixobrychus exilis*)
- Least Tern (PDF) (*Sterna antillarum*) (species plan)
- Peregrine Falcon (PDF) (*Falco peregrinus*) (breeding population only)
- Piping Plover (PDF) (*Charadrius melodus*) (species plan)**
- Roseate Tern (PDF) (*Sterna dougallii*) (species plan)*
- Sedge Wren (PDF) (*Cistothorus platensis*)

Fish

- Redfin Pickerel (*Esox americanus americanus*)

Invertebrates

Beetles

- Cobblestone Tiger Beetle *(Cicindela marginipennis)*

Butterflies and Skippers

- Edwards' Hairstreak (PDF) (*Satyrium edwardsii*)
- Frigga Fritillary *(Boloria frigga)*
- Hessel's Hairstreak (PDF) (*Callophrys hesseli*)
- Juniper Hairstreak (*Callophrys gryneus*)
- Katahdin Arctic (PDF) (*Oenis polixenes katahdin*)

Dragonflies and Damselflies

- Rapids Clubtail (*Gomphus quadricolor*)

Snails

- Six-whorl Vertigo (Vertigo morsei)

Mammals

- Little Brown Bat *(Myotis lucifugus)*
- New England Cottontail (*Sylvilagus transitionalis*) (species plan)
- Northern Long-eared Bat *(Myotis septentrionalis)***

Reptiles

Snakes

- Black Racer (PDF) (*Coluber constrictor*) (species plan)

Turtles

- Blanding's Turtle (PDF) (*Emydoidea blandingii*) (species plan)
- Box Turtle (PDF) (*Terrapene carolina*) (species plan)

Maine's Threatened Species

October 15, 2015

Birds

- Arctic Tern (PDF) (*Sterna paradisaea*) (species plan)
- Atlantic Puffin (PDF) (*Fratercula arctica*) (species plan)
- Barrow's Goldeneye (*Bucephala islandica*) (species plan)
- Common Gallinule (*Gallinula chloropus*)
- Great Cormorant (*Phalacrocorax carbo*) (Breeding population only)
- Harlequin Duck (PDF) (*Histrionicus histrionicus*) (species plan)
- Razorbill (PDF) (*Alca torda*) (species plan)
- Short-eared Owl (*Asio flammeus*) (Breeding population only)
- Upland Sandpiper (PDF) (*Bartramia longicauda*) (species plan)`

Fish

- Swamp Darter (PDF) (*Etheostoma fusiforme*)

Invertebrates

Butterflies and Skippers

- Clayton's Copper (PDF) (*Lycaena dorcas claytoni*) (species plan)
- Purple Lesser Fritillary (*Boloria chariclea grandis*)
- Sleepy Duskywing (*Erynnis brizo*)

Dragonflies and Damselflies

- Boreal Snaketail (*Ophiogomphus colubrinus*)
- Ringed Boghaunter (PDF) (*Williamsonia lintneri*)

Freshwater Mussels

- Brook Floater (PDF) (*Alasmidonta varicosa*)
- Tidewater Mucket (PDF) (*Leptodea ochracea*)
- Yellow Lampmussel (PDF) (*Lampsilis cariosa*)

Mayflies

- Roaring Brook Mayfly (PDF) (*Epeorus frisoni*)

- Tomah Mayfly *(Siphlonisca aerodromia)*

Moths

- Pine Barrens Zanclognatha (PDF) (*Zanclognatha martha*)
- Twilight Moth (PDF) (*Lycia rachelae*)

Mammals

- Eastern Small-footed Bat *(Myotis leibii)*
- Northern Bog Lemming (PDF) (*Synaptomys borealis*)

Reptiles

- Spotted Turtle (PDF) (*Clemmys guttata*) (species plan)

**** Federally listed as Endangered***
***** Federally listed as Threatened***

APPENDIX B

REQUEST TO MAINE NATURAL AREAS PROGRAM

Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
Portland, ME, 04101,USA
T: 207-775-5401
www.woodplc.com

From: Charles H. Lyman
Wood Environment and Infrastructure Solutions
511 Congress Street
Portland, Maine 04101
Charles.lyman@woodplc.com
(207) 828-3280

To: Maine Natural Areas Program
93 State House Station
Augusta, Maine 04333-0093

May 17, 2018

Re: Environmental Site Review, USCG – Perry Housing, Washington County, Perry, Maine

We are sending you this letter to request an Environmental Site Review of the subject project for rare and exemplary botanical features. The proposed project includes developing approximately 25 acres of a 75-acre site for USCG housing. Attached please find a Figure 1, which shows the location of the site. The proposed development will be limited to the front 1/3 of the property that abuts Shore Road and will include several residential buildings, maintenance building and general-purpose building.

For additional information or questions, please contact Charles Lyman at the address listed above.

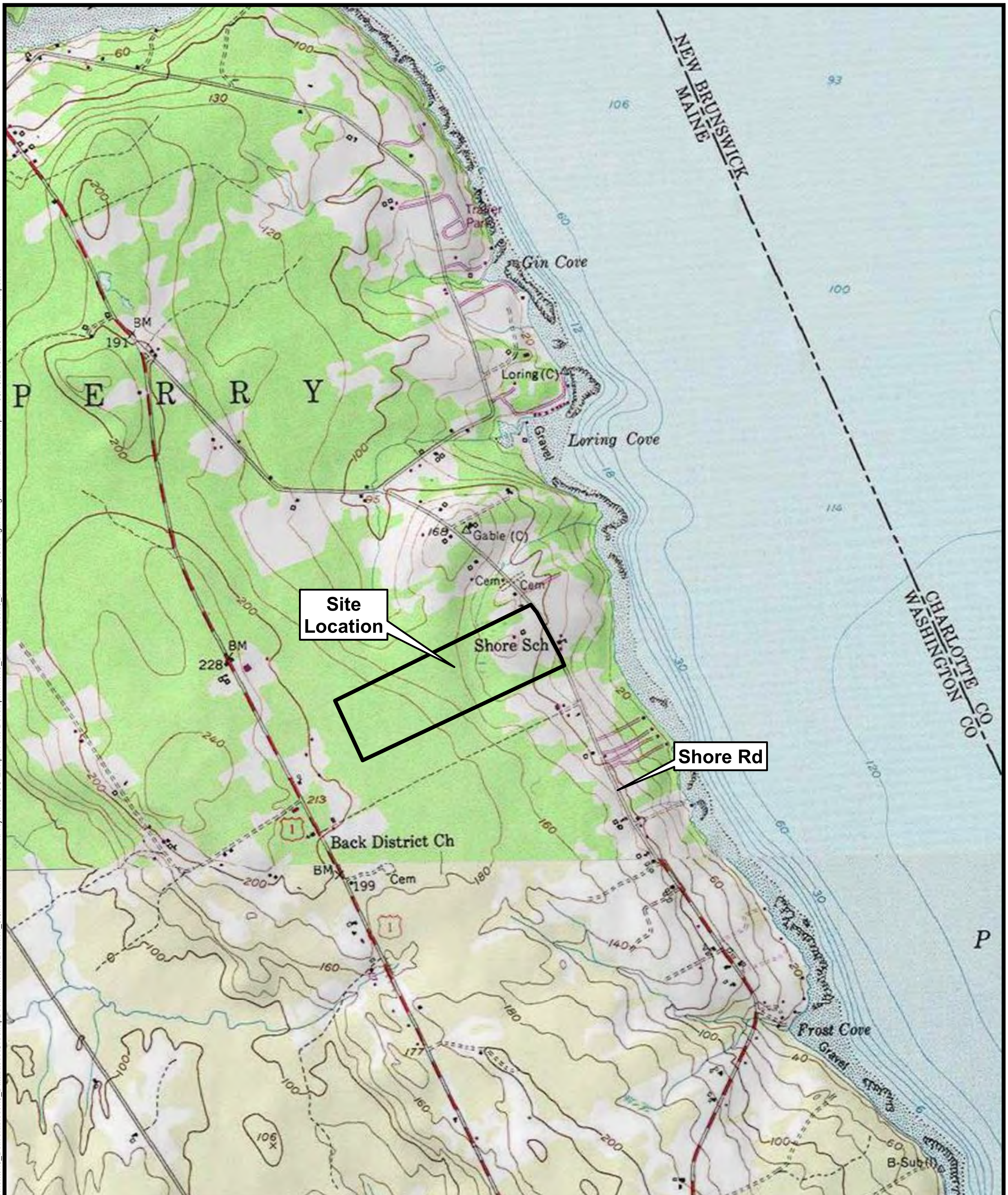
Sincerely,

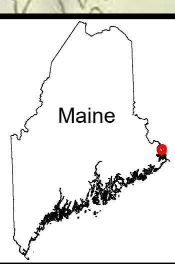
Charles H. Lyman

Charles H. Lyman, Senior Project Scientist
Wood Environment and Infrastructure Solutions

Enclosures:

1) Site Location Map





Copyright:© 2013 National Geographic Society, i-cubed

N

0 1,000 2,000 Feet

Prepared/Date: BRP 05/16/19 | Checked/Date: CHL 05/16/19

Figure 1
Site Location
576 Shore Rd.

USCG
Perry, Maine

Document: P:\Projects\USCG Eastport Site Development\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\SiteLocation_8.5x11P.mxd PDF: P:\Projects\USCG Eastport Site Development\4.0_Deliverables\4.5_Databases\GIS\Figures\Figure 1 - Site Location.pdf 05/16/2019 12:01 PM brian.peters

APPENDIX C

RESPONSE FROM MAINE NATURAL AREAS PROGRAM

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

June 6, 2019

Charles Lyman
Wood Environment and Infrastructure Solutions
511 Congress Street
Portland, ME 04101

Via email: charles.lyman@woodplc.com

Re: Rare and exemplary botanical features in proximity to: USCG Perry Housing, Perry, Maine

Dear Mr. Lyman:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received June 5, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Perry, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: USCG Housing, Perry, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Dawn-land sedge						
	SC	SU	G5T2T4	2013-07-09	13	Old field/roadside (non-forested, wetland or upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

APPENDIX D

BOTANICAL NOTES FOR *CAREX SCOPARIA*

Botanical Notes

ISSN 1541-8626

An irregularly published newsletter dedicated to dispersing taxonomic and ecological information useful for plant identification and conservation primarily in New England

Available online at http://www.scribd.com/StantecInc

Number 14. 12 September 2012

30 Park Drive, Topsham, ME 04086

A NEW NAME AND STATUS FOR *CAREX SCOPARIA* VAR. *TESSELLATA* (CYPERACEAE)

In 1909, M. Fernald and K. Wiegand made collections of a *Carex* in Maine belonging to the section *Cyperoideae* (formerly *Ovales*) that had not been observed before (Fernald and Wiegand 1910). They allied the plant to *Carex scoparia* Schkuhr & Willd., noting that the new taxon had crowded spikes, relatively broader perigynia, and darker carpellate scales (giving the inflorescence a checkered appearance due to the contrast of the scales against the perigynia). They referred to the new taxon as *C. scoparia* var. *tessellata* Fern. & Wieg. and noted it was known from only Washington County. Over a hundred years have passed with little research occurring on this taxon, despite its very limited global distribution.

Mastrogiuseppe et al. (2002) upheld *Carex scoparia* var. *tessellata* as a variety of *C. scoparia*, noting it occurred in New Brunswick (Canada) and Maine (United States). The New Brunswick attribution is in error (see later in this article). They also provided a key to the varieties of *Carex scoparia*, essentially presenting those diagnostic characters of Fernald (1950), but adding perigynium length. This character (perigynium length) shows complete overlap, but those of *C. scoparia* var. *scoparia* range longer than those of *C. scoparia* var. *tessellata*.

Hipp et al. (2010) found great diversity in the chromosome numbers of *Carex scoparia*, with $2n$=58–70. *Carex scoparia* var. *tessellata* has been found to have $2n$=68. Though populations of *C. scoparia* var. *scoparia* from outside of Maine have been found to have the same chromosome number as *C. scoparia* var. *tessellata*, those from southeastern Maine (i.e., within the region of sympatry with *Carex scoparia* var. *tessellata*) have shown different numbers ($2n$=64, 66, and 67). Hipp et al. (2010) also examined genetic divergence between these two varieties and showed *Carex scoparia* var. *tessellata* to be genetically divergent from *Carex scoparia* var. *scoparia*. The estimate using the ITS region suggests these two taxa have been separate for 0.487 million years (with substantial uncertainty; the 95% confidence interval = 0.050–1.61 million years).

Over the past few growing seasons, field work (in great part by the first author of this manuscript) has revealed a number of novel differences between the two varieties of *Carex scoparia*. In particular, examination of sympatric populations has called into question the treatment of *C. scoparia* var. *tessellata* as a variety of *C. scoparia*. A discussion of the differences between these two taxa follows.

Inflorescence length

The length of the inflorescence, which in this case is an approximate measure of (1) how aggregated the individual spikes are and (2) how many spikes occur in each inflorescence, is a useful character for separating the two taxa (Figure 1), as was noted by Fernald and

Wiegand (1910). Examining well-formed inflorescences (i.e., avoiding clearly depauperate individuals), *Carex scoparia* var. *tessellata* is always somewhat to moderately congested and measurements from the base of the lowest spike to the apex of the uppermost spike range from 14–26 mm long with 4–6(–8) spikes. Those of *C. scoparia* var. *scoparia* that we have measured range from (18–)20–55 mm and have 4–10 spikes. The latter species varies in its congestion of spikes, and while many collections have somewhat elongated inflorescences, some individuals, in particular, late season collections, do have congested inflorescences. This has caused confusion in herbarium collections where specimens of *C. scoparia* var. *scoparia* with congested spikes are sometimes misidentified as *C. scoparia* var. *tessellata*. The lowest internode of the inflorescence also shows some discriminatory power: (1–)1.7–6 mm in *C. scoparia* var. *tessellata* and (1–)3.8–10.5 mm in *C. scoparia* var. *scoparia*.

Figure 1. Comparison of the inflorescences of *Carex scoparia* var. *scoparia* (left) and *C. scoparia* var. *tessellata* (right). Note color and number of spikes.

Carpellate scale color

Carex scoparia var. *tessellata* received its varietal epithet due to the darker scales (compared with those of var. *scoparia*) strongly contrasting against the green perigynium bodies. Once learned, this trait is very useful and a fairly reliable way to distinguish these two taxa during late spring through early summer. As the summer progresses, the perigynia of *C. scoparia* var. *tessellata* also darken and the contrast between the perigynia and carpellate scales becomes less pronounced. The carpellate scales of *C. scoparia* var. *tessellata* are brown with a light green or light brown midrib (infrequently the midrib becomes darker than the rest of the scale in drying). Black is frequently reported in the literature as the scale color; this is not accurate. Those of *C. scoparia* var. *scoparia* are usually light brown to yellow-brown (Figure 2).

Figure 2. Sympatric population of *Carex scoparia* var. *scoparia* (left, light green spikes) and *C. scoparia* var. *tessellata* (right, dark green spikes) showing differences in spike color.

Leaf blade width

When sympatric populations of *Carex scoparia* var. *scoparia* and *C. scoparia* var. *tessellata* are observed, it can be seen that the leaves (and to some degree the culms) are, on average, narrower in *C. scoparia* var. *tessellata*. Though there is a fair amount of overlap, measurements of the widest leaves on plants from several sympatric populations in eastern Maine ranged mostly from 2.1 to 3.5 mm for var. *scoparia* and 1.5 to 2.9 mm for var. *tessellata*. Though range-wide measurements of *C. scoparia* var. *scoparia* would overlap those of var. *tessellata* presented here, these observations are valuable nonetheless and can be observed when the two taxa grow in close proximity.

Phenology
Observations of sympatric populations in Washington County, Maine, show that *Carex scoparia* var. *tessellata* is significantly ahead of *C. scoparia* var. *scoparia* in terms of flowering and fruiting. The former flowers approximately 10–15 days earlier than the latter (Figure 3).

Figure 3. Inflorescences of *Carex scoparia* var. *scoparia* (left, anthers exserted) and *C. scoparia* var. *tessellata* (right, anthers shed) demonstrating phenological differences (i.e., *C. scoparia* var. *tessellata* is significantly ahead of *C. scoparia* var. *scoparia*). This image captured on 16 June 2012.

Perigynia length to width ratio
As noted by Fernald and Wiegand (1910), *Carex scoparia* var. *tessellata* has relatively broader perigynia than var. *scoparia*. The measurements provided by Mastrogiuseppe et al. (2002) appear to accurately describe the difference between these two taxa. The perigynia of var. *tessellata* are 2–2.6 times as long as wide, whereas those of var. *scoparia* are (2.5–)2.8–4 times as long as wide. We find it to be rare that perigynia length-to-width ratios overlap between these two taxa. This morphological difference manifests also as a different outline of the perigynium body. Those of var. *scoparia* are lanceolate to narrow-elliptic, whereas those of var. *tessellata* are elliptic (Figure 4).

Figure 4. Perigynia of *Carex scoparia* var. *tessellata* (left) and *C. scoparia* var. *scoparia* (right). Note outline, wing margin on beak, and color of perigynia (including beaks). Scale bar = 1 mm.

Perigynium beak apex
The perigynium beak differs in both color and length of wingless portion between *Carex scoparia* var. *scoparia* and var. *tessellata*. In var. *scoparia*, the beak is light brown to brown at maturity (green prior to maturity) and has a marginal wing that extends nearly or fully to the apex of the beak—the wingless portion measures 0–0.5 mm. This is in contrast to the perigynium beaks of var. *tessellata*. In this taxon, the apex is brown to dark purple-brown and lacks a marginal wing in the apical 0.3–1.1 mm (Figure 4). The dark color and lack of a ciliolate wing near the apex of the perigynium beak create a characteristic look to the perigynia of var. *tessellata*—even though the perigynia are relatively broader, their apices look very slender and dark. This difference has apparently not been noted before.

Distance from scale apex to perigynium beak apex
Measurements of the distance from the tip of the carpellate scale to the apex of the associated perigynium beak reveal differences between *Carex scoparia* var. *scoparia* and var. *tessellata*. For this character, measurements are performed on scales from the middle to apex of the spike (the lower carpellate scales are often longer and broader relative to the perigynia, so this portion of the spike is avoided for this measurement). This distance measures (0.8–)1–2(–2.3) mm in var. *scoparia* and 0.2–1.2 mm in var. *tessellata* (Figures 5 and 6). As a result, the carpellate scales more nearly cover

the associated perigynia than in var. *scoparia*. This difference has apparently not been noted before.

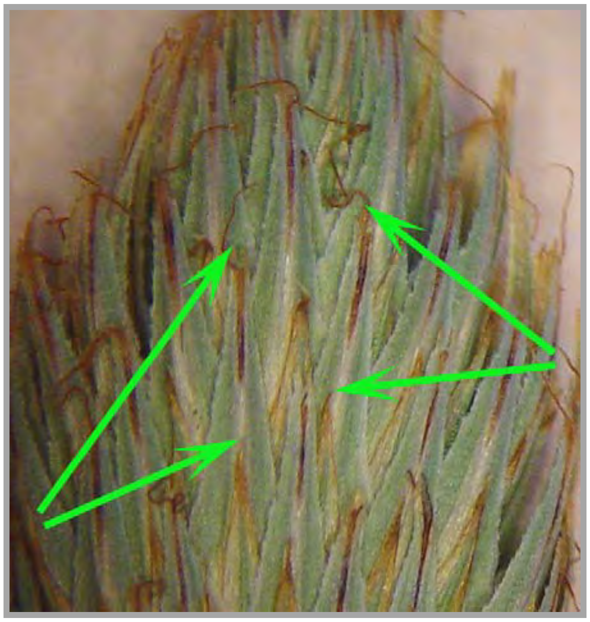


Figure 5. Intact spike of *Carex scoparia* var. *scoparia* showing apex of carpellate scale (lower arrow of each pair) and apex of associated perigynium beak (upper arrow of each pair).

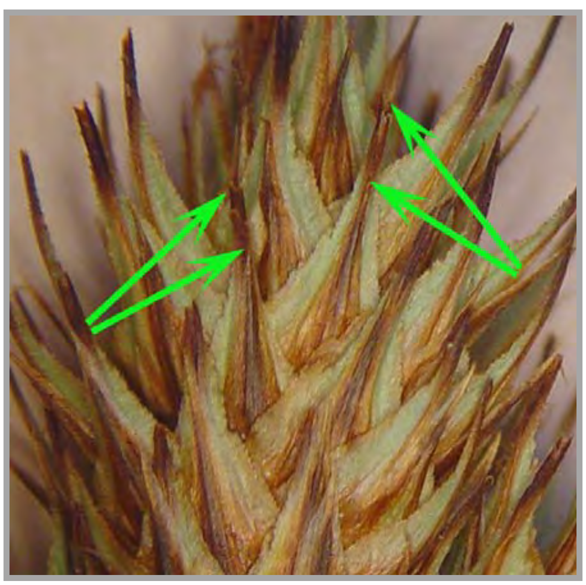


Figure 6. Intact spike of *Carex scoparia* var. *tessellata* showing apex of carpellate scale (lower arrow of each pair) and apex of associated perigynium beak (upper arrow of each pair).

Given the existence of multiple morphological characters that distinguish *Carex scoparia* var. *tessellata* from *C. scoparia* var. *scoparia*, combined with observable phenological differences and measurable genetic divergence, *C. scoparia* var. *tessellata* is here considered to represent a distinct species of highly limited geographic distribution. Only two collections were cited by Fernald and Wiegand (1910), but no holotype was designated.

***Carex waponahkikensis* M. Lovit & A. Haines**, stat. et nom. nov.
Based on: *Carex scoparia* Schkuhr *ex* Willd. var. *tessellata* Fern. & Wieg.; Rhodora 12: 135. 1910.
Lectotype (here designated): United States. Maine, Washington County, Pembroke, 8 Jul 1909, *Fernald 1464* (GH!).

Note: though the protologue states that the collection designated as the lectotype was collected by both Fernald and Wiegand, the actual specimen label lists only Fernald.

Etymology: The specific epithet *waponahkikensis* (pronounced wah-buh-nah-kee-GEN-sis) is derived from the Passamoquoddy word waponahkik (pronounced wah-buh-NAH-keeg), a locative noun meaning “in, at, or to the Dawn-land.” The Dawn-land is broadly defined as northeastern North America (i.e., New England and maritime Canada), which receives the morning sunlight before most of North America. This spelling comes from the Passamaquoddy spelling of Wabanaki (their spelling: Waponahki). The Passamaquoddy are a Native American people living in southeastern Maine. *Carex waponahkikensis* is currently known only from this region. We suggest “Dawn-land sedge” as its common name.

Identification key to distinguish *Carex scoparia* and *Carex waponahkikensis*:

1a. Perigynia (2.5–)2.8–4 times as long as wide, lanceolate to narrow-elliptic; perigynium beak at maturity light brown to brown and wingless in the apical 0–0.5 mm, exceeding the tip of the associated subtending scale by (0.8–)1–2(–2.3) mm; inflorescence (18–)20–55 mm long ……………………………… ***C. scoparia***
1b. Perigynia 2–2.6 times as long as wide, elliptic; perigynium beak at maturity brown to dark purple-brown and wingless in the apical 0.3–1.1 mm, exceeding the associated subtending scale by 0.2–1.2 mm; inflorescence 14–26 mm long ……. ***C. waponahkikensis***

Distribution and Conservation
As a result of careful examination of specimens, especially in the light of the additional characters that separate these two taxa, it is now realized that *Carex waponahkikensis* is a globally restricted taxon that is found only in extreme eastern Maine along the coastal plain. Many collections, including all those from Canada

(New Brunswick and Nova Scotia) and regions of Maine outside of Hancock and Washington Counties, were misidentified. We are aware of fewer than 20 living populations (approximately 12), contributing to a tentative G-rank of G2. This species occupies open, early successional, often human-disturbed, habitats, including fields, roadsides, and ditches.

Specimens of *Carex waponahkikensis*

United States. ME. Hancock County. T10 SD, north side of Rte 182 at Jct with road to Tunk Mountain, about 11 miles west of Cherryfield, dry sandy/gravelly disturbed roadside through upland hardwoods, 10 Jul 1993, *Reznicek 9634* (MICH). T10 SD, north side of Rte #182 7 miles ENE of Jct with Hwy #200 at Franklin, moist open bottom of abandoned sand pit, 3 Jul 1994, *Reznicek 9921* (MICH). Hancock, bottom of moist sand pit, Jul 1995, *Dibble & Rotherrock* [sic] *s.n.* (UNB). **Washington County**. Cherryfield, north side of Ridge Road about 4.5 miles north of Cherryfield, 44° 39′ 50″ N, 67° 52′ 42″ W, seepy slope below sunny pond bank in gravelly soil, 2 Jul 2000, *Reznicek 11177* (MICH). Columbia Falls, moist low flat open sandy ditch, 11 Jul 1998, *Reznicek 10698* (MICH). Jonesport, meadows behind Sandy River Beach, 3.5 miles ENE of Jonesport, on the east side of Route 187, 44° 34′ N, 67° 32′ W, wet meadow near shore of artificial pond and nearby rough hay meadows of undulating terrain, 17 Jul 1992, *Reznicek 9154* (MICH). Jonesport, east side of Hwy #187 along entrance to Jonesport High School, dry open shallow sandy roadside ditch with sparse grasses and sedges, 7 Jul 1999, *Reznicek 10923* (MICH). Jonesport, hay meadow near salt marsh and sandy beach, near mouth of Sandy River, E of Rte #187, 8 July 1998, *Reznicek & Zika 13483* (MICH). Lubec, in a field west from the Straight Bay Road and east from Morong Cove, on land owned by the State of Maine. Maine Dept. of Inland Fisheries & Wildlife manages the field for grassland birds by annual mowing. In 2012 there were ~20 clumps of var. *tessellata* in a slight depression in the field, with *Carex scoparia, Carex conoidea, Anthoxanthum odoratum, Festuca rubra, Alopecurus pratensis, Phleum pratense, Ranunculus acris, Hieracium caespitosum, Rhinanthes minor, Spiraea alba, Vicia cracca, Trifolium arvense, Stellaria graminea, Fragaria virginiana, Potentilla simplex,* and *Rosa* sp., N 44.85295° W 067.08253, 27 Jun 2012, *Lovit 413* (MAINE). Marshfield, damp, low ground, 8 July 1902, *Fernald s.n.* (GH, MICH). Pembroke, dry low ground, 8 July 1909, *Fernald 1464* (GH, MICH, CONN, NY, BH). Robbinston, in a field that is generally mowed annually, at the corner of Sweeney Road and Brewer/Number 3 Road, with *Carex scoparia, Carex nigra, Onoclea sensibilis, Festuca rubra, Prunella vulgaris, Scirpus atrocinctus, Spiraea alba, Juncus filiformis, Symphiotrichum novi-belgii, and Rosa* sp., N 45.07499° W 067.13728°, 12 Jul 2012, *Lovit 420* (MAINE). Trescott, in a low area of an open field south of State Highway #189 at the Whiting Town Line, multiple clumps of this variety present, near *Scirpus microcarpus*, with *Carex nigra*, *Carex cannescens*, *Ranunculus acris*, *Doellingeria umbellata*, *Lysimachia terrestris*, and Galium sp., N 44.79006° W 067.16454°, 27 Jun 2012, *Lovit 411* (MAINE). West Pembroke, dry roadside, 8 July 1909, *Wiegand 96* (NY). Roque Bluffs, swale at Johnson Mountain, in sphagnum, 23 July 1988, *Dibble 1588* (MICH). Steuben, gravel pit at jct of Dyer Bay Road and Road to Eagle Hill, 27 Jul 1996, *Reznicek 10319* (MICH, MAINE). Steuben, east side of Unionville Road 5.3 miles north of US Rte #1, dry sandy ditch dominated by sedges and grasses, 4 Jul 1993, *Reznicek 9589* (MICH).

Literature Cited

Fernald, M.L. 1950. Gray's Manual of Botany, 8th edition. Van Nostrand Reinhold Company, New York, NY.

_____ and K.M. Wiegand. 1910. A summer's botanizing in eastern Maine and western New Brunswick. Part II. Rhodora 12: 133–146.

Hipp, A.L., P.E. Rothrock, R. Whitkus, and J.A. Weber. 2010. Chromosomes tell half of the story: the correlation between karyotype rearrangements and genetic diversity in sedges, a group with holocentric chromosomes. Molecular Evolution 19: 3124–3138.

Mastrogiuseppe, J., P.E. Rothrock, A.C. Dibble, and A.A. Reznicek. 2002. *Carex* section *Ovales*. Pages 332–378 *in* Flora of North America Editorial Committee, editors. Flora of North America, volume 23. Oxford University Press, New York, NY.

Acknowledgments: Kanchi Gandhi, Andrew Hipp, Tony Reznicek, Thomas Vining, and Emily Wood are thanked for their assistance with this manuscript.

Article contributed by Marilee Lovit (PO Box 95, Addison, ME 04606; marilee@mgemaine.com) and Arthur Haines (New England Wild Flower Society, 180 Hemenway Road, Framingham, MA 01702; ahaines@newfs.org).

APPENDIX E

USFWS IPAC LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: May 16, 2019
Consultation Code: 05E1ME00-2019-SLI-0744
Event Code: 05E1ME00-2019-E-01758
Project Name: USCG - Perry, Maine

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2019-SLI-0744

Event Code: 05E1ME00-2019-E-01758

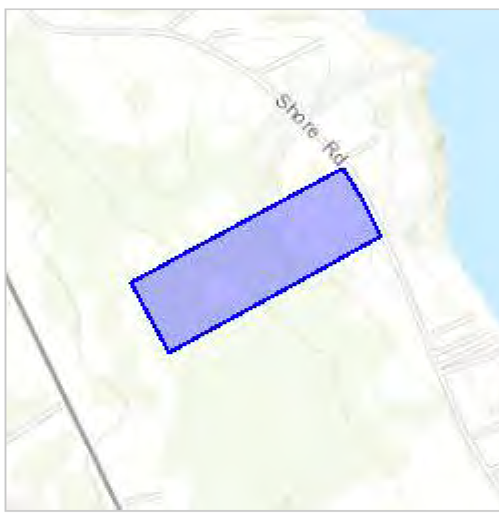
Project Name: USCG - Perry, Maine

Project Type: DEVELOPMENT

Project Description: The project includes developing approximately 25 acres of the 75 acre parcel. The proposed development includes housing for Coast Guard Personnel, up to 6 single family residences. The development to occur in areas formerly developed including the existing house lot, old farm field and fallow pasture. The remaining 2/3 of the property will be kept as forest/open space.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/45.00745909727843N67.08191525222853W



Counties: Washington, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX F

USFWS VERIFICATION LETTER

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: May 16, 2019
Consultation Code: 05E1ME00-2019-TA-0744
Event Code: 05E1ME00-2019-E-01759
Project Name: USCG - Perry, Maine

Subject: Verification letter for the 'USCG - Perry, Maine' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Charles Lyman:

The U.S. Fish and Wildlife Service (Service) received on May 16, 2019 your effects determination for the 'USCG - Perry, Maine' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

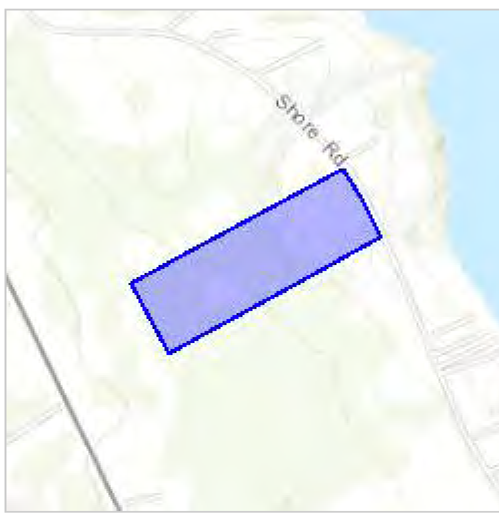
USCG - Perry, Maine

2. Description

The following description was provided for the project 'USCG - Perry, Maine':

> The project includes developing approximately 25 acres of the 75 acre parcel. The proposed development includes housing for Coast Guard Personnel, up to 6 single family residences. The development to occur in areas formerly developed including the existing house lot, old farm field and fallow pasture. The remaining 2/3 of the property will be kept as forest/open space.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/45.00745909727843N67.08191525222853W



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?
   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

6. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?
   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

2

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

APPENDIX H

Preliminary Cultural Resources Study and Tribal Consultation Letters/Responses

GRAY & PAPE

HERITAGE MANAGEMENT

Preliminary Cultural Resources Study United States Coast Guard Station Eastport Housing Project, Perry, Washington County, Maine

Prepared for:

Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
Portland, Maine 04101

Prepared by:

Gray & Pape
60 Valley Street
Suite 103
Providence, Rhode Island 02909

CUI//CEII//PRIV - CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE

19-68901.001

GRAY & PAPE
HERITAGE MANAGEMENT

Project No. 19-68901.001

Preliminary Cultural Resources Study
United States Coast Guard Station Eastport Housing Project, Perry, Washington County, Maine

Prepared for:
Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
Portland, Maine 04101

Contact: Raymond D. Pasquariello, RPA
Associate Project Manager

Prepared by:
Nathan C. Scholl, M.A., RPA
Kimberly M. Smith, M.A., RPA
Kendal Anderson, M.A.

Gray & Pape
60 Valley Street
Suite 103
Providence, Rhode Island 02909

____
Nathan C. Scholl, M.A, RPA
Senior Principal Investigator

July 2, 2019

ABSTRACT

This report summarizes the results of a preliminary cultural resources investigation and sensitivity designation completed by Gray & Pape, Inc., of Providence, Rhode Island, of a 30-hectare (75-acre) property located at 576 Shore Road, in the Town of Perry, Maine. The purpose of the study is to assess the effects that plans of the United States Coast Guard to develop the property for personnel family housing for service members reporting to Station Eastport, Maine, may have on the human environment and historic resources in compliance with the National Environmental Policy Act and the National Historic Preservation Act. This study contains background environmental and literature information for the Project area and includes an initial reconnaissance of the property. The study develops a land-use history of the parcel and an archaeological sensitivity model for both pre-Contact Native American and post-Contact archaeological sites and identifies potentially interested parties.

In June 2018, Gray & Pape, Inc., conducted an initial pedestrian reconnaissance of the Project area. The parcel is located west of Shore Road at the intersection of Silver Springs Road and Mt. Auburn Road. The parcel is bounded to the west, north, and south by forested lots. The eastern part of the parcel contains several disused pastures and a grouping of late twentieth century structures. The wooded area of the parcel contains three streams, three wetlands, and one vernal pool complex. One historical scatter, an early twentieth-century trash dump, was identified during the reconnaissance.

Regional pre-Contact documentary evidence indicates that while Native American groups had a strong presence in the region around Passamaquoddy Bay, they may have only utilized the Project area for short periods to access the resources associated with the streams and wetlands it contains. Post-Contact period occupation of the project area likely began sometime in the early to mid-nineteenth century, after overland transportation and local road networks to the Project area were established. At least two historical occupations appear to have occurred within the site, likely relating to small family agricultural lifeways. Of small note is that one of the historical occupations was a Town Farm. No previously recorded archaeological sites or cultural resources were identified within the proposed Project area.

Gray & Pape, Inc., presents a sensitivity model, based on the data present within this report, for the possible location of both pre- and post-Contact archaeological sites. Gray & Pape, Inc., recommends a Phase IA archaeological reconnaissance survey be completed for the Project area to help revise the sensitivity models. Based on these results, additional Phase IB archaeological investigation may be warranted. Gray & Pape, Inc., finds no historical importance associated with any of the extant structures within the Project area and recommends no further work associated with these structures.

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1.0 INTRODUCTION

Gray & Pape, Inc. (Gray & Pape), was retained to conduct a preliminary cultural resources study for the proposed United States Coast Guard (USCG) site development in the Town of Perry, Washington County, Maine. The USCG has identified a need to recapitalize USCG personnel family housing for service members reporting to Station Eastport, Maine. As such, the 30-hectare (ha) (75-acre [ac]) property located at 576 Shore Road, Perry, Maine, was acquired by the USCG (Project area) (Figure 1-1 and 1-2). The USCG would like to develop this property using one of the following scenarios:

- Six (6) duplex housing units (12 units total), consisting of four (4) 3-bedroom units (8 units total), and two (2) 4-bedroom units (4 units total). Additionally, provide a 5,000 square foot (ft^2) maintenance building and a 2,000 ft^2 community building. Provide all associated roads, sidewalks, storm water controls, streetlights, utilities, and typical infrastructure to support this community (Appendix A).

OR

- Twelve (12) single-family units consisting of eight (8) 3-bedroom units, and four (4) 4-bedroom units. Provide a 5,000 ft^2 maintenance building and a 2,000 ft^2community building. Provide all associated roads, sidewalks, storm water controls, streetlights, utilities, and typical infrastructure to support this community. Three-bedroom units will be 2,300 gross $ft^2$and the four-bedroom units will be 2,500 gross ft^2 (Appendix A).

1.1 Regulatory Framework

Primary Regulatory Drivers

- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Archaeological Resources Protection Act
- Archaeological and Historic Preservation Act
- American Indian Religious Freedom Act
- Executive Order 13175
- Executive Order 13007

Cultural resources are historic and prehistoric properties, as defined by the National Historic Preservation Act (NHPA); cultural items, as defined by the Native American Graves Protection and Repatriation Act (NAGPRA); archaeological resources, as defined by the Archaeological Resources Protection Act (ARPA) and the Archaeological and Historic Preservation Act (AHPA); sacred sites, as defined by Executive Order (EO) 13007 (*Indian Sacred Sites*) to which access is afforded under the American Indian Religious Freedom Act (AIRFA); and collections and associated records, as defined by 36 C.F.R. § 79. They include sites, buildings, structures, or objects that may have significant archaeological and historical values, or properties that may play a significant traditional role in a community's history, beliefs, customs, and practices. Thus, cultural resources encompass a wide range of sites and buildings from prehistoric Native American campsites to military buildings constructed during the Cold War, as well as traditional cultural properties still used today.

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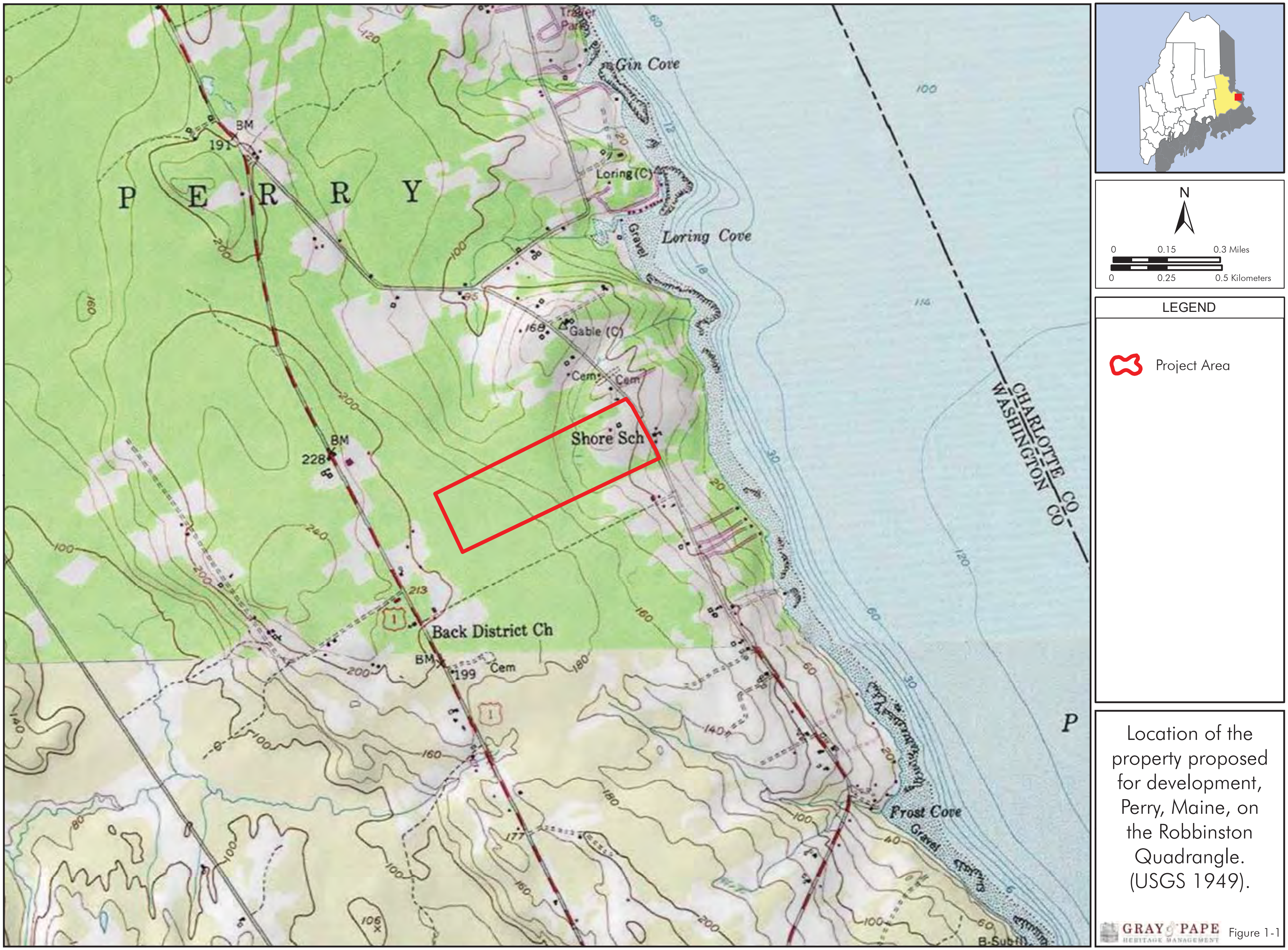

Location of the property proposed for development, Perry, Maine, on the Robbinston Quadrangle. (USGS 1949).

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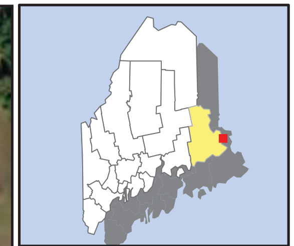

N

0 0.035 0.07 Miles

0 0.055 0.11 Kilometers

LEGEND

Project Area

Location of the property proposed for development, Perry, Maine on an aerial image.

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Figure 1-2

The principal federal law addressing cultural resources is the NHPA of 1966, as amended (54 U.S.C. § 300101.), and its implementing regulations (36 C.F.R. § 800). The regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties; assessing the effects of federal undertakings on historic properties; and consulting to avoid, reduce, or minimize adverse effects. An 'undertaking' is defined in 36 C.F.R. § 800.16(y) as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license, or approval. As part of the Section 106 process, federal agencies are required to consult with the State Historic Preservation Office (SHPO) and other stakeholders and seek input from the public.

The term 'historic properties' refers to cultural resources that meet specific criteria for eligibility for listing in the National Register of Historic Places (NRHP); historic properties need not be formally listed on the NRHP. Section 106 does not require the preservation of historic properties but ensures that the decisions of federal agencies concerning the treatment of these places result from meaningful considerations of cultural and historic values, and of the options available to protect the properties. However, federal agencies are required under the NHPA to consult with stakeholders and develop reasonable mitigation when their actions will adversely affect historic properties. The proposed acquisition and future development are a federal undertaking, as defined by 36 C.F.R. § 800.3 is the USCG is, therefore, required to comply with Section 106.

Executive Order 13175 (*Consultation and Coordination with Indian Tribal Governments*) and Presidential Memoranda for *Heads of Executive Departments and Agencies on Government-to-Government Relations with Native American Tribal Governments* (29 April 1994) establish guidelines to strengthen the United States government-to-government relationships with Native American tribes, and ensure consultation occurs with federally recognized tribes for proposed activities that could affect tribal resources or interests.

1.2 Authority

Gray & Pape conducts archaeological investigations in compliance with Federal and State legislation. All archaeological procedures comply with legislation and regulations concerning the impact to archaeological properties from federally funded or permitted activities. These include the NHPA of 1966, as amended in 1992 (54 U.S.C. § 300101); the National Environmental Policy Act of 1969 (NEPA) (PL 91-990, 42 U.S.C. § 4321); Executive Order 11593, 1971 (16 U.S.C. § 470); Procedures for the Protection of Historic and Cultural Properties (36 C.F.R. § 800); and the Archaeological and Historic Preservation Act of 1974 (PL 93 291). Professional archaeological work in Maine is regulated by two chapters in the Code of Maine Rules: Chapters 100 and 812 (Sections 089c100 and 089c812, respectively). Archaeological site records access procedures and standards are contained in Chapter 100. The composition and functions of the Archaeological Advisory Committee, the credential requirements for persons on the Commission's approved lists of archaeologists, procedure for review of credentials, procedure for removal from approved lists, and environmental impact project guidelines and procedures are contained in Chapter 812.

1.3 Project Description

The proposed property under consideration for development was recently acquired by the USCG. The USCG would like to develop this

[1] An ***undertaking*** is defined in 36 C.F.R. § 800.16(y) as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license or approval.

property for USCG personnel family housing for service members reporting to Station Eastport, Maine. The property is located at 576 Shore Road, Perry, Maine 04667 and consists of approximately 30.3 ha (75.0 ac). The property is listed as Lot 4 on Planning Map 13, in the Town of Perry, Maine. The parcel is bounded to the northeast by Shore Road. All other bounds of the parcel are the wooded areas of the surrounding parcels. The property contains above-ground resources that include a ca. 1968 house and barn, and a series of ca. 1970 outbuildings.

The property is currently predominately forested, with some open lands towards its eastern end, likely former agricultural fields located in a rural area of Washington, County, Maine. The topography is generally flat, with an overall slope to the east, towards the St. Croix River. Topographic imagery indicates the possible presence of a drainage near the southeast corner of the property, a possible ephemeral stream tributary to the St. Croix River.

1.4 Report Organization

This report is organized into five sections. Part one serves to introduce the purpose and background of the report. Section two briefly describes the methodology of the study. Part three describes the results of the research, while part four presents the findings of the field survey. The final section provides conclusions and recommendations.

1.5 Acknowledgements

The cultural resources study was conducted under the direction of Regional Manager, Patrick O'Bannon, Ph.D.; Senior Principal Investigator Kimberly M. Smith, M.A., RPA; and Principal Investigator Nathan C. Scholl, M.A., RPA. The project mapping was completed by Kimberly M. Smith. Sarah E. Holland, Ph.D. edited the report and oversaw its production.

2.0 ENVIRONMETAL CONTEXT

2.1 Physiography

The Project area lies within the northeastern part of the continent that was glaciated during the last period of ice age. As such, much of its current physiography, hydrology, soils, and floral and faunal regimes was influenced by the actions of the glaciers and their modifications to the landscape. The following discussion of the environmental context will focus on the glacial and postglacial history of the region in which the Project area is located.

Physiography refers to the topographic expression of the surface of the landscape. Fenneman (1938) divided much of the eastern United States into physiographic provinces, broad areas of the country characterized by similar overall physiography. The Project area falls within the New England Physiographic Province, which is made up of five subdivisions, or sections. The Project area is located within the Seaboard Lowland section, the sloping margin of the uplands that includes areas that were inundated by the ocean or large proglacial lakes during the last glacial retreat. Biophysical regions are differentiated by the general nature of soils, landscapes, geology, native vegetation, climate, and land use. Within the state of Maine, the Project area can be found within the East Coast biophysical region, which is characterized by low ridges surrounded by poorly drained, relatively flat terrain, with elevations between 30 meters (m) (98.4 feet [ft])and 305 m (1,000.6 ft). Bedrock is predominantly igneous, with occasional outcrops of metavolcanic rocks (McMahon 1990).

While glaciers are responsible for much of the modern physiography on the Project area, the underlying bedrock geology (Figure 2-1) of the area also plays a significant role in its physiography. The Project area is primarily underlain by the basalt bedrock member of the Devonian-age Perry Formation. This bedrock type is surrounded, except to the east, by the sandstone member of the Devonian-aged Perry Formation, which is located within one kilometer (km) (0.6-miles [mi]) of the Project area (United States Geologic Survey [USGS] 2019).

During the last ice age, which occurred in the Pleistocene Epoch (1.6 million–10,000 years ago), the entire state of Maine was covered by ice up to 1.6 km (1.0 mi) thick, originating from the Laurentide ice sheet. The last glacial advance of the Pleistocene was called the Wisconsin stage, and it is this stage that is responsible for the majority of the landscape features present today in Maine. The Wisconsin stage ice sheet began its retreat around 22,000 years ago, and had begun to expose the land that would become Maine by around 14,500 years ago. By approximately 10,500 years, the glacial ice had completely retreated from Maine (Borns et. al. 2004). The timing of this retreat is transgressive across the continent and possibly within New England. In addition, the retreat of the ice sheet was not a uniform march to the north; many regressive pulses to the south were experienced during this period. Within Maine, glacial ice may have remained in the northern highlands of the state through, or advanced during, the Younger Dryas Chronozone (an approximately 1,000–year period of a return to near glacial climatic conditions), between 11,000 and 10,000 Before Present (B.P.) (Borns et al. 2004).

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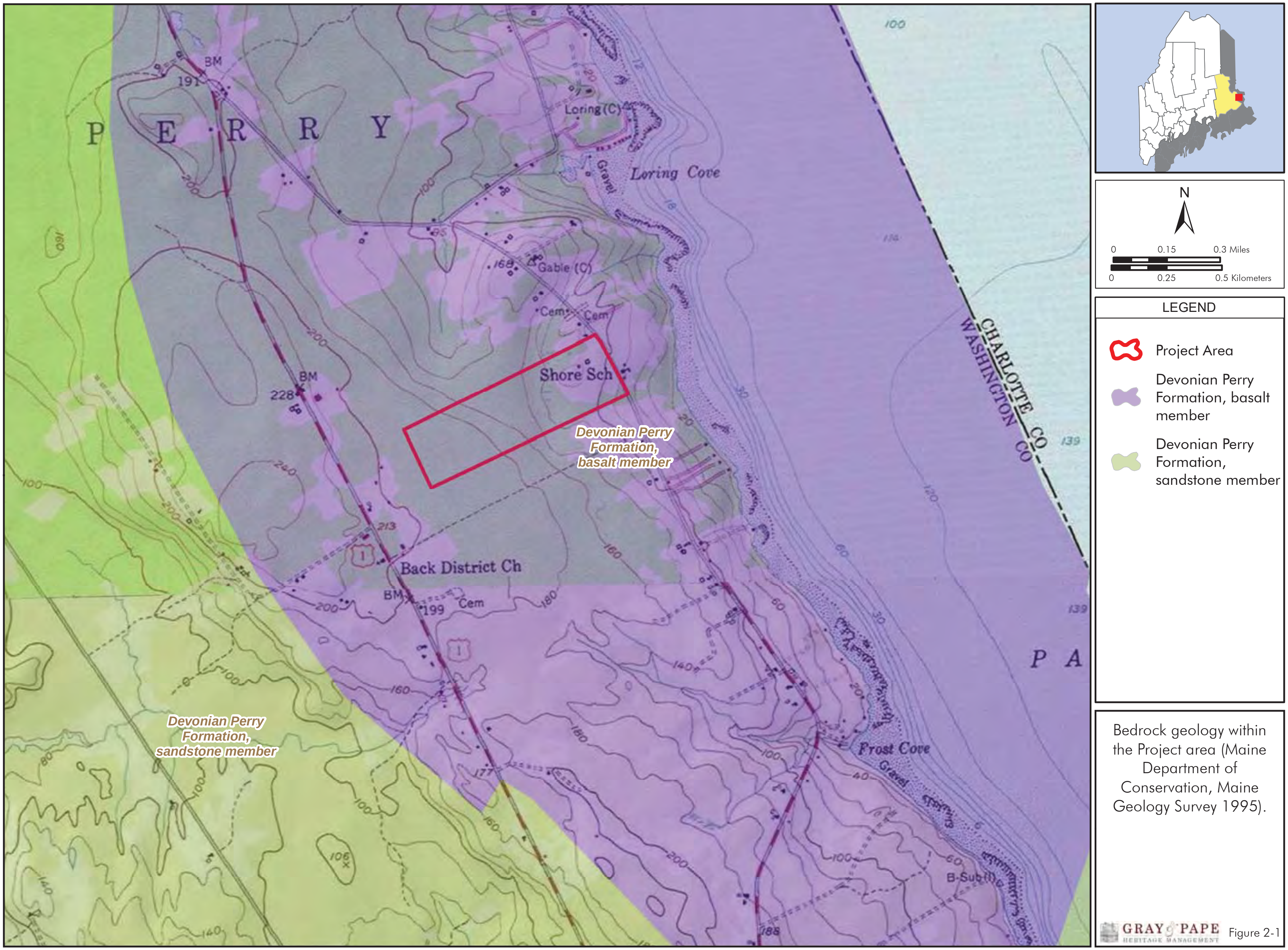

LEGEND

Project Area

Devonian Perry Formation, basalt member

Devonian Perry Formation, sandstone member

Bedrock geology within the Project area (Maine Department of Conservation, Maine Geology Survey 1995).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 2-1

During the retreat, the coast of Maine was subsequently submerged by marine waters up to 175 km (108 mi) inland along some of the major river valleys (Borns et al. 2004). The extreme pressure from the weight of the glacial ice caused the continental crust to be depressed along the coast of Maine, and the rapidity of the ice melting and subsequent sea level rise flooded this area before the crust was able to rebound. Sea level rise caught up to the glacial ice approximately at the state's coast and floated the glacial ice in that location, allowing sea waters to flood in under the glaciers. Glaciers then deposited their meltwater sediments into a marine environment, forming a near ubiquitous deposit that is recognized today as the Presumpscot Formation. This period of marine submergence lasted from approximately 13,500 to 12,500 B.P., by the end of which the crust had rebounded above sea level and continued to rise until it was about 45.7 m (149.9 ft) above sea level. As glacial ice continued to melt, sea level would reach its modern level around 2000 B.P. (Caldwell 1998). The Project area is contained within the limits of this marine submergence.

2.2 Surface Geology

The ice- and seawater-free landscape that developed was blanketed by glacial deposits, primarily glacial till, or glacial marine sediments. Till is an unsorted deposit of sediment ranging from fine clays and silts to boulders. In areas where glacial meltwaters deposited sediments within lakes or the sea, the sediments are typically better sorted deposits, known as outwash. Till is usually found as ground or end moraines, while outwash-derived landforms can be deltas, eskers, and stream or lake basins (Caldwell 1998). Modern stream channels began to form, mostly occupying meltwater channels or preglacial channels. Water and wind would begin moving the glacial sediments and redepositing them as Holocene-aged alluvium and dune deposits.

Figure 2-2, based on the map by Borns (1974), details the surficial geology of the Project area and its immediate surroundings. The Project area is characterized as primarily glacial till, which can be up to 300 m (984.2 ft) in thickness in localized areas (Borns 1974). The till mapped in the area consists of basal till, which is compact and fine grained, or ablation till, which is loose and sandy. The till here often directl overlies bedrock and the northeastern section of the Project area is demarked as exhibiting bedrock exposure at the ground surface (hatch markings on map in Figure 2-2). Soils mapped within the Project area (see Section 2.3 below) indicate the till in the Project area is predominately of the ablation till variety. While glaciomarine deposits of the Presumpscot Formation are not mapped within the Project area, they can be found within 1.5 km (0.9 mi) of the Project area. These glaciomarine deposits appear to be located predominately in the larger drainage valleys, coastal coves, or coastal lowlands.

2.3 Soil

The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey was utilized to obtain data on soils within the APE. The Web Soil Survey defines soil types and their characteristics, based on decades of soil data collection by the USDA (USDA-NRCS 2019). Soil types within the Project area were identified and mapped to help identify areas in which archaeological sites are likely to be found and preserved.

Soils within the Project area are relatively flat, with slopes of zero to eight percent. These soils began forming directly after the glacial retreat. Up to five soil series (Figure 2-3; Table 2-1), representing multiple soil map units, can be found within, or near, the Project area (USDA-NRCS 2019). The Creasey, Hogback, Naskeag, and Rawsonville soil series, a spodosol, is a soil type found typically in environments dominated by acidic soils caused by millennia of pine tree growth. As such, these soils are generally stable and likely been forming relatively undisturbed since the retreat

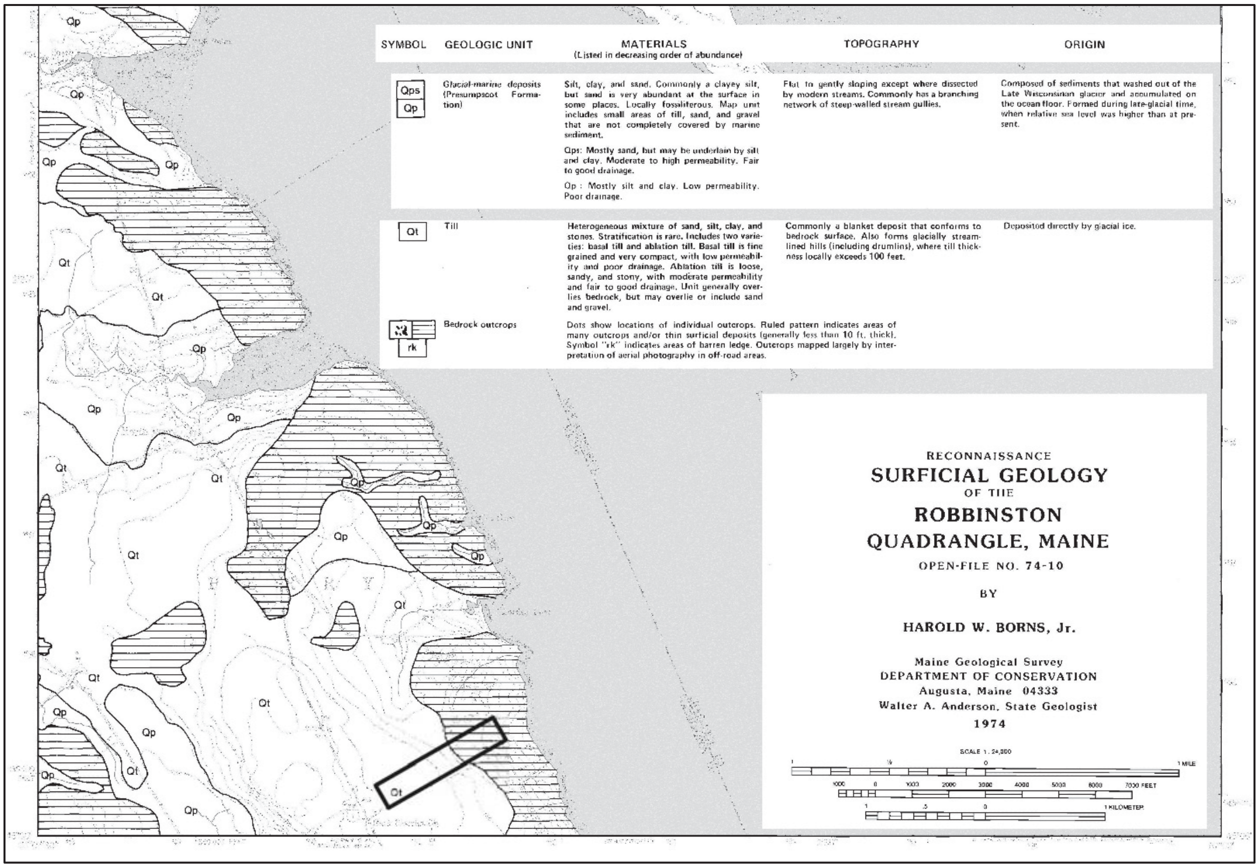

Figure 2-2. Surficial geology within the Project area (modified from Borns 1974). Black rectangular box indicates project location.

t of the last glacier. Lamoine and Scantic series soils are inceptisols, which are moderately to minimally weathered soils, indicating they have been stable for a relatively short time.

The Creasey, Hogback, Naskeag, and Rawsonville soils are best characterized as thin glacial till form over, and possible from, the local bedrock. Soil profile description indicate that the bedrock can be found within 0.50 to 1.0 m (1.6 to 3.2 ft) of the ground surface. Given the formation time of spodic soils like these, this could be evidence that this soil has been forming since the retreat of the glacial ice, in the late Pleistocene to early Holocene, and is likely to have received little sedimentation since that time. These soils may make up as much as 50 percent of the Project area.

Soils such as Lamoine and Scantic are late Pleistocene- to early Holocene-aged glacial lake or glacial marine deposits. These soils are thicker than the others in the Project area and do not appear to exhibit bedrock within or near to 1.0 m (3.2 ft) of the ground surface. The apparent lack of pedogenesis seen in these inceptsol soils is likely less of a function of the age of the deposits these soils formed in and more that of the types of sediments or environmental conductions. It may be that these soils were inundated or in a wetland-like environment until anthropogenic landscape alteration made in the historical period for agricultural land use.

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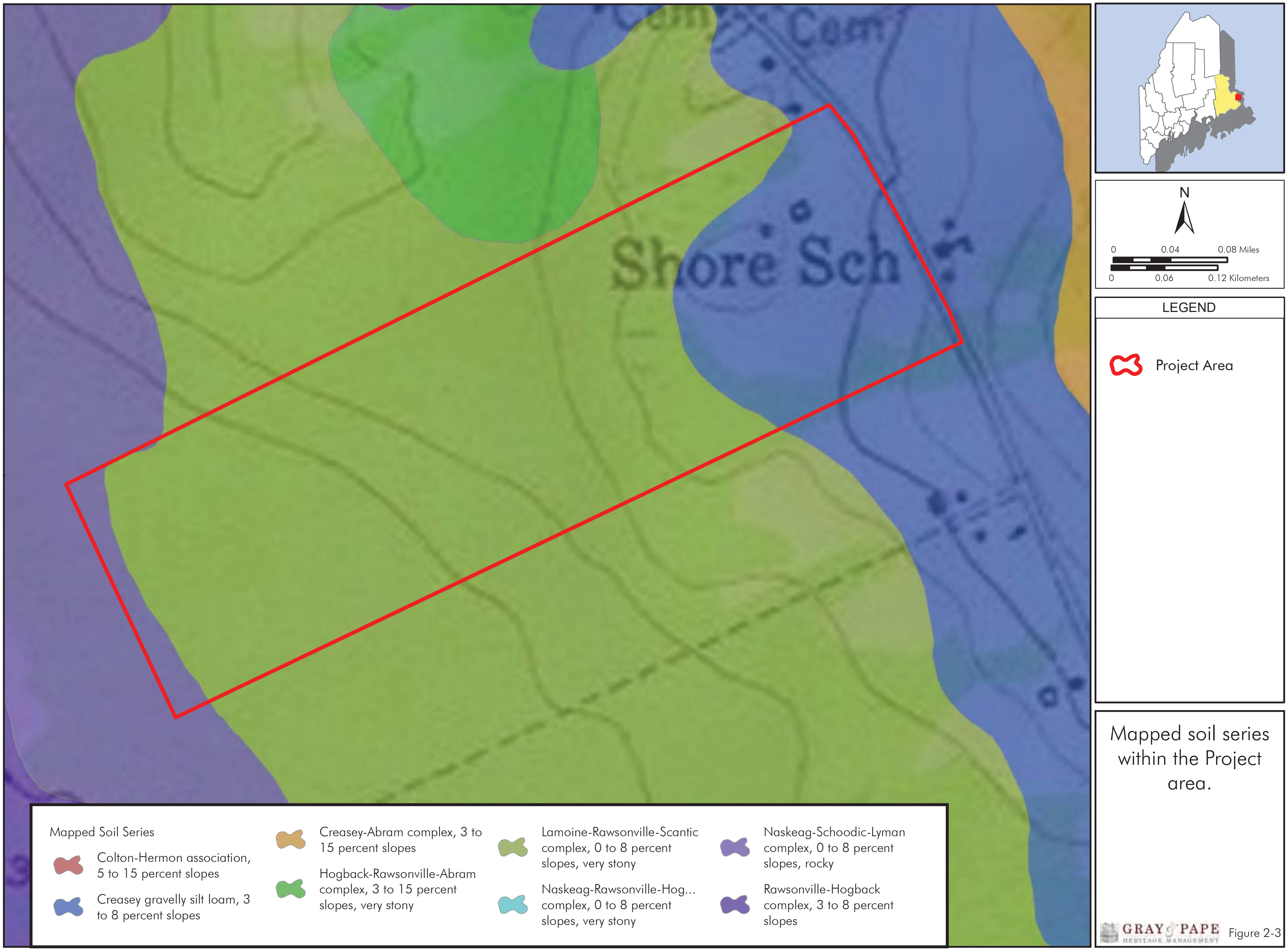


Mapped soil series within the Project area.

Figure 2-3

Table 2-1. Soil Series in the Project Area.

Map Unit Soil Series	Soil Order	Soil Texture	Drainage Description	Landscape Setting	Sediment Origins
Creasey	Spodosol	Gravelly silt loam	Somewhat excessively drained	Bedrock-controlled landforms	Glacial till; thin, over red sandstone or conglomerate
Hogback	Spodosol	Gravelly fine sandy loam	Well drained	Summits, shoulders and backslopes of mountains, ridges and hills	Glacial till
Lamoine	Inceptisol	Silt loam	Somewhat poorly drained	Coastal lowlands and river valleys	Glaciolacustrine or Glaciomarine
Naskeag	Spodosol	Fine sandy loam	Somewhat poorly drained and poorly drained	Depressions between shallow glaciated bedrock ridges oi coastal peninsulas and islands	Glacial till
Rawsonville	Spodosol	Very fine sandy loam	Well drained	Mountain tops, mountain side slopes, ridges, hill tops, and hill slopes	Glacial till
Scantic	Inceptisol	Silt loam	Poorly drained	Coastal lowlands and river valleys	Glaciolacustrine or Glaciomarine

2.4 Hydrology

Modern stream courses developed after the glacial retreat in new or previously formed drainage channels. The Project area falls within the Passamaquoddy Bay watershed. This watershed is part of the Eastern Coastal Rivers watershed, with the St. Croix as the largest freshwater flow into the bay. Passamaquoddy Bay drains into the Bay of Fundy. Within the Project area, recent wetlands mapping by Wood indicates the presence of three streams (one man-made), three wetlands, and one vernal pool complex. The streams are all first or second order in size and all drain to the east into Passamaquoddy Bay.

2.5 Climate, Flora, and Fauna

Near the end of the Pleistocene, between approximately 14,500 and 14,000 B.P., a sharp warming trend occurred, which was followed by a cooler period that lasted into the early part of the Holocene. The tundral vegetation regime that followed the retreat of the glaciers was soon replaced by a mixed conifer and northern hardwoods type regime (Delcourt and Delcourt 1981, 1984, 2004), mainly white pine (Grimm and Jacobson 2004). After about 10,000 B.P., warming trends began again and lasted until approximately 6000 B.P., when an essentially modern climate was established. Vegetation in the region assumed the modern mix of oak-hickory and spruce-fir forests seen up to modern times (Delcourt and Delcourt 1981, 1984, 2004; Grimm and Jacobson 2004). The modern floral community of the Project area could be characterized as a spruce-pine woodland. These forest types contain canopy trees that include balsam fir, black spruce, northern white cedar, paper birch, red spruce, white pine, and white spruce. Sapling and shrub undergrowth can include bayberry, shadbush, wild raisin, black huckleberry, lowbush blueberry, and sheep laurel. Herb undergrowth can include bracken fern and bryoid undergrowth can include dicranum moss, red-stemmed moss, and reindeer lichen (Gawler and Cutko 2010). Wetland areas of the Project area may also be characterized as a spruce bog natural community. In these common forest bogs, canopy trees include balsam fir, black spruce, gray birch, red spruce, and white pine. Sapling and shrub undergrowth can include balsam fir, black spruce, larch, mountain holly, rhodora, sheep laurel, black huckleberry, Labrador tea, and velvet-leaf blueberry. Herb undergrowth can include balsam fir, black spruce, cinnamon fern, creeping snowberry, lowbush blueberry, and three-seeded sedge. Bryoid undergrowth can include dicranum moss, red-stemmed moss, reindeer lichen, and sphagnum mosses (Gawler and Cutko 2010).

Around 14,000 years ago, many North American megafauna were still extant in the region. Stag moose, giant beaver, mastodon, among many others, inhabited this fresh land, along with many of the smaller animals still extant today. By around 10,000 B.P., most of these megafauna were extinct, along with many smaller animals, none of whom were equipped to evolve in a suddenly ice-free environment. Some migrated north, like the caribou herds, following the retreating ice and tundra environments. Predatorial species, such as black bear, wolf, coyote, and mountain lion, would take the top spots on the food chain as they moved into this newly re-exposed landscape. Moose, deer, turkey, opossum, snakes, and rabbits inhabited the woodlands and fields. Lakes and streams were occupied by beavers, otters, turtles, ducks, geese, loons, and salmon, among many others. Little change would be seen in the types of birds, fish, and animals present, even with the presence of Native American groups, until the arrival of historical settlers, who would have a profound impact on the environment and the creatures who inhabited it.

The contemporary climate of the study area is similar to that reported by its first Euroamerican settlers. The climate is classified as temperate-continental, with a significant temperature range among the seasons and moderate rainfall. The average summer temperature is 20 degrees Celsius (°C) (68 degrees Fahrenheit (°F), and the average winter temperature is -7°C (19.4°F) (National Oceanic and Atmospheric Administration [NOAA] 2000a). Terrain and plant cover affect local climatic conditions, creating microclimates. This is particularly true in areas of considerable topographic variation. While the prevailing winds blow ordinarily from the south and west, in the winter they blow frequently from the north. The annual rainfall is about 109 centimeters (cm) (42.9 inches [in]) (NOAA 2000b).

3.0 METHODOLOGY

The desktop analysis is meant to identify documented archaeological sites and architectural resources within the Project area. Identifying the presence of known resources and the extent of previous surveys and investigations provides the USCG and review agencies with information regarding the presence of previously recorded sites, including those listed in the NRHP and State Register of Historic Places, within or adjacent to the Project area. The scope of the project was limited to previous research and existing databases. Based on the assessment, recommendations as to the impact of the project are made.

3.1 Background Research

The analysis included a review of the files maintained by the Maine State Historic Preservation Commission (MHPC) in May and June 2019 for both previously documented architectural and historical resources and archaeological resources. The MHPC maintains a record of all known archaeological sites, including both Native American and historical period sites, as well as burial sites, and architectural records. The MHPC also maintains a database of previous cultural surveys.

Specifically, a file search was undertaken at MHPC and via the online Cultural & Architectural Resource Management Archive (CARMA) maintained by the Maine Department of Transportation (MDOT) to determine if previously surveyed architectural or historical resources were within a 0.8-km (0.5-mi) radius of the site at 576 Shore Road. The file search undertaken at MHPC to determine if previously surveyed archaeological resources were present was constrained to a 1-km (0.6-mi) radius of the Project area. Copies were made of all forms documenting previously identified architectural, historical, and archaeological resources.

Architectural resources located within sight of the property were identified and reviewed within the MHPC records. The NRHP files were also checked for the Town of Perry, to identify any NRHP-listed or -eligible properties located in, or near, the proposed location. Locational information from the files was crosschecked against MHPC documentation.

Primary sources of information included historical maps and the Perry, Maine, tax assessor valuations records. No historical Sanborn maps exist for the Project area. The historical data was utilized to produce a land-use history of the property as located in Section 4.6 below.

3.2 Reconnaissance Survey

A field reconnaissance level architectural survey was conducted in June 2019 to assess the condition and NRHP eligibility of the Project area, as well as to photo document the extant structures. A concurrent archaeological reconnaissance survey was also conducted over the Project area to identify initial areas of archaeological sensitivity. This reconnaissance consisted solely of a single-person walkover of the Project area, allowing for the identification of wetlands and surface soils. The reconnaissance was not completed using a systematic walkover spacing. It was utilized to take generalized view photographs of the Project area and structures therein. The locations of photographs, as well as wetlands and trash dumps identified, were give global positioning system (GPS) points using an EOS Arrow 100 sub-foot GNSS antenna in conjunction with ArcGIS Collector.

4.0 LITERATURE REVIEW RESULTS

4.1 Stakeholders

The project scope of work requested the identification of potentially interested parties in the property proposed for development by the USCG. Four potential stakeholders have been identified, consisting of federally recognized Native American tribal entities. The contact information for these Tribes is in Table 4-1. This list makes no guarantee that the enumerated groups will participate in consultation, but rather serves as a list of potentially interested parties.

4.2 Previous Surveys

Based on data from the MHPC records, the Project area has never been part of any previous cultural resources study. The closest previous study to the Project area was conducted approximately 6.4 km (4 mi) to the north in the Town of Robbinston. A Phase I pre-contact archaeological investigation was conducted in 2006 (Clark et al 2006) for a liquified natural gas import terminal. The project consisted of a 47-acre terminal and a 31-mile pipeline. From these 14 testing areas were chosen for archaeological survey, as the highest probability areas for location pre-contact Native American site. A total of 148 shovel test pits excavated and one previously unidentified Native American site (96.09) was identified. This site is located approximately 22 km to the northwest of the current Project area.

4.3 Native American Archaeological Sites

The MHPC records identify no previously recorded archaeological sites within 1.6 km (1 mi) of the current Project area. The closest site to the Project area, site 97.6, is located approximately 6.4 km (4 mi) to the north, in Mill Cove, in the Town of Robbinston. The site was identified by survey investigations of the Passamaquoddy Bay region undertaken by the Robert S. Peabody Foundation in the mid-twentieth century. Site has never been relocated or evaluated for NRHP eligibility (Clark et al 2006).

Table 4-1. Contact Information for Potential Stakeholders.

Group Name	Address	Point of Contact	Phone Number
Aroostook Band of Micmac	P O Box 772, 521-D Mani St. Presque Isle ME 04769	Jennifer Pictou THPO 7 Northern Road Presque Isle, ME 04769	207.764.1972, 207.764.7667
Houlton Band of Maliseet Indians	RR #3 Box 450 Houlton ME 04730-9514	Sharri Venno Environmental Planner/ Cultural Lead 88 Bell Road Littleton, ME 04730	207.532.4273, extension202
Passamaquoddy Tribe	Indian Township Reservation Post Office Box 301 Princeton ME 04668	Donald Soctomah THPO PO Box 159 Princeton, ME 04668	207.796.5533
Penobscot Nation	6 River Road, Indian Island Reservation Old Town ME 04468	Christopher Sockalexis THPO Cultural & Historic Preservation Department 12 Wabanaki Way Indian Island, ME 04468	207.817.7471

4.4 Historical Archaeological Sites

No previously recorded historical archaeological sites were identified proximate to the Project area.

4.5 Architectural Resources

No architectural resources previously documented by the MHPC or determined eligible for, or listed in, the NRHP are located within a 0.8-km (0.5-mi) radius of 576 Shore Point Road; however, Table 4-2 provides the list of all structures within a 0.8-km (0.5-mi) radius of the Project area.

4.6 Land-Use History

The Town of Perry, Maine, is in Washington County, near Latitude 45°, halfway between the equator and the North Pole. Perry is bounded by Passamaquoddy Bay to the east, the Town of Robbinston to the north, the Town of Pembroke on the west, and the Town of Eastport to the south. Perry is located within Washington County, the easternmost county of Maine. The county is predominately forested, but features large open blueberry barrens, and over twenty-five lakes. This rural county once included present-day Aroostook County until its separation in 1839 (Town of Eastport 2004).

Prior to European settlement, Native Americans of the Wabanaki Federation occupied the areas around Passamaquoddy Bay and Washington County. The current Passamaquoddy tribal members that today live on the Pleasant Point reservation in Perry are descendant from peoples who originally made their main village in the area of present-day St. Andrews, New Brunswick. Due to pressure from European settlement, those tribal people moved first to Indian Island in the Passamaquoddy Bay. During the War for Independence, the Passamaquoddy people of Indian Island declared themselves to be allied with the United States and, consequentially, were removed from Indian Island when the island became part of Canada after the war. Since 1794, Pleasant Point in Perry has been home to the Passamaquoddy reservation (Town of Perry 1968).

The Passamaquoddy native peoples practiced a lifestyle that focused on annual resource gathering and production. Tribal groups would move their settlements in response to the weather and availability of food. Areas along the coast or near streams and rivers were popular areas for large settlements due to the access to food and water transportation. The waterways were the transport systems of the regional native peoples throughout the history of their occupation of this landscape. The bay and rivers here provided good and consistent resources that allowed people to stay focused around them. Upland habitation was likely more limited to smaller groups with special resource collection goals, such as gathering nuts and berries or hunting (Maine Indian Program 1989). Archaeological evidence of these occupations is seen in the coastal shell middens that have been recorded at least as close by as Mill Cove in the Town of Robbinston (site 97.6) or at inland fishing locations, such as seen in the village of Meddybemps (site 96.2, the N'tolonapemk site) near the confluence of Denny's Stream and Meddybemps Lake (Clark et al. 2006). It was only after the pressures of European settlers, both in the form of introducing concepts such as individual family ownership of land (and not allowing for communal use of resources of the land) and the negative environmental impacts cause by the clearing of the lands for agricultural and industrial use, that the Passamaquoddy Bay tribal people were forced to abandon most of this traditional lifeway.

Table 4-2. Above-Ground Resources within 0.8-Kilometer (0.5-Mile) Radius of Project Area

Address	Date of Construction	National Register Status
31 Maynards Trailer Park	1940	Not Eligible
38 Kingsbury Road	1920	Not Eligible
442 Shore Road	1890	Not Eligible
456 Shore Road	1958	Not Eligible
457 Shore Road	1940	Not Eligible
491 Shore Road	1960	Not Eligible
524 Shore Road	1850	Not Eligible
576 Shore Road	1968	Not Eligible
594 Shore Road	1855	Not Eligible
602 Shore Road	1840	Not Eligible
632 Shore Road	1830	Not Eligible
647 Shore Road	1870	Not Eligible
658 Shore Road	1900	Not Eligible
665 Shore Road	1900	Not Eligible
712 Shore Road	1900	Not Eligible
750 Shore Road	1890	Not Eligible
Shore Road	1947	Not Eligible

In 1604, Samuel de Champlain and Sieur de Monts established the first European settlement north of St. Augustine, Florida, in Calais, Washington County, on St. Croix Island. This settlement failed after a harsh first winter, which claimed the lives of many of the colonists, with the colony removing itself to Nova Scotia. The island is located approximately 13 km (8 mi) north of the Project area; however, the colonists were known to have utilized the shoreline of what would become the United States, likely around the village of Red Beach. The island would again become important in the history of the nations of Canada and the United States after the War for Independence, as the location of the island helped determine the new international border. Of particular note in 1797, the historical identification of the island of St. Croix as the correct location of the French colony was determined through the first federally supported archaeological investigation (Donovan n.d.) utilized to accurately identify the ruins of the colony.

The first Euroamerican settler in the area of Perry was Captain John Frost, who settled at Pleasant Point in 1763, with the main aim of establishing a permanent trading center with the local Passamaquoddy Native American people and other regional Wabanaki tribes (Town of Perry 1968). Massachusetts purchased the area of the town as Plantation No. 1 between 1783 and 1784 (Varney 1886). The commonwealth also purchased 72.8 ha (180 ac.) of land, the majority of Pleasant Point, from Frost in 1794 to form a reservation for the Passamaquoddy people (Town of Perry 1968).

After the War of Independence, Euroamerican settlement in the town began in earnest and, by 1790, approximately 66 such settlers were living in the tow area. In 1818, the Town of Perry was incorporated, with a population that housed 57 eligible voters (Town of Perry 1968). Land bordering the Passamaquoddy Bay was disputed territory during the War of 1812, and the nearby Town of Eastport was occupied by the British from July 1814 to July 1818 (Town of Eastport 2004).

The Town of Perry has always maintained a rural character. The earliest industry of the town was lumbering, which was quite profitable until the old growth trees had been removed. When the high value lumber had been removed, smaller lumber-related industries began in the town. As early as 1830, the first sawmill was established, followed in the later part of the century by smaller milling for products, such as barrel staves and hoops, box wood, laths, singles, and railroad ties. These were mostly smaller family business, supplied by family tree lots. It was not until the advent of the paper mill industry in the region, in 1906, that lumbering again became a highly profitable industry (Town of Perry 1968).

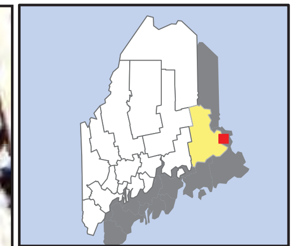
After the initial lumbering boom, industry turned to agriculture and aquaculture as its main industries. While crops, such a potatoes and blueberries were important industries, early agriculture focused on sheep, cattle, and hay as the main products. Coastal fishing was focused on herring, which could be easily taken with weirs. Sardine canning plants were occasionally seen in the late ninetieth and twentieth centuries, but never developed into as strong an industry (Town of Perry 1968) as seen further to the south on the Maine coast.

Shipbuilding was a somewhat consistent industry within the town; however, the industry did not flourish as much of the local timber was sold for use abroad. Shipbuilding records indicate that less than one ship was built in the town per year in the period between 1824 and 1849, and it was not until 1869 that multiple ships were seen to be built in a single year over many consecutive years. This may be a reflection of the lack of local timber of sufficient size to support a shipbuilding industry after the initial logging off of the land, until the mid to late nineteenth century. The last ship built in the town was in 1891(Town of Perry 1968).

Perry did not have railroad access until 1896; prior to that, the main transportation for the town was by Passamaquoddy Bay or via a few turnpike or carriage roads (Town of Perry 1968). The arrival of the railroad allowed lumber to be delivered to Machiasport for the construction of ships.

The Project area parcel today consists of rural farmland, surrounded by woods on the west side of Shore Road. Above-ground resources on the parcel include a ca. 1968 house and barn, and a series of ca. 1970 outbuildings. To the east of Shore Road are additional agricultural field and woods which descend to Passamaquoddy Bay.

According to historical maps, minimal development has occurred in the Project area. The earliest map depicting detail of the Shore Road area (Figure 4-1) indicates it was somewhat thickly settled by 1861 (Walling 1861). The settlements here are predominately on the west side of Shore Road, perhaps indicating that the east side of the road was considered too topographically steep for convenient occupation. Also lacking is evidence of much settlement or industrial structures at the water's edge by Passamaquoddy Bay, again likely due to local topography making such industry impractical. Within the Project area, Figure 4-1 shows structures belonging to D. Golding and S. Welch are present, likely indicating the parcel was, at this time, two separate properties. Figure 4-1 also shows that by 1861 the infrastructure of the roads which are still in modern use today are already in place. A road or trail once connected Shore Road to (current) Route 1 located just to the south of the Project area, as seen on this map, but is no longer present as a modern road. Of small note is that a schoolhouse, the Shore Road School, is located across the street from the Project area. This school was in operation from at least 1847 to 1944 when it was consolidated (Town of Perry 1968).



N

0 0.15 0.3 Miles

0 0.25 0.5 Kilometers

LEGEND

Project Area

Project area as shown on the 1861 map of Washington County (Walling 1861).

GRAY & PAPE HERITAGE MANAGEMENT

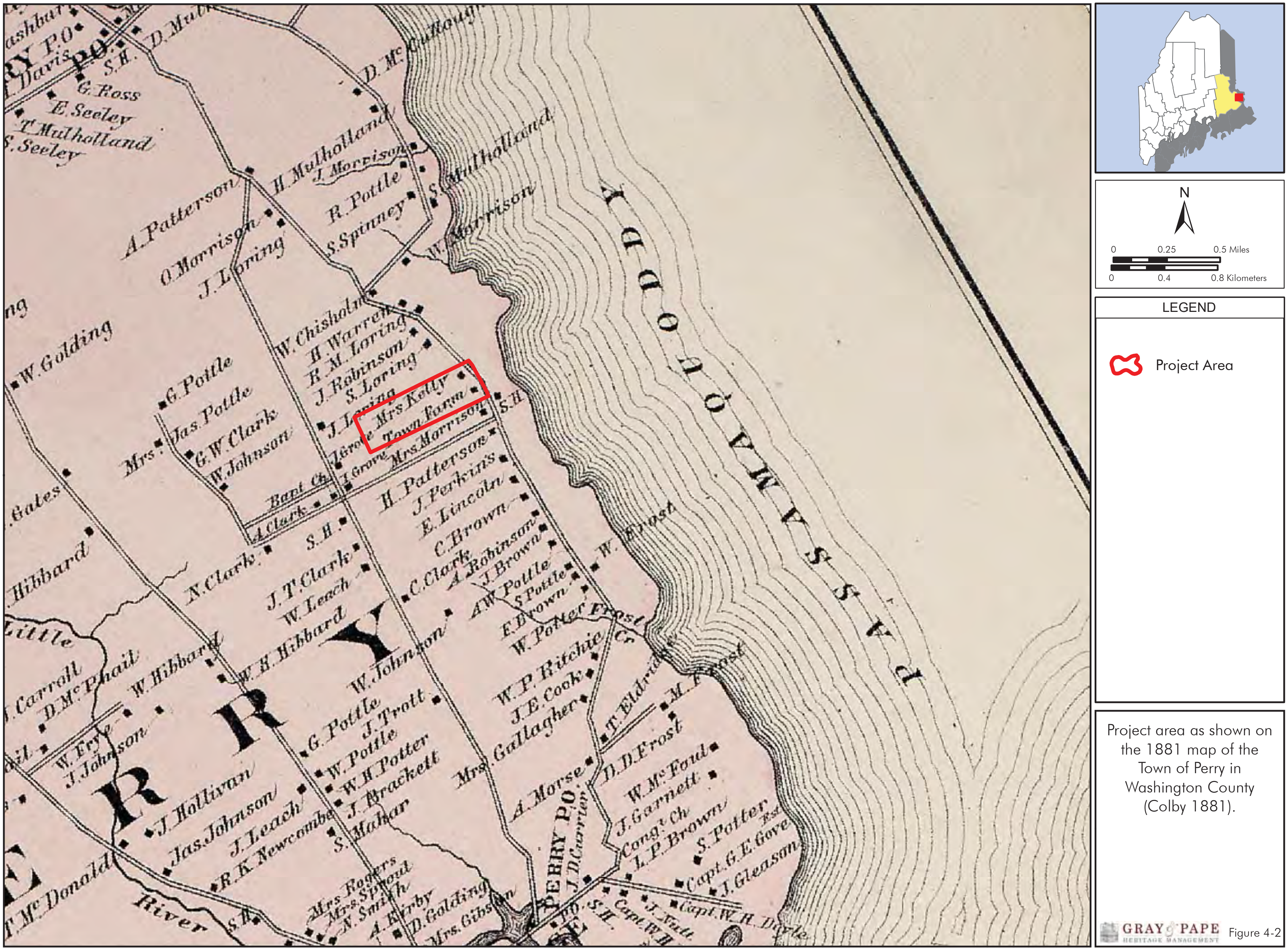
Figure 4-1

Figure 4-2 depicts the Project area on an 1881 map (Colby 1881). Virtually no changes can be seen between this map and the one from 20 years earlier, with the exception of different property owner associated with structures along Shore Road. Within the Project area, at the time of this 1881 map, the structures are indicated as belonging to Mrs. Kelly and one that is a Town Farm. The Town Farm seen here is indication of the town either supporting a struggling family or that it had purchased the F. Walsh property to house families or individuals who could not support themselves. Town farms, or poor houses, were usually town-run institutions in which people of the community who were either too poor to care for themselves, or had a disability that made it hard for them to provide care for themselves, could be housed. Usually people on such town farms where able, or required, to farm the land they were housed on in turn for their housing. This kind of town run institutional care lasted from the early nineteenth to mid twentieth century.

Figure 4-3 depicts the Project area in 1929 as seen on the first USGS map of the Robbinston Quadrangle. The most notable aspect of this map in the marked decline in population along Shore Road, as indicated by a drastic reduction in mapped structures along the road. This map shows that the road connecting Shore Road to (current) Route 1 had already been downgraded to a trail or other secondary road at this time. This map gives the first indication of the topography of the region the Project area is located in, showing a relatively steep rise from Passamoquoddy Bay to about the location of Shore Road, the west side of which continues to rise more gently to a peak around 73 m (240 ft) above mean sea level (AMSL) before descending again towards Boydens Lake to the west. The Project area is shown here to lie across one or more toe slopes, dissected by somewhat ephemeral streams or dry drainages to the north and south. A colorized version of the 1929 USGS map, produced by the USGS in 1931 (Figure 4-4), indicated that the area around the Project area and Shore Road in general was much more cleared of wood lots than seen today, presumably indicative of a more agricultural landscape. The updated Robbinston USGS Quadrangle map of 1949 (Figure 4-5) shows that much of this open landscape had been allowed to return to forest lands by that time. Current aerial images (Figure 1-2) show that the agricultural land has continued to shrink and much of this land has reverted to forests. The 1947 map does indicate some renewed settlement in the area, this time close to the Passamaquoddy Bay shoreline, which is indicative of an influx of part-time vacation/leisure residences.

By the time of the 1929 USGS map (Figure 4-3), only one structure is shown as present on the Project area property. Its general orientation in the northeastern corner of the Project area indicates it is likely equivalent to the Golding/Kelly structure(s) location as depicted in the 1861 and 1881 maps (Figures 4-1 and 4-2). The modern extant structures within the Project area may be in an equivalent area to the historical structures; however, none of the extant structure show indication (architecturally or documentary) of being present/built before the late 1960s. No indication of the Welsh/Town Farm structure is seen on this or later maps. Town records indicate that the "poor farm", likely this same Town Farm on the 1881 map, was voted to be sold in 1888 (Town of Perry 1968). It may be likely that the associated structure was razed or sold off at that time.

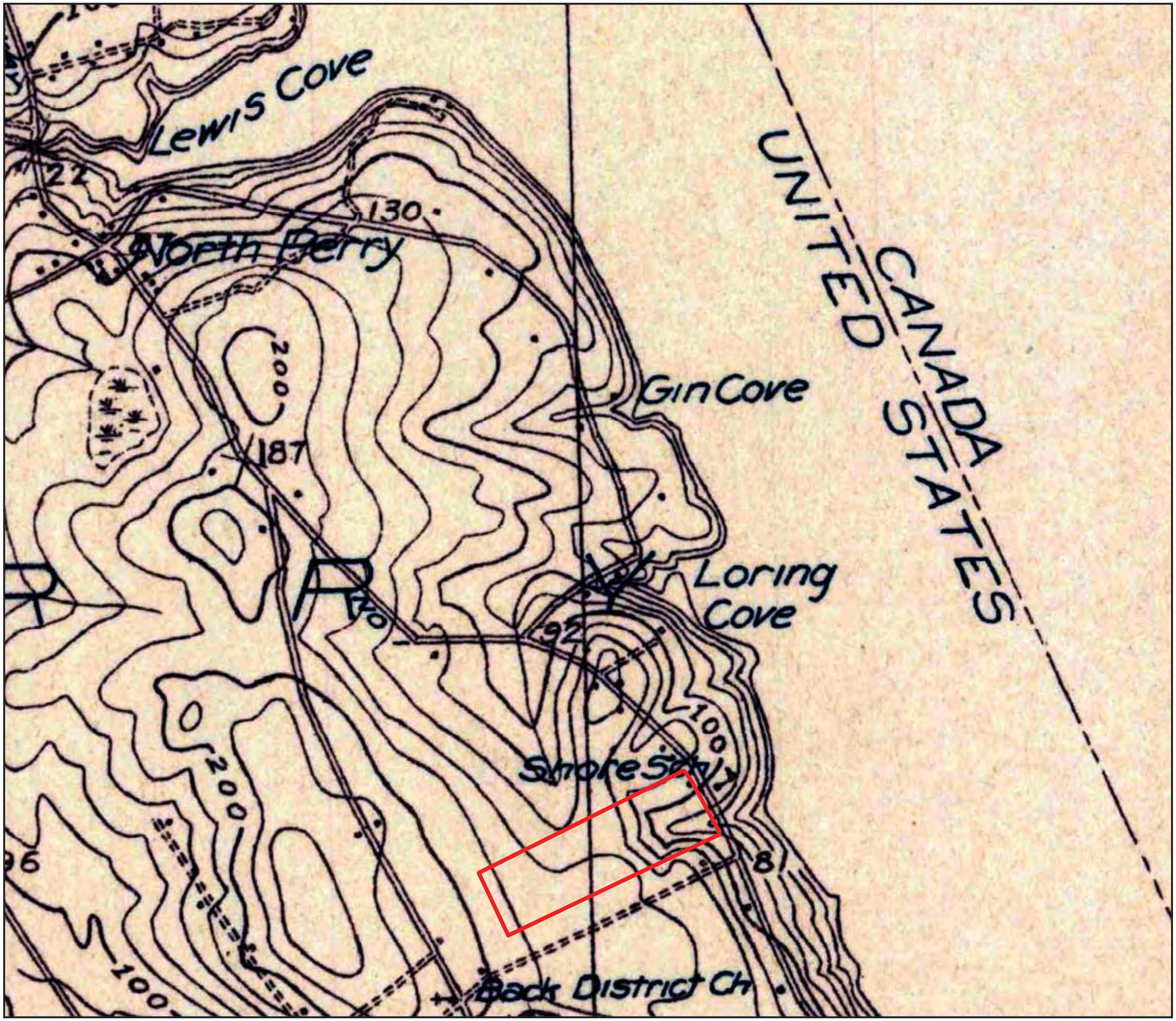
Deed research shows that the modern structures on the project parcel were likely constructed by Fritz Gutsmidt and John Kalning who purchased the land from John W. Henderson in 1949. In 1995, William P. Butler and Joan Harrington sold the property to David and Betsy Myers, who sold the property to the current owner Eleanor A. and Charles E. Senior Barstow in 1997.

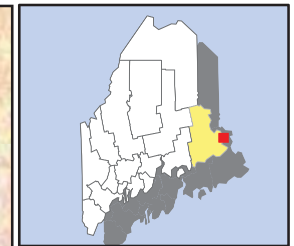


Project area as shown on the 1881 map of the Town of Perry in Washington County (Colby 1881).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 4-2





N

0 0.15 0.3 Miles

0 0.25 0.5 Kilometers

LEGEND

Project Area

Project area as shown on the 1929 USGS map of the Robbinston Quadrangle (USGS 1929).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 4-3

Created in ArcGIS 10.4 for G&P Project 16-73901.002

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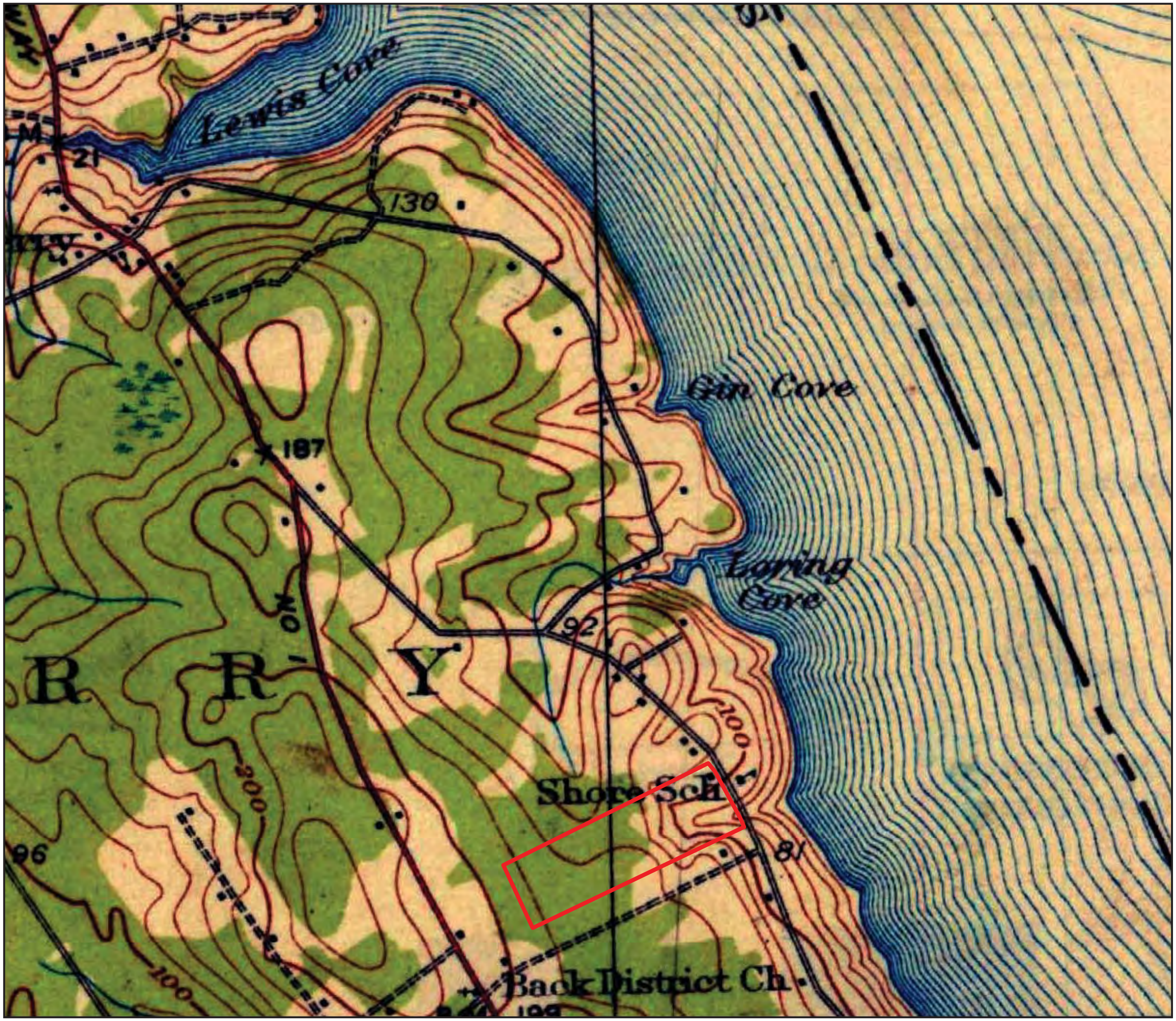

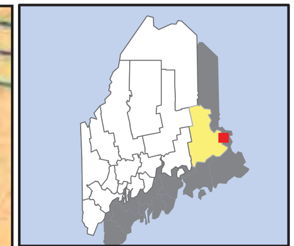

N

0 0.15 0.3 Miles

0 0.25 0.5 Kilometers

LEGEND

Project Area

Project area as shown on the 1931 USGS map of the Robbinston Quadrangle (USGS 1931).

GRAY & PAPE HERITAGE MANAGEMENT Figure 4-4

Created in ArcGIS 10.4 for G&P Project 16-73901.002

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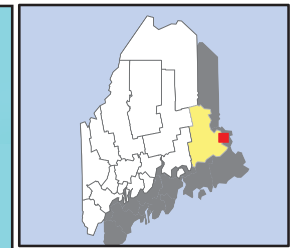

Project area as shown on the 1949 USGS map of the Robbinston Quadrangle (USGS 1949).

GRAY & PAPE HERITAGE MANAGEMENT

Figure 4-5

5.0 FIELD SURVEY RESULTS

A reconnaissance survey was conducted of the 576 Shore Road property in June 2019. The property was observed and photographed to provide an initial characterization of the landscape and potential cultural resource sensitivity, as well as the architectural characterization of the extant structures on the property.

5.1 Architectural Results

The house located at 576 Shore Road in Perry, Washington County, is a two-story, residential Ranch-style building constructed ca. 1968 (Figure 5-1). The two-story mass is attached its south façade to a one-story mass that connects to a two-bay garage. The building features a standing-seam metal side-gable roof, with a cross-gable roof on the one-story mass on the south façade. Exterior walls are clad in replacement vinyl siding and set atop a continuous concrete block foundation. The main entrance features sidelights, and is located on the east façade, flanked by two bow windows with decorative shutters. Remaining fenestration on the east façade includes eight-over-eight double-hung replacement windows, with decorative shutters, and a six-over-six double-hung replacement windows on the one-story mass adjacent to a secondary entrance. Fenestration on the west façade includes one-over-one, eight-over-eight, and six-over-six double-hung replacement windows, and a triple casement window with a metal awning. A fixed twelve mullioned picture window is located on the one-story mass next to a secondary entrance. Two one-over-one double-hung replacement windows with decorative shutters are on the east façade of the one-story mass. An attached two-bay garage is located on the south façade of the one-story mass. An exterior brick chimney is located on the ridgeline of the north façade and an interior brick chimney is located on the west slope of the side-gable roof between the one-story and two-story mass.

A barn, constructed ca. 1968, is located west of the main building (Figure 5-2). The barn features a gambrel roof clad in a combination of sheet metal and asphalt-shingles. Exterior walls are clad in wood shingles. A sliding wood door, a sliding replacement window and a hay window are located on the south façade. The north façade features a hay window. The east façade features an entrance, a double sliding door, and four bays of sliding windows.

Three modern outbuildings, constructed ca. 1970, are located southwest of the main building. A one-story wood framed shed featuring an asphalt-shingled side-gable roof is south of the historic barn. Exterior walls are clad in board-and-batten and the north façade features a wood sliding door and a picture window (Figure 5-3). A small metal pellet stove features a roll-up metal door on the west façade and a chimney pipe is offset north on the gabled roof (Figure 5-4). A metal shed is located south between the historic barn and the main building (Figure 5-5). The roof, and the east and west façades, are clad in standing-seam metal. The north and south façades are clad in board and batten. Three bays of two-over-two double-hung windows are located on the south façade. The north façade features a three-mullioned double door, offset west, and a wood sliding door, offset east. A chimney pipe is on the west slope of the roof.

5.2 Archaeological Reconnaissance Results

The Project area is bounded to the northeast by Shore Road and on all other borders by the wood lots of neighboring property. The Project area consists of small portion of open land or former agricultural fields and a house lot, with the majority of the property consisting of a large wood lot. The house lot area of the property contains the extant structures and is overgrown in places (Figure 5-7). The three former agriculture fields (pastures) are clustered on the northeast side of the property, here called Pasture 1 (Figure 5-8), Pasture 2 (Figure 5-9), and Pasture 3 (Figure 5-10). Pasture 1 is nearest to Shore Road, abutting it; Pasture 2 abuts the west side of Pasture 1, and Pasture 3 abuts the west side of Pasture 2. The pastures a separated by small tree lines, and all three are bounded on their northern side by the house lots.

The rest of the Project area, representing its majority, is wooded with moderate aged growth (predominantly less than 100 years of growth). The wooded areas appear undeveloped, except for old logging roads (Figure 5-11), giving evidence that the property was extensively logged in the past. The tree growth consists mainly of softwoods and has a moderately open undergrowth (Figure 5-12).

Figure 5-1. House at 576 Shore Road, view to the west.

Figure 5-2. Barn at 576 Shore Road, view to the southwest.

Figure 5-3. One-story wood-framed shed at 576 Shore Road, view to the north.

Figure 5-4. Small, metal pellet stove at 576 Shore Road, view to the south.

Figure 5-5. Metal shed at 576 Shore Road, view to the southeast.

Created in ArcGIS 10.4 for G&P Project 16-73901.002

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Plan map showing the location of the structures and pastures within the Project area.

Figure 5-6

Figure 5-7. House lot at 576 Shore Road, view to the southwest.

Figure 5-8. Pasture 1 area, view to the northwest.

Figure 5-9. Pasture 2 area, view to the southeast.

Figure 5-10. Pasture 3 area, view to the south.

Figure 5-11. Representative example of disused logging road, view to the southwest.

Figure 5-12. Representative view of wooded area, view to the west.

Within the wooded area are several first or second order streams and several wetlands. As defined by wetlands survey completed by Wood in May of 2019. Three streams (A, B, & C), three wetlands (A, B, & C), and one vernal pool complex were observed, as shown on Figure 5-9. These same wetland and stream areas were observed during the cultural reconnaissance (Figures 5-10 to 5-12). Both this and the wetland survey identify Stream A (and the pond it originates from) as man-made features. This was determined due to the presence of spoil piles of sediments on the banks of the stream (Figure 5-11). Wetlands observed consisted mainly of areas of mucky soil and wetland vegetation. The vernal pools described in the wetlands survey were not observed during the cultural reconnaissance.

A historical trash dump (Figures 5-13) was found inside the apex of the tree line that separates Pastures 1 and 2. This dump contained early to mid-twentieth century artifacts. Artifacts contained within this trash dump included domestic (bottles, ceramic, and metallic vessels, shoe leather) and specialized activity (oil and gas cans) artifacts. No apparent structural artifacts were seen within this trash dump, and no structural ruins were seen in association with this dump. The extant structures on the house lot area are the closest apparent historical occupation, at a distance of approximately 60 m (196.8 ft) to the north, for these artifacts to have originated. It is, therefore, assumed that the artifacts in this dump were associated with occupation taking place in the same general location of the current house lot. However, the age of the artifacts may indicate that they are associated with an occupation that occurred at that location which pre-dates the construction of the current house structure (ca. 1968). The artifacts appear to post-date any occupation that may have been associated with Walsh/Town Farm, the exact location of which is unclear.

No evidence of any archaeological sites was identified during the survey.

Created in ArcGIS 10.4 for G&P Project 16-73901.002

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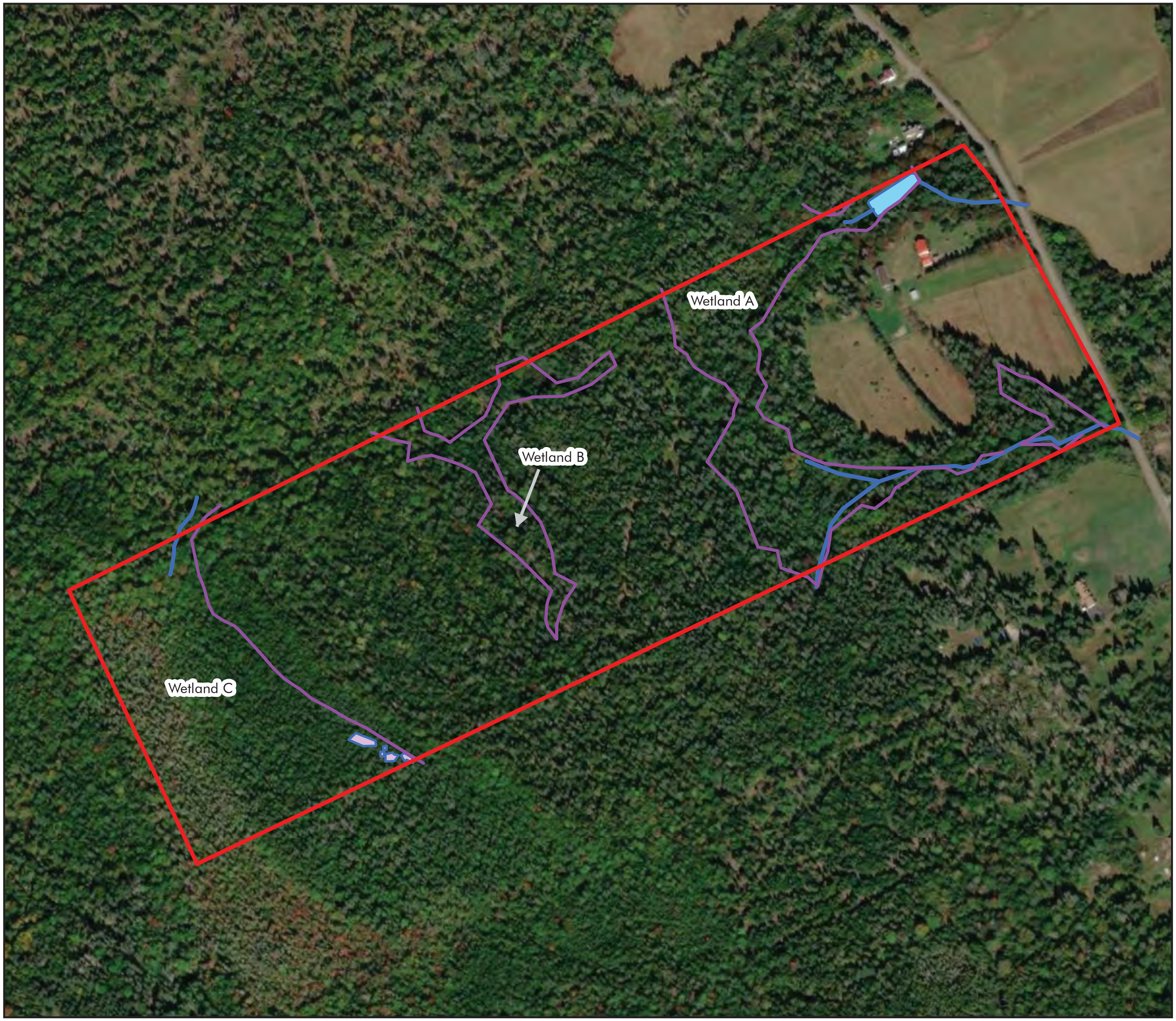
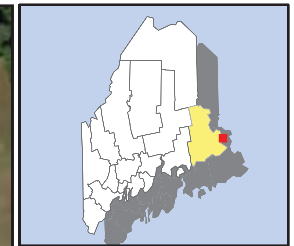




N

0 0.035 0.07 Miles

0 0.055 0.11 Kilometers

LEGEND

- Project Area
- Wetland
- Stream
- Pond
- Vernal Pond

Wetlands, streams, and vernal pools as defined by Wood during May 2019 survey of the Project area.

GRAY & PAPE HERITAGE MANAGEMENT Figure 5-13

Figure 5-14. Stream B, view to the south.

Figure 5-15. Stream A, view to the southwest. Opposite bank consists of a mounded spoil pile from the anthropogenic excavation and creation of this stream.

Figure 5-16. Representative view of Wetlands A, view to the northwest.

Figure 5-17. Representative artifacts found in the trash dump area within the Project area, view to the west.

6.0 CONCLUSIONS AND RECOMMENDATIONS

A preliminary cultural resources study was completed for the parcel located at 576 Shore Road in Perry, Maine for the potential development by the USCG for USCG personnel family housing for service members reporting to Station Eastport, Maine.

Research in local libraries and other repositories did not reveal the extant building located on the property to be associated with any significant events or persons. The building, therefore, is not eligible for inclusion in the NRHP under Criterion A or B. The resource is an undistinguished example of Ranch-style residential building. Furthermore, alterations to the building, including the use of replacement siding and windows, have compromised its integrity of design, workmanship, and materials. As a building that has lost historic integrity, the resource is not eligible for inclusion in the NRHP under Criterion C. Consequently, Gray & Pape recommends this resource as not eligible for inclusion in the NRHP.

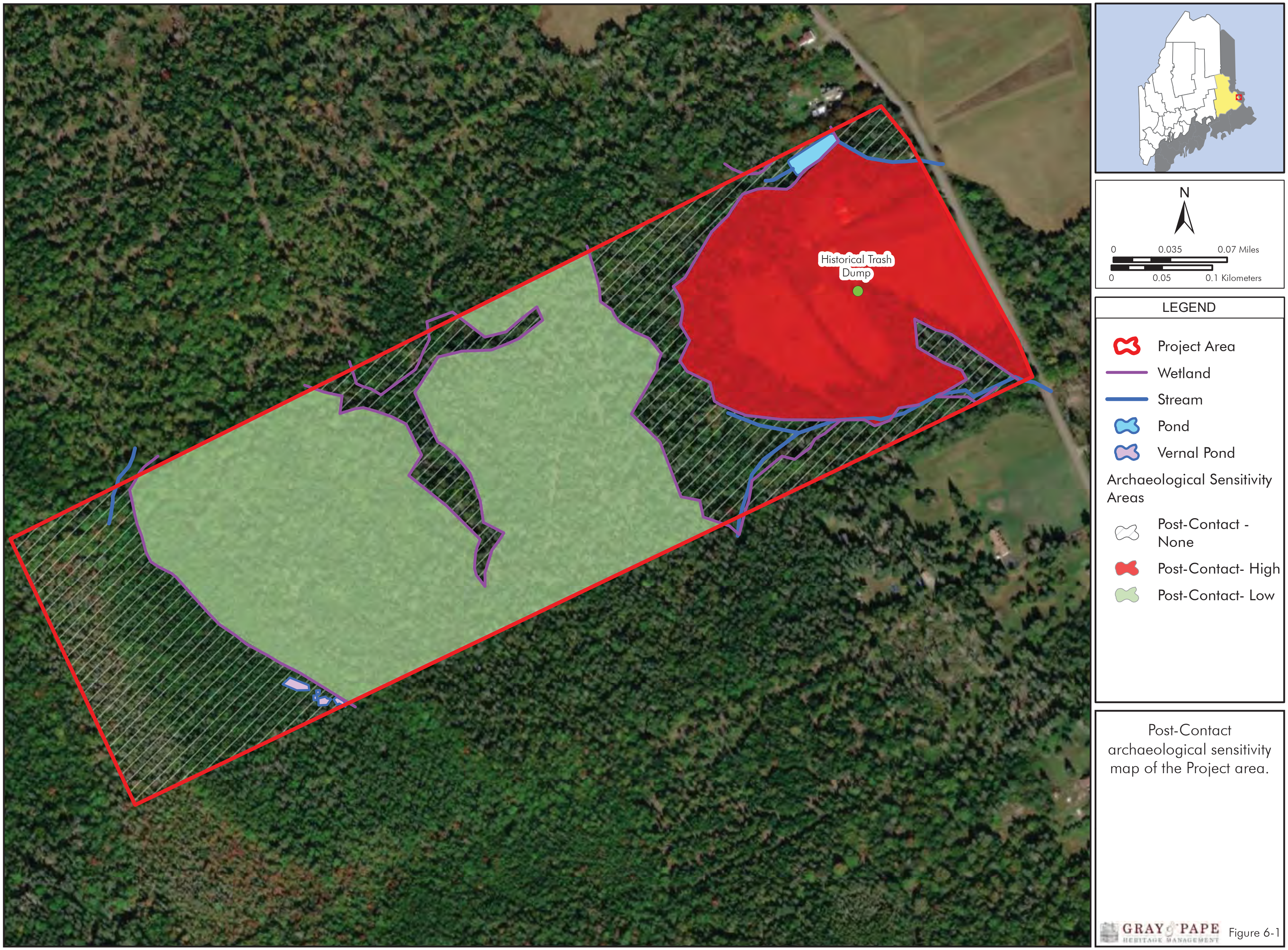
Background research did not identify any known archaeological or historical archaeological resources associated with the 576 Shore Road property. Pre-Contact Native American presence in the Perry area was strong, especial leading up to the Contact period, but no background evidence was found to indicate a known Native American presence in the Project area. The Project area is in an upland landscape and is unlikely to contain larger pre-Contact sites as can be found closer to the shoreline of Passamaquoddy Bay. However, the presence of freshwater wetlands and streams could have attracted native peoples to the area to extract resources they may have possessed. Documentary evidence does show a post-Contact historical occupation within the Project area by at least the mid-nineteenth century. At least two separate historical occupations appear to have occurred within the Project area within the nineteenth to twentieth centuries. The current structures located in the Project area do not appear to relate directly to either of the historical occupations but may occupy the general location of at least one. No evidence of the other historical structure location, which may have housed a Town Farm, was directly observed during the field visit. A single historical scatter, a trash dump (Figure 6-1 and 5-13), was located during the field visit, which appears to be associated with an early to mid-twentieth century occupation predating the construction of the extant structures in the Project area.

Based on the soil data, the Project area is considered moderately well suited for the identification or preservation of archaeological sites. Typically, local uplands along permanent water sources only yield evidence of short-term occupation by pre-Contact period indigenous peoples. Post-Contact occupation of the region mainly follows major waterways, of which the St. Croix River is the closest (at a distance of between 300 and 1,300 m [984.2 and 4,265.0 ft]). The Project area is located at a flat area at the top of slight slope that runs down to east towards the St. Croix River, possibly making it a more attractive location for historical period occupation locations after initial settlement.

A preliminary cultural sensitivity assessment has been assigned to the Project area, separated by either pre-Contact or post-Contact period cultural sites, based on the results of the background literature review and the field reconnaissance visit. These sensitivity designations are shown in Figures 6-1 and 6-2. Previous archaeological investigations in the region and in the State of Maine indicate that pre-Contact Native American occupation sites are predominately associated proximal to water resources including seacoasts, streams, lakes, and wetlands. Proximity to water seems to be one of the single most important factors in locating these sites (Spiess 1994). Other factors

Created in ArcGIS 10.4 for G&P Project 16-73901.002

6/17/2019 M:\00_Projects_Yearly\2019\19-82901\Working_GIS\00_Projects\19-82901.001_Historical_Sensitivity.mxd

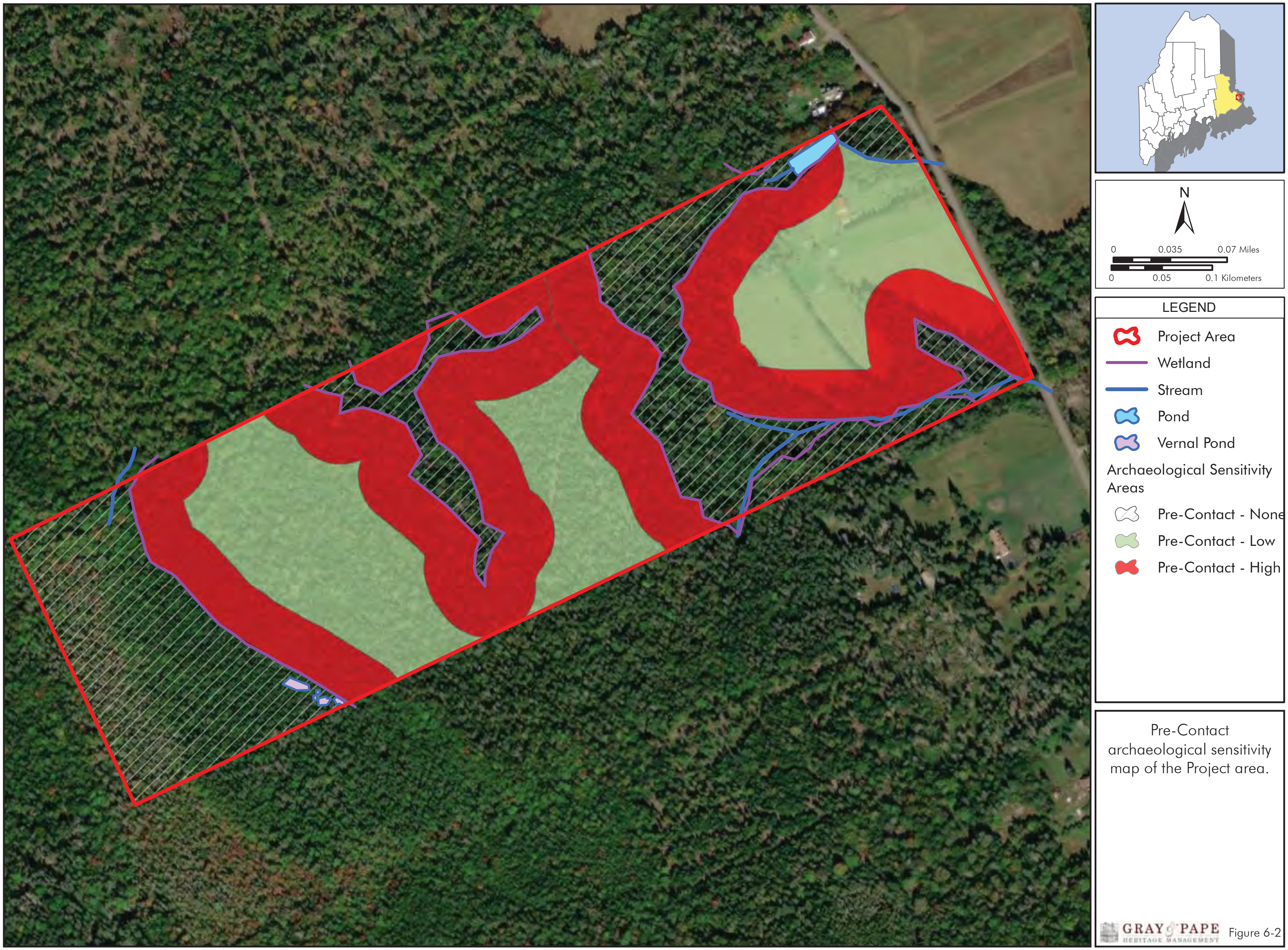


Post-Contact archaeological sensitivity map of the Project area.

Figure 6-1

Created in ArcGIS 10.4 for G&P Project 16-73901.002

6/13/2019 M:\00_Projects_Yearly\2019\19-82901\Working_GIS\00_Projects\19-82901.001_Pre-Contact_Sensitivity.mxd



Pre-Contact archaeological sensitivity map of the Project area.

Figure 6-2

include the soil or sediment type and the grade of the landscape. Pre-Contact Native sites are often associated with well-drained soils and on landscapes with slopes of generally less than 8 percent. Similar to the correlation of pre-Contact sites to streams, a correlation exists between post-Contact sites and roads, railroads, and streams. Proximity to known pre- or post-Contact archaeological sites are also a potential factor in determining archaeological sensitivity. Based on this, these factors were used to create the archaeological sensitivity areas modeled in Figures 6-1 and 6-2.

High pre-Contact sensitivity areas are designated as:

- areas within 50 m (164 ft) of potential water sources, including active and seasonal stream and wetlands,
- with well-drained soils,
- with slopes of less than 8 percent,
- or within 50 m (164 ft) of a previously identified pre-Contact archaeological resource.

Low pre-Contact sensitivity probability areas are designated as:

- areas greater than 50 m (984 ft) from a water source,
- with poorly drained soils,
- with slopes of greater than 8 percent,
- and evidence of significant historical or modern disturbance areas.

High post-Contact sensitivity areas are designated as areas:

- within 200 m (656 ft) of a road or railroad or navigable stream,
- with slopes of less than 8 percent,
- or within 50 m (164 ft) of a previously identified post-Contact archaeological resource, structure, historical scatter.

Low post-Contact sensitivity areas are designated as areas:

- greater than 200 m (656 ft) from a water source or transportation route,
- with poorly drained soils,
- with slopes of greater than 8 percent,
- and evidence of significant modern disturbance.

Areas labeled as no sensitivity are those within delineated wetlands and contain standing groundwater.

Based on the combined environmental and background literature data, the Project area is considered moderately to well suited for the identification or preservation of archaeological sites. The Project area is located on a relatively flat and well-drained landscape, formed by glacial activity, at the top of a slight slope that runs east towards the Passamaquoddy Bay. Typically, uplands away from large water sources only yield evidence of short-term occupation by pre-Contact period Native American peoples regionally; the wetlands and streams may have attracted people to the Project area during the pre-Contact period, if only for short-term occupations. Post-Contact occupation of the region mainly follows major transportation routes, of which Passamaquoddy Bay is the closest. Historical map documents presented in Section 4 indicate that it is unlikely that historical occupations occurred in the Project area before Shore Road was established, sometime in the early to mid-nineteenth century. No documentary evidence was found of any historical activities occurring in the Project area beyond those relating to a nineteenth to twentieth century agricultural occupation of the land. Of some small note is the fact that one of the historical occupations was used by the Town of Perry as a Town Farm to house and care for poor or disabled town residents.

Gray & Pape recommends consultation with MHPC regarding the level of additional work, if needed. Gray & Pape's recommendations include additional reconnaissance survey with minimal shovel testing to identify the soils present within the Project area and to aid in better classifying the high- and low-sensitivity areas within the Project area. Depending on the results of the of the additional reconnaissance survey, additional archaeological shovel testing may be recommended.

A list of potential stakeholders is identified, who will be consulted regarding the property acquisition and potential development, is presented in Section 4.1.

7.0 REFERENCES CITED

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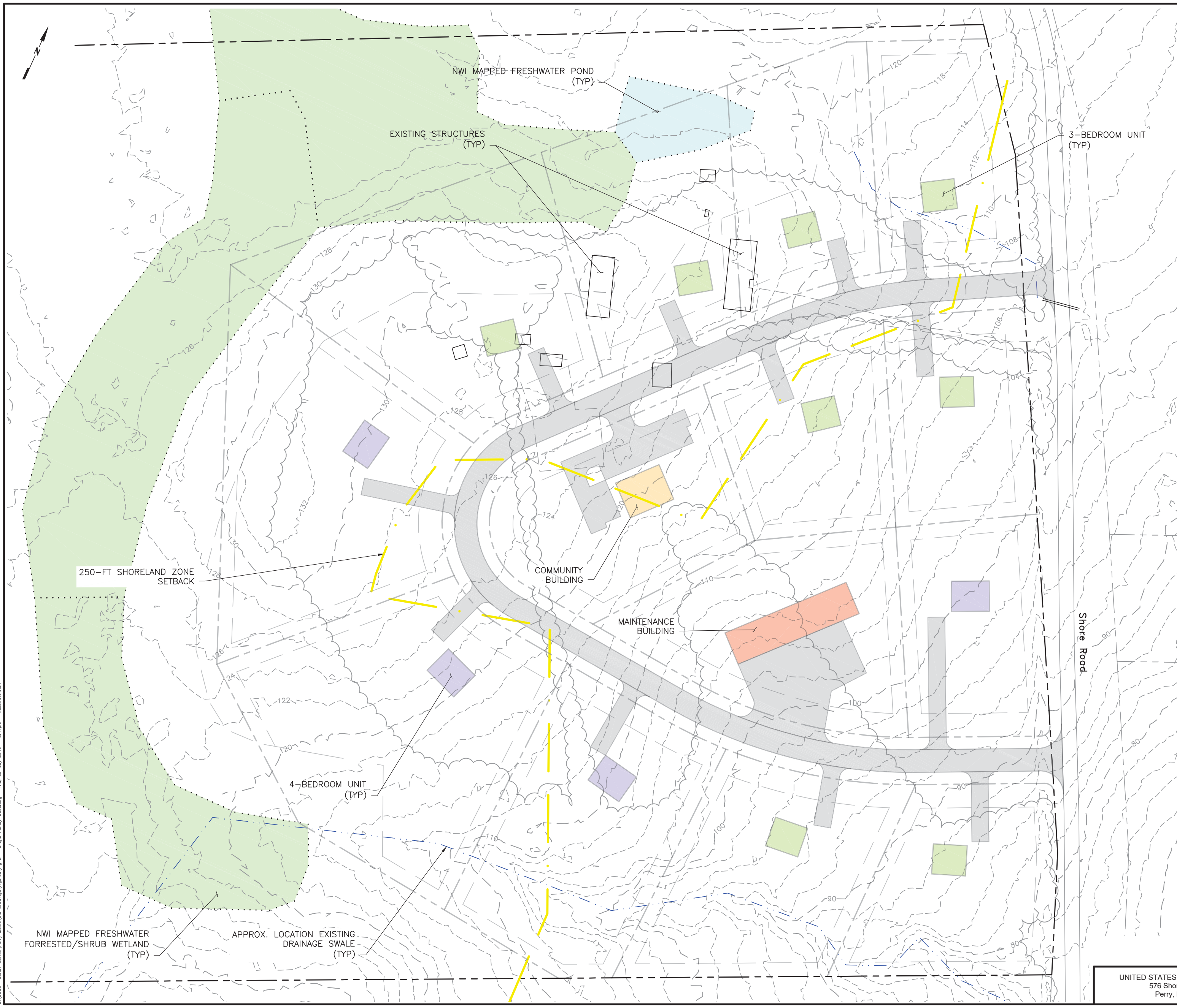
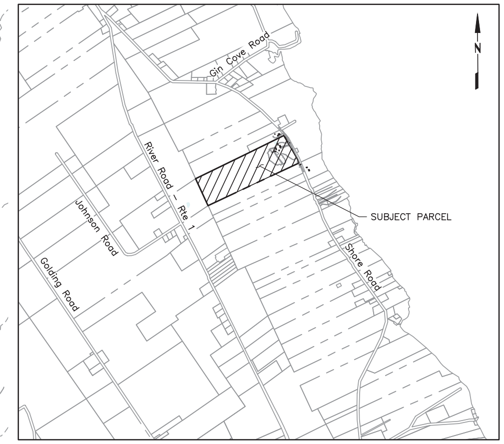
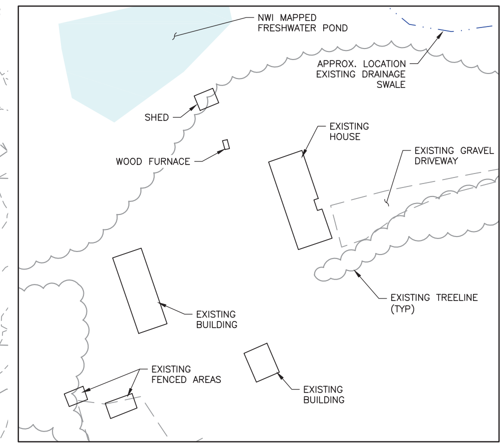
APPENDIX A: CURRENT CONCEPTUAL PLANS





VICINITY MAP



EXISTING BUILDINGS

NOTES:

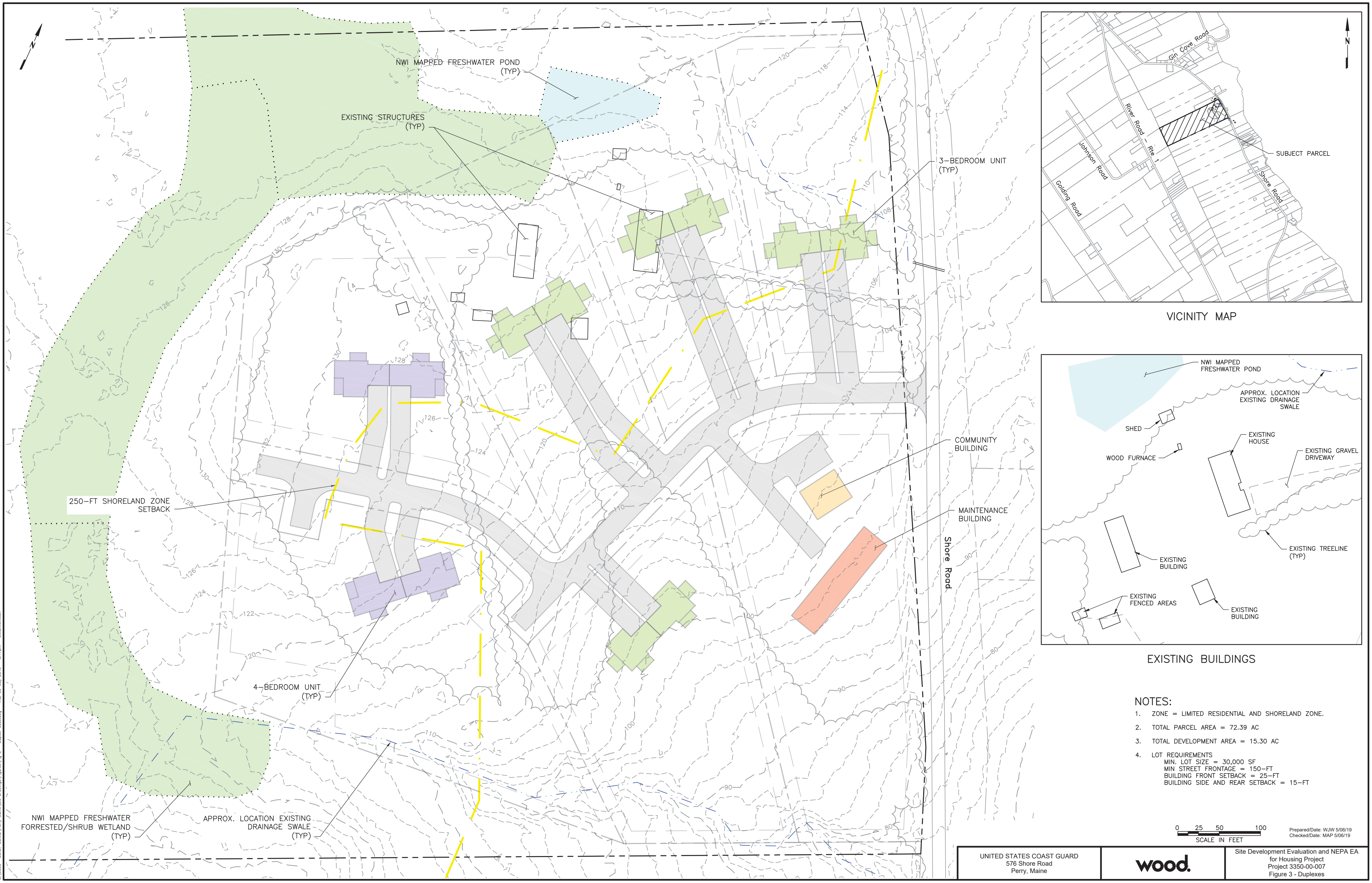
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
4. LOT REQUIREMENTS
   - MIN. LOT SIZE = 30,000 SF
   - MIN STREET FRONTAGE = 150-FT
   - BUILDING FRONT SETBACK = 25-FT
   - BUILDING SIDE AND REAR SETBACK = 15-FT

0 25 50 100
SCALE IN FEET

Prepared/Date: WJW 5/06/19
Checked/Date: MAP 5/06/19

UNITED STATES COAST GUARD 576 Shore Road Perry, Maine	wood.	Site Development Evaluation and NEPA EA for Housing Project Project 3350-00-007 Figure 2 - Single Family

S:\USCG- COAST GUARD\Perry Maine\8.0 Drawings\Figures\Fig 2 - Single Family-50sc.dwg Thu, 09 May 2019 - 3:44pm william.whitten


NWI MAPPED FRESHWATER POND (TYP)
EXISTING STRUCTURES (TYP)
3-BEDROOM UNIT (TYP)
COMMUNITY BUILDING
MAINTENANCE BUILDING
Shore Road
250-FT SHORELAND ZONE SETBACK
4-BEDROOM UNIT (TYP)
NWI MAPPED FRESHWATER FORRESTED/SHRUB WETLAND (TYP)
APPROX. LOCATION EXISTING DRAINAGE SWALE (TYP)
Gin Cove Road
River Road - Rte 1
Johnson Road
Golding Road
Shore Road
SUBJECT PARCEL
VICINITY MAP
NWI MAPPED FRESHWATER POND
APPROX. LOCATION EXISTING DRAINAGE SWALE
SHED
WOOD FURNACE
EXISTING HOUSE
EXISTING GRAVEL DRIVEWAY
EXISTING TREELINE (TYP)
EXISTING BUILDING
EXISTING FENCED AREAS
EXISTING BUILDING
EXISTING BUILDINGS
NOTES:
1. ZONE = LIMITED RESIDENTIAL AND SHORELAND ZONE.
2. TOTAL PARCEL AREA = 72.39 AC
3. TOTAL DEVELOPMENT AREA = 15.30 AC
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MIN. LOT SIZE = 30,000 SF
MIN STREET FRONTAGE = 150-FT
BUILDING FRONT SETBACK = 25-FT
BUILDING SIDE AND REAR SETBACK = 15-FT
0 25 50 100
SCALE IN FEET
Prepared/Date: WJW 5/06/19
Checked/Date: MAP 5/06/19
UNITED STATES COAST GUARD
576 Shore Road
Perry, Maine
wood.
Site Development Evaluation and NEPA EA
for Housing Project
Project 3350-00-007
Figure 3 - Duplexes

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U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431
Phone: 757-852-3404
Fax: 757-852-3495

11000

JUL 1 9 2019

RECEIVED
JUL 23 2019
By 1028-19

Kirk Mohney
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333

Greetings Mr. Mohney,

In compliance with Section 106 of the National Historic Preservation Act (NHPA), as amended, the U.S. Coast Guard (USCG) Facilities Design and Construction Center (FDCC) requests to initiate consultation with your office for a proposed action to construct twelve residential housing units and supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG Station Eastport. The housing will be located on a parcel of land in the Town of Perry, Maine.

The enclosure provides a Cultural Resources Assessment Report that was completed in June 2019. The property is a 76-acre tract located at 576 Shore Road, where construction is only to take place within the easternmost 7-acre area. All structures located on this property were built within the last 50 years and there are no known unique features, architecture, or any special historical events. The consultant did discuss the possibility of an old homestead and possibly historical town farm located within the property dating to the mid-nineteenth century. The consultant also identified the potential sensitivity for pre-Contact deposits within the property. Based on the Cultural Resources Assessment report, the USCG is requesting an opinion from your office on whether an additional level of archaeological effort should be considered or may be required.

The USCG will consult with the federally recognized Native American tribal groups and bands with interests in Maine. We have identified.the Penobscot Indian Nation, the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, and the Passamaquoddy Tribe of Indians. Please inform us of any other federal tribes or local groups that you believe should be contacted.

We look forward to working with your office and receiving your comments on the Cultural Resource Assessment and property findings at 576 Shore Road. If you have any questions, please contact Mr. Richard Hylton at (757) 852-3404 or rick.d.hylton@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Cultural Resources Assessment – 576 Shore Road

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney — 8/6/19

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

Date

MHPC # 1028-19

U.S. Department of
Homeland Security

**United States
Coast Guard**

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431
Phone: 757-852-3404
Fax: 757-852-3495

11000
JUL 1 9 2019

Houlton Band of Maliseet Indians
Ms. Sharri Venno, Director of Environmental Planning
88 Bell Road
Littleton, Maine 04730

Greetings Ms. Venno,

In compliance with Section 106 of the National Historic Preservation Act, as amended, the U.S. Coast Guard (USCG) Facilities Design and Construction Center is initiating consultation with your Tribe for a proposed project to construct twelve residential housing units and supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG Station Eastport. The housing will be located on a single parcel of land in the Town of Perry, Maine.

The enclosure provides the Cultural Resources Assessment Report that was completed in June 2019. The property is a 76-acre tract located at 576 Shore Road, where construction is only to take place within the easternmost 7-acre area. All structures located on this property were built within the last 50 years and there are no known unique features, architecture, or any special historical events. The consultant did discuss the possibility of an old homestead and possibly historical town farm located within the property dating to the mid-nineteenth century. The consultant also identified the potential sensitivity for pre-Contact deposits within the property. Should any historical artifacts or human remains be discovered during construction activities, all work will be stopped until additional consultation with you and the Maine State Historic Preservation Office is accomplished and the appropriate actions are determined.

If you have any questions or concerns or further information is required, please contact Mr. Richard Hylton, at (757) 852-3404 or by e-mail at rick.d.hylton@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Cultural Resources Assessment – 576 Shore Road

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431
Phone: 757-852-3404
Fax: 757-852-3495

11000
JUL 1 9 2019

Passamaquoddy Tribe of Indians
Mr. Donald Soctomah, Tribal Historical Preservation Officer
Indian Township reservation and Pleasant Point Reservation
P.O. Box 301
Princeton, Maine 04668

Greetings Mr. Soctomah,

In compliance with Section 106 of the National Historic Preservation Act, as amended, the U.S. Coast Guard (USCG) Facilities Design and Construction Center is initiating consultation with your Tribe for a proposed project to construct twelve residential housing units and supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG Station Eastport. The housing will be located on a single parcel of land in the Town of Perry, Maine.

The enclosure provides the Cultural Resources Assessment Report that was completed in June 2019. The property is a 76-acre tract located at 576 Shore Road, where construction is only to take place within the easternmost 7-acre area. All structures located on this property were built within the last 50 years and there are no known unique features, architecture, or any special historical events. The consultant did discuss the possibility of an old homestead and possibly historical town farm located within the property dating to the mid-nineteenth century. The consultant also identified the potential sensitivity for pre-Contact deposits within the property. Should any historical artifacts or human remains be discovered during construction activities, all work will be stopped until additional consultation with you and the Maine State Historic Preservation Office is accomplished and the appropriate actions are determined.

If you have any questions or concerns or further information is required, please contact Mr. Richard Hylton, at (757) 852-3404 or by e-mail at rick.d.hylton@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Cultural Resources Assessment – 576 Shore Road

U.S. Department of
Homeland Security

**United States
Coast Guard**

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431
Phone: 757-852-3404
Fax: 757-852-3495

11000
JUL 1 9 2019

Penobscot Nation
Mr. Christopher Sockalexis, Tribal Historical Preservation Officer
12 Wabanaki Way
Indian Island, Maine 04468

Greetings Mr. Sockalexis,

In compliance with Section 106 of the National Historic Preservation Act, as amended, the U.S. Coast Guard (USCG) Facilities Design and Construction Center is initiating consultation with your Tribe for a proposed project to construct twelve residential housing units and supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG Station Eastport. The housing will be located on a single parcel of land in the Town of Perry, Maine.

The enclosure provides the Cultural Resources Assessment Report that was completed in June 2019. The property is a 76-acre tract located at 576 Shore Road, where construction is only to take place within the easternmost 7-acre area. All structures located on this property were built within the last 50 years and there are no known unique features, architecture, or any special historical events. The consultant did discuss the possibility of an old homestead and possibly historical town farm located within the property dating to the mid-nineteenth century. The consultant also identified the potential sensitivity for pre-Contact deposits within the property. Should any historical artifacts or human remains be discovered during construction activities, all work will be stopped until additional consultation with you and the Maine State Historic Preservation Office is accomplished and the appropriate actions are determined.

If you have any questions or concerns or further information is required, please contact Mr. Richard Hylton, at (757) 852-3404 or by e-mail at rick.d.hylton@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Cultural Resources Assessment – 576 Shore Road

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

5505 Robin Hood Road, Suite K
Norfolk, VA 23513-2431
Phone: 757-852-3404
Fax: 757-852-3495

11000
JUL 1 9 2019

Aroostook Band of Micmacs
Ms. Jennifer Pictou, Tribal Historical Preservation Officer
7 Northern Road
Presque Isle, Maine 04769

Greetings Ms. Pictou,

In compliance with Section 106 of the National Historic Preservation Act, as amended, the U.S. Coast Guard (USCG) Facilities Design and Construction Center is initiating consultation with your Tribe for a proposed project to construct twelve residential housing units and supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG Station Eastport. The housing will be located on a single parcel of land in the Town of Perry, Maine.

The enclosure provides the Cultural Resources Assessment Report that was completed in June 2019. The property is a 76-acre tract located at 576 Shore Road, where construction is only to take place within the easternmost 7-acre area. All structures located on this property were built within the last 50 years and there are no known unique features, architecture, or any special historical events. The consultant did discuss the possibility of an old homestead and possibly historical town farm located within the property dating to the mid-nineteenth century. The consultant also identified the potential sensitivity for pre-Contact deposits within the property. Should any historical artifacts or human remains be discovered during construction activities, all work will be stopped until additional consultation with you and the Maine State Historic Preservation Office is accomplished and the appropriate actions are determined.

If you have any questions or concerns or further information is required, please contact Mr. Richard Hylton, at (757) 852-3404 or by e-mail at rick.d.hylton@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Cultural Resources Assessment – 576 Shore Road

From: Hylton, Rick D CIV
Sent: Thursday, July 25, 2019 10:44 AM
To: 'Sue Young' <ogs1@maliseets.com>
Subject: RE: [Non-DoD Source] USCG Station Eastport

Good Morning Ms. Young;

Thank you for your quick/timely response! We will add your email information provided below to our ongoing NEPA Environmental Assessment, which becomes part of our project. As always, the U.S. Coast Guard will stop work should we encounter human remains or any other potentially significant culture artifacts until a suitable plan can be worked out with the Maine SHPO and the 4 identified THPOs (to include - Houlton Band of Maliseet Indians) that may have an interest in this project.

I currently estimate that construction at this project will not start until late spring/early summer of 2020. Please feel free to contact me if you have any questions, concerns, or require additional information.

Again, thank you for your assistance with this critical U.S. Coast Guard project.

Rick Hylton

Richard D. Hylton, P.E.
Environmental Engineer
U.S. Coast Guard
Facilities Design and Construction Center (FDCC)
5505 Robin Hood Road, Suite K
Norfolk, VA 23513

(757) 852 – 3404
rick.d.hylton@uscg.mil

From: Sue Young <ogs1@maliseets.com>
Sent: Thursday, July 25, 2019 10:15 AM
To: Hylton, Rick D CIV <Rick.D.Hylton@uscg.mil>
Subject: [Non-DoD Source] USCG Station Eastport

Mr. Hylton,

We do not have an immediate concern with your project or project site, and do not currently have the resources to fully investigate same. Should any human remains, archaelogical properties or other items of historical importance be unearthed while working on this project, we recommend that you stop your project and report your findings to the appropriate authorities including the Houlton Band of Maliseet Indians.

Please submit all future requests/permit applications to my attention via fax or email to the number or email address below. Thank you.

<><><><><><><><><><>

Susan Young

Tribal Historic Preservation Officer
Natural Resources Director
Houlton Band of Maliseet Indians
88 Bell Road
Littleton, ME 04730
207-532-4273 ext. 202
fax 207-532-6883

ogs1@maliseets.com
www.maliseets.com

Tribal Historic Preservation Office

Passamaquoddy Tribe
PO Box 159 Princeton, Me. 04668
207-214-4051

December 12, 2019

Gray & Pape

The Plant
60 Valley Street, Suite 103
Providence, Rhode Island 02909

Kimberly M. Smith, MA, RPA
Senior Principal Investigaton

US Coast Guard

Rick Hylton
Facilities design & Construction Center
5505 Robin Hood Road
Norfolk, VA

Re: Section 106 Review Perry – USCG Housing Project 576 Shore Road (Eastport Housing Project)

Dear Kimberly & Rick;

The Passamaquoddy THPO has reviewed the following application regarding the historic properties and significant religious and cultural properties in accordance with NHPA, NEPA, AIRFA, NAGPRA, ARPA, Executive Order 13007 Indian Sacred Sites, Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, and Executive Order 12898 Environmental Justice.

On the Project listed above the Passamaquoddy Tribal Historic Preservation Office have several concerns.

1). Has the model used for determining archeological sites locations around the Passamaquoddy Bay been updated? I do not see reference to the new predictive model for this site.

2). We would like to see the archaic ocean levels as the changes in ocean levels changes the shoreline and habitation potentials.

3). Has outreach to Passamaquoddy Tribal history and community concerns in this area been accessed?

3). Is this a Federal project? Has the Coast Guard reached out to the Tribe in the Government to Government Relationship as other Federal agencies have?

Sincerely;

Donald Soctomah
Soctomah@gmail.com
THPO
Passamaquoddy Tribe

U.S. Department of
Homeland Security

**United States
Coast Guard**

Commanding Officer
United States Coast Guard
Facilities Design & Construction Center

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JAN 2 8 2020

Donald Soctomah
Passamaquoddy Tribe of Indians
Tribal Historic Preservation Office
PO Box 159
Princeton, ME 04668

Greetings Mr. Soctomah,

Thank you for the written comments, dated December 12, 2019, which you provided in response to our initial consultation with your tribe for our U.S. Coast Guard (USCG) Station (STA) Eastport housing project. The USCG proposes to construct four to eight residential housing units and the supporting infrastructure (roads, sidewalks, utilities, maintenance support structures) for our personnel assigned to USCG STA Eastport. The housing project would be located on a 76 acre parcel of land in the town of Perry, Maine.

Enclosed, please find our responses to your comments about the Cultural Resources Assessment Report, which we initially sent you on July 19, 2019, as part of our initial consultation. If you have additional questions or concerns regarding this project, please contact me at (757) 852-3400 or email at John.F.Barresi@uscg.mil.

Sincerely,

J. F. BARRESI
Captain, U. S. Coast Guard

Enclosure: (1) Additional Information on Cultural Resources Assessment – 576 Shore Road

Passamaquoddy Tribal Historic Preservation Office Questions/Concerns and USCG Additional Information

Passamaquoddy Tribe, Concern #1 - Has the model used for determining archeological sites locations around the Passamaquoddy Bay been updated? I do not see reference to the new predictive model for this site.

USCG Additional Discussion - The model utilized by our cultural resource consultant is an accepted regional model that provided the site area as potentially sensitive. The Maine SHPO utilizes a more refined model as identified in their "Predictive Models for Maine Prehistoric Sites" dated 2016 (Speiss and Smith). The SHPO office considered this site not sensitive for archeological deposits, and recommended no additional work be required.

Our consultant, Gray & Pape, utilized a model often used throughout New England. This model determines the likelihood of encountering Pre-Contact sites on the basis of an environmental model that uses geological, soil, and climatic data, known site locations throughout New England, and expected locational behavior.

Studies of foraging peoples in many parts of the world have shown that, at a general level, populations tend to adopt a least-effort strategy in the procurement of resources. The assumption is that they tend to choose the most energy-efficient means of procuring the maximum resource yield, without sacrificing group wellbeing. One of many ways to reduce energy expenditure is to minimize the distance between the place where a given resource is available and the locale where it is to be consumed. Consequently, one may predict that sites, located with resource proximity in mind, would be situated in those areas that are within the range of acceptability for human comfort and are also close to the resource being exploited.

The most important microclimatic factors adversely affecting human physical comfort in New England are excessive moisture and cold temperature. Dry, well-drained, and level areas with the warmest available exposure would, therefore, meet the major criteria in the Native American site selection process. One can predict that level areas, with well-drained soils, and level to slightly-sloping areas, with a southern exposure, would contain the highest Native American site density. Well-drained, workable soils were also important site selection factors for both Native American and later horticulturists. Perhaps the most critical resource to be considered, regardless of site function, is proximity to water. In inland situations, sites are likely to be located near a source of fresh water, such as a spring, a lake, or a stream. Lakes and streams also provide access to fish, waterfowl, and other game.

Similar to the correlation of pre-Contact sites to streams, a correlation exists between post-Contact sites and roads, railroads, and streams. Proximity to known pre- or post-Contact archaeological sites are also a potential factor in determining archaeological sensitivity. Within the context of this methodology; the following framework is assumed:

High pre-Contact sensitivity areas are designated as:

- *areas within 50 m (164 ft) of potential water sources, including active and seasonal stream and wetlands,*
- *with well-drained soils,*
- *with slopes of less than 8 percent,*
- *or within 50 m (164 ft) of a previously identified pre-Contact archaeological resource.*

Low pre-Contact sensitivity probability areas are designated as:

- *areas greater than 50 m (984 ft) from a water source,*
- *with poorly drained soils,*
- *with slopes of greater than 8 percent,*
- *and evidence of significant historical or modern disturbance areas.*

High post-Contact sensitivity areas are designated as areas:

- *within 200 m (656 ft) of a road or railroad or navigable stream,*
- *with slopes of less than 8 percent,*
- *or within 50 m (164 ft) of a previously identified post-Contact archaeological resource, structure, historical scatter.*

Low post-Contact sensitivity areas are designated as areas:

- *greater than 200 m (656 ft) from a water source or transportation route,*
- *with poorly drained soils,*
- *with slopes of greater than 8 percent,*
- *and evidence of significant modern disturbance.*

The results of the Cultural Survey indicated a low archeological sensitivity probability threshold for encountering Pre-Contact archaeological sites given the Project area's proximity to canoe navigable waterways or within well-drained, sandy soils adjacent to small water bodies (e.g. first or second order streams or kettleponds). The project area was adjacent to none of these, thereby leaving Maine SHPO to state the low sensitivity of containing archaeological sites of the Project area.

The USCG initiated written consultation on July 19, 2019, with the Maine SHPO, the Aroostok Band of Micmac, the Houlton Band of Maliseet Indians, the Penobscot Nation, and the Passamaquoddy Tribe. The Passamaquoddy Tribe is the only party consulted with that has subsequently identified a concern with the model utilized.

THE USCG is committed to correctly handling any potential cultural resources discovered/encountered during ground disturbing activities. As part of our construction contract specification, our project team will develop a project specific Unanticipated Discovery Plan to address potential cultural resources should they be encountered. If you concur with this approach or have other ideas for consideration please let us know.

Passamaquoddy Tribe, Concern #2 - We would like to see the archaic ocean levels as the changes in ocean levels changes the shoreline and habitation potentials.

USCG Additional Discussion - Sea level rise charts and studies would show that a Project area was still located within an upland setting over 450 m from the shoreline throughout much of prehistory, though it may show differences in the archaic and Paleo time period shorelines due to isostatic rebound. To ascertain the archaic ocean levels and the changes in shoreline and habitation potentials would be a significant study and still not alter the landforms overall position away from navigable waterways in prehistory.

The use of an Unanticipated Discovery Plan as discussed in USCG Response to Concern No. 1 represents an additional level of insurance that any unexpected cultural resources will be handled appropriately.

Passamaquoddy Tribe, Concern #3 - Has outreach to Passamaquoddy Tribal history and community concerns in this area been accessed?

The USCG initiated consultation with the SHPO, the Passamaquoddy Tribe, and three other Tribes on July 19, 2019. Unfortunately, the Passamaquoddy letter was apparently not received by your office (See Concern No. 4 below for additional information). If you have any information, questions, or concerns we should be aware of, please let us know and we will work to resolve these items.

As part of our Cultural resource Study, Gray & Pape consulted with the MHPC for previously identified archaeological site information as well as above-ground resources history in the area. A Gray & Pape archaeologist conducted a brief reconnaissance of the Project area and conducted local historical research in nearby Perry and Calais, ME. The findings presented therein, were to be the basis for consultation with the tribes and further consultation with MHPC. Subsequently, letters with the Preliminary Cultural Resources Study Report were mailed to each of the Tribal Historic Preservation Offices and MHPC for comment. These letters were, as stated above, mailed on July 19, 2019.

In late August 2019 the USCG published a draft final NEPA Environmental Assessment that was advertised locally and available for public review and comment. On November 13, 2019, we held a public Town Hall meeting at the elementary school in Perry, ME.

Passamaquoddy Tribe, Concern #4 - Is this a Federal project? Has the Coast Guard reached out to the Tribe in the Government to Government Relationship as other Federal agencies have?

USCG Additional Discussion – Yes, this is a federal project. The Commanding Officer for the U.S. Coast Guard's Facility Design and Construction Center, Captain John F. Barresi, mailed via the U.S. Postal Service (USPS) an initial consultation package to the Passamaquoddy Tribe on July 19, 2019. On the same date we also sent consultation packages to three other tribes. We typically utilize overnight FEDEX delivery, however, FEDEX did not have a valid mailing *address for the Passamaquoddy Tribe, so we utilized the USPS and the mailing address (PO Box 159, Princeton, ME) for the Passamaquoddy letter delivery.*

In September 2019, the USCG grew concerned that we had not heard back from all THPO consulting parties. We requested our cultural/historical consultant, Gray and Pape, send an electronic copy of the initial consultation package. This package was emailed on September 30, 2019. It was meant to be a friendly reminder that we still would like to receive their comments, concerns, and/or concurrence. In hindsight, we should have sent these emails directly out of our USCG office. It was not our intent to communicate incorrectly, but rather, to make sure all potentially impacted tribes that wanted to consult and/or raise concerns was afforded this opportunity. The email you received did contain the electronic file (scanned package) of the original documents mailed on July 19, 2019.

All future correspondence whether formal or informal will come directly from the USCG FDCC Commanding Officer.