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ALAMEDA POINT
SSIC NO. 5090.3

SURVEY REPORT

# ALAMEDA POINT
# SKEET RANGE (IR SITE 29)
# EVALUATION

*Prepared for*

SOUTHWEST DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
1220 Pacific Highway
San Diego, CA 92132-5190

CONTRACT NO. GS-10F-0275K
PROJECT NO. G477703

*Prepared by*

BATTELLE
397 Washington Street
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December 14, 2001

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December 14, 2001

Mr. Michael Pound
Southwest Division, NAVFACENGCOM
1220 Pacific Highway
San Diego, CA 92132

Dear Michael:

**Alameda Point Skeet Range Evaluation Survey Report,**
**ALAMEDA POINT, CA**

Enclosed please find (1) copy of the *Alameda Point Skeet Range Evaluation Survey Report, Alameda Point, California* prepared for the Navy by Battelle. This report incorporates comments received by the Navy and details the collection and processing of the Skeet Range core and grab samples in accordance with the Skeet Range Evaluation Work Plan, dated November 1, 2001.

If you have questions, please contact Virginia Lau by phone at (510) 562-4086, or by e-mail at lauv@battelle.org. Don Gunster can also answer questions, and can be contacted by phone at (781) 952-5378, by cell phone at (617) 435-8444, by fax at (781) 952-5468, and by e-mail at gunster@battelle.org.

Sincerely,

Virginia Lau
Project Manager

Donald Gunster
Sediment Work Group
Program Manager

VL/DG

cc: Jim Leather, SPAWAR
Michael Bloom, SWDIV
Michael McClelland, SWDIV

Enclosures

# SURVEY REPORT

# SKEET RANGE (IR SITE 29) EVALUATION
# ALAMEDA POINT, CALIFORNIA

*Prepared for:*

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**NAVAL FACILITIES ENGINEERING COMMAND**
**1220 Pacific Highway**
**San Diego, CA 92132**

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**December 14, 2001**

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# 1.0 INTRODUCTION

This report documents the results of the field sampling program conducted on November 5-14, 2001 at the Alameda Point Skeet Range (Installation Restoration [IR] Site 29) at Alameda Point, California. The primary purpose of this evaluation was to further characterize the spatial extent of lead shot distribution, to determine the source of sediment polynuclear aromatic hydrocarbon (PAH) contamination, and to develop sediment deposition rates at the Skeet Range. The data collected during this investigation will be included in a Remedial Investigation (RI) that will characterize the nature and extent of contaminants at the Skeet Range and evaluate potential risks to upper trophic level species associated with sediment exposures. The field sampling approach and sampling design are described in detail in the *Skeet Range Evaluation Work Plan* (Battelle *et al.*, 2001).

The Skeet Range sampling was conducted on the 24-ft R/V Sea Dog, a barge owned and operated by TEG Oceanographic Services of Santa Cruz. This vessel was moored at a boathouse in the southeast corner of Seaplane Lagoon. Processing of the samples was conducted at the boathouse. The sampling equipment, consisting of a 0.1 $m^2$ van Veen Grab Sampler and gravity corers, was provided by TEG. The core liners were provided by Battelle. Field survey personnel are listed in Table 1.

**Table 1. Survey Personnel for Skeet Range Evaluation**

| **Activity:**<br>**Date:**<br>**Location:** | **Sediment Sampling**<br>**November 5-14, 2001**<br>**Alameda Point Skeet Range** |
|---|---|
| **Battelle Staff** | |
| Project Manager | Virginia Lau |
| Field Team Leader | Nancy Kohn |
| Field Staff | Chris Gagnon |
| | Liz Vonckx |
| | Kate Beardsley |
| HSO/Radiation Safety Officer | Leonard Davis |
| **TEG Staff** | |
| Boat Operator | Mark Mertz |
| Boat Staff | Otto Elliott |
| | Annick Tardif |

# 2.0 SAMPLING

Details on the survey/sampling methods and rationale are presented in the *Skeet Range Evaluation Work Plan* (Battelle *et al.*, 2001). The following sections describe the sample collection and processing performed in the field.

## 2.1 Sample Stations

Sampling stations were located in a grid sampling pattern over the 20-acre fall zone of the Skeet Range. A finer grid design was developed for the region in which the highest density of lead shot was found in previous studies. A map of the grid pattern and sampling stations is provided in Figure 1.

Navigation to planned station locations was accomplished using differentially corrected Global Positioning Systems (DGPS). The accuracy of the instrument (Magnavox MX 300) was confirmed at an established benchmark (Alameda Tide Gauge) prior to field sampling. A point at the end of the southwest jetty of Seaplane Lagoon at Alameda Point was chosen as a daily checkpoint location to verify the precision of the unit. At the benchmark, the GPS unit measured within 24 m of the established coordinates. At the reference point, the GPS always measured within 5 m of the previous measurements.

Field measurements taken at each sampling station included water depth and station location coordinates at the time of sampling. Depth measurements were made to the nearest 0.1 ft using a weighted steel survey tape (lead line).

## 2.2 Sample Collection and Processing

Three methods of sediment sampling were employed at the Skeet Range: grab sampling, short core sampling, and long core sampling. Grab samples were collected to evaluate the horizontal distribution of lead shot. Both short and long core samples were collected to evaluate the vertical distribution of lead shot and PAHs. The long cores were also collected to estimate sediment deposition rates by radioisotope analysis of sediment from selected vertical segments. Grab and core sample collection is described in further detail below.

### 2.2.1 Sediment Grabs

Sediment grab samples were collected at 40 stations using a 0.1-$m^2$ van Veen grab sampler deployed through the moon pool of the R/V Sea Dog. At four stations (10% of the total), duplicate samples were collected and processed in the same manner as the original sample for field quality control. Grab sample collection information is provided in Table 2; actual sampling stations are shown on Figure 1. For each acceptable grab sample, the top 5 cm of sediment was collected using a stainless steel scoop. Because the results of lead shot and grit analysis are reported on a per volume basis and the penetration depth of each grab varied, the volume of sediment in the top 5 cm was measured to the nearest 0.1 L. The sediment was then sorted into three fractions by sieving the sample through three nested sieves, a US Standard sieve #5, which retains material greater than 4.0 mm, a US Standard sieve #10, which retains material greater than 2.0 mm, and a US Standard sieve #35, which retains material greater than 0.5 mm. Sea water pumped from the barge through a hose was gently applied to the sieve to force much of the material to the lower sieves. Once all the sediment was washed through the sieves, a qualitative assessment of the material retained in each sieve was documented in the field log. Observations regarding the type and quantity of prey species for diving birds, clay target fragments, and sediment type and condition were noted in the log book. The prey types including the phylum or order and density were described along with a qualitative estimate of the number of clay targets found. Grab sample processing data is provided in Table 3.

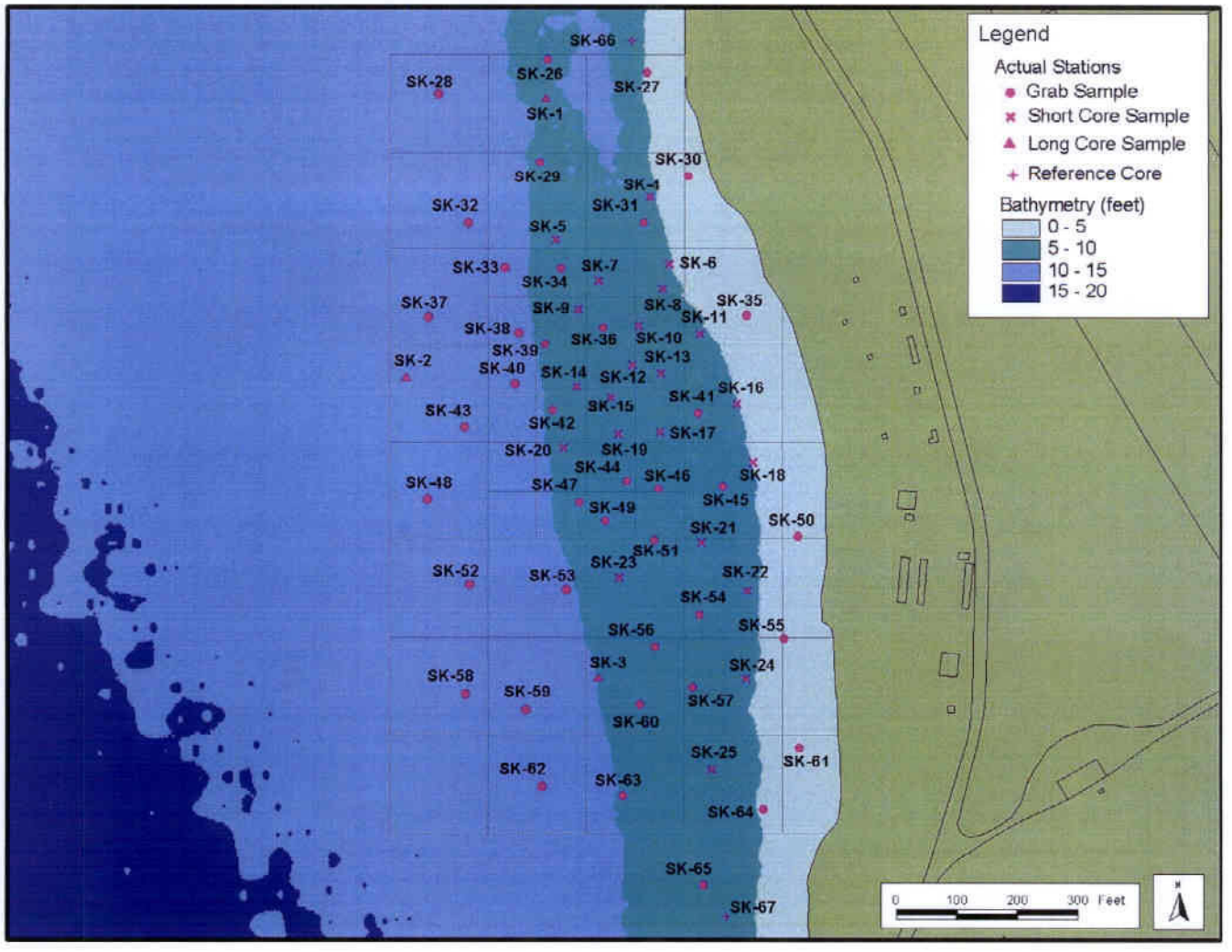


**Figure 1. Skeet Range Sample Locations.**

## Table 2. Grab Sample Coordinates.

| Station | Date Collected | Time Collected | Location (Lat Long, NAD83) | | Uncorrected Water Depth (ft) | Corrected Water Depth (-ft MLLW)* |
|---|---|---|---|---|---|---|
| | | | Latitude (N) | Longitude (W) | | |
| SK-26 | 11/10/01 | 1027 | 37° 47.7428' | 122° 19.9650' | 15.2 | 10.6 |
| SK-26 rep 2 | 11/10/01 | 1050 | 37° 47.7428' | 122° 19.9650' | 15.2 | 10.9 |
| SK-27 | 11/10/01 | 0901 | 37° 47.7399' | 122° 19.9319' | 11.0 | 4.9 |
| SK-28 | 11/10/01 | 1107 | 37° 47.7326' | 122° 20.0028' | 16.2 | 12.2 |
| SK-29 | 11/10/01 | 1137 | 37° 47.7145' | 122° 19.9674' | 13.7 | 10.3 |
| SK-30 | 11/10/01 | 1004 | 37° 47.7113' | 122° 19.9168' | 6.9 | 1.7 |
| SK-31 | 11/10/01 | 1229 | 37° 47.6985' | 122° 19.9316' | 11.4 | 8.9 |
| SK-32 | 11/10/01 | 1244 | 37° 47.6974' | 122° 19.9916' | 14.8 | 12.4 |
| SK-33 | 11/10/01 | 1255 | 37° 47.6852' | 122° 19.9781' | 14.2 | 11.9 |
| SK-34 | 11/10/01 | 1335 | 37° 47.6850' | 122° 19.9596' | 12.0 | 10.0 |
| SK-35 | 11/11/01 | 0902 | 37° 47.6731' | 122° 19.8950' | 10.1 | 3.5 |
| SK-36 | 11/10/01 | 1349 | 37° 47.6694' | 122° 19.9440' | 11.1 | 9.2 |
| SK-37 | 11/10/01 | 1310 | 37° 47.6711' | 122° 20.0045' | 14.7 | 12.6 |
| SK-38 | 11/10/01 | 1321 | 37° 47.6674' | 122° 19.9735' | 13.3 | 11.3 |
| SK-39 | 11/11/01 | 0936 | 37° 47.6641' | 122° 19.9647' | 17.8 | 11.4 |
| SK-40 | 11/11/01 | 0951 | 37° 47.6530' | 122° 19.9743' | 18.8 | 12.5 |
| SK-41 | 11/11/01 | 0916 | 37° 47.6462' | 122° 19.9111' | 15.5 | 8.9 |
| SK-42 | 11/11/01 | 1019 | 37° 47.6460' | 122° 19.9618' | 17.1 | 11.2 |
| SK-42 rep 2 | 11/11/01 | 1029 | 37° 47.6462' | 122° 19.9629' | 17.1 | 11.4 |
| SK-43 | 11/11/01 | 1006 | 37° 47.6413' | 122° 19.9914' | 19.3 | 13.2 |
| SK-44 | 11/11/01 | 1058 | 37° 47.6270' | 122° 19.0352' | 13.8 | 8.7 |
| SK-45 | 11/11/01 | 0834 | 37° 47.6260' | 122° 19.9020' | 15.6 | 9.1 |
| SK-45 rep 2 | 11/11/01 | 0843 | 37° 47.6252' | 122° 19.9006' | 15.6 | 9.0 |
| SK-46 | 11/11/01 | 1041 | 37° 47.6252' | 122° 19.9247' | 14.4 | 9.0 |
| SK-47 | 11/13/01 | 0851 | 37° 47.621' | 122° 19.951' | 15.1 | 8.8 |
| SK-48 | 11/13/01 | 1132 | 37° 47.621' | 122° 20.003' | 19.4 | 13.0 |
| SK-49 | 11/13/01 | 1117 | 37° 47.616' | 122° 19.942' | 16.0 | 9.3 |
| SK-50 | 11/11/01 | 0853 | 37° 47.6133' | 122° 19.8766' | 9.1 | 2.5 |
| SK-51 | 11/13/01 | 1208 | 37° 47.611' | 122° 19.925' | 14.6 | 9.1 |
| SK-52 | 11/13/01 | 1146 | 37° 47.598' | 122° 19.988' | 19.5 | 13.5 |
| SK-53 | 11/13/01 | 1157 | 37° 47.597' | 122° 19.955' | 16.6 | 10.8 |
| SK-54 | 11/13/01 | 1222 | 37° 47.591' | 122° 19.909' | 13.5 | 8.3 |
| SK-55 | 11/13/01 | 0914 | 37° 47.585' | 122° 19.880' | 9.2 | 2.4 |
| SK-56 | 11/13/01 | 1236 | 37° 47.582' | 122° 19.924' | 13.7 | 9.0 |
| SK-57 | 11/13/01 | 1254 | 37° 47.571' | 122° 19.911' | 12.8 | 8.4 |
| SK-58 | 11/14/01 | 0822 | 37° 47.5688' | 122° 19.9892' | 19.7 | 14.4 |
| SK-59 | 11/14/01 | 0837 | 37° 47.5643' | 122° 19.9687' | 18.8 | 13.4 |

| Station | Date Collected | Time Collected | Location (Lat Long, NAD83) | | Uncorrected Water Depth (ft) | Corrected Water Depth (-ft MLLW)* |
|---|---|---|---|---|---|---|
| | | | Latitude (N) | Longitude (W) | | |
| SK-60 | 11/14/01 | 0847 | 37° 47.5664' | 122° 19.9291' | 15.2 | 9.5 |
| SK-61 | 11/13/01 | 0936 | 37° 47.555' | 122° 19.874' | 6.8 | -0.2 |
| SK-62 | 11/14/01 | 0858 | 37° 47.5435' | 122° 19.9621' | 20.1 | 14.2 |
| SK-63 | 11/14/01 | 0906 | 37° 47.5412' | 122° 19.9340' | 16.0 | 9.8 |
| SK-64 | 11/13/01 | 0957 | 37° 47.538' | 122° 19.886' | 11.9 | 4.8 |
| SK-65 | 11/13/01 | 1049 | 37° 47.517' | 122° 19.906' | 14.3 | 7.2 |
| SK-65 rep 2 | 11/13/01 | 1056 | 37° 47.517' | 122° 19.904' | 14.3 | 7.4 |

* Water depth correction to mean lower low water (MLLW) calculated using the predicted tidal height at Alameda Station
rep: replicate sample

**Table 3. Summary of Prey Organisms and Sediment Characteristics in Grab Samples.**

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-26 | 4.1 | >4 | NA | 15 Polychaetes about 3-5 cm long, many Ampelisca and worm tubes | Brown silt to clay | |
| | | 2-4 | AAE-485-A | NA | | |
| | | 0.5-2 | AAE-486-A | NA | | |
| SK-26 rep 2 | 4.2 | >4 | NA | 5 Polychaetes of 5 cm length with narrow bodies, numerous worm tubes | Gray brown silt to clay | |
| | | 2-4 | AAE-493-A | NA | | |
| | | 0.5-2 | AAE-492-A | NA | | |
| SK-27 | 2.6 | >4 | NA | Two 3-4 cm-long Polychaetes | Brown medium to fine sand | |
| | | 2-4 | AAE-481-A | NA | | |
| | | 0.5-2 | AAE-482-A | NA | | |
| SK-28 | 3.8 | >4 | NA | Numerous Ampelisca and worm tubes | Gray brown silt to clay | |
| | | 2-4 | AAE-487-A | NA | | |
| | | 0.5-2 | AAE-488-A | NA | | |
| SK-29 | 3.9 | >4 | NA | 4 visible Polychaetes about 5 cm long, many Ampelisca and worm tubes | Gray brown silt to clay | |
| | | 2-4 | AAE-489-A | NA | | |
| | | 0.5-2 | AAE-490-A | NA | | |
| SK-30 | 2.4 | >4 | NA | No prey organisms, several pebbles, small clamshells, mussel shell fragments | Gray-brown gravel to sand with some shell hash | Several clay fragments found in >4 mm sieve, see Table 4; 7 attempts required to collect acceptable sample |
| | | 2-4 | AAE-483-A | one shrimp about 2 cm long | | |
| | | 0.5-2 | AAE-484-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-31 | 3.8 | >4 | NA | 2 visible Polychaetes about 5-10 cm long, many Ampelisca tubes, some shells and wood fragments | Gray brown silt to clay | Clay target fragment found in >4 mm sieve, see Table 7 |
| | | 2-4 | AAE-494-A | NA | | |
| | | 0.5-2 | AAE-495-A | NA | | |
| SK-32 | 4.2 | >4 | NA | 25 Polychaetes about 0-5 cm long and 3 Polychaetes from 8 to 10 cm, 2 Opistobranchs about 3-4 cm, large worm, numerous Ampelisca and worm tubes, few shell fragments | Gray brown silt to clay | Unidentified organism found in >4 mm sieve - sample not kept |
| | | 2-4 | AAE-496-A | NA | | |
| | | 0.5-2 | AAE-497-A | NA | | |
| SK-33 | 4.2 | >4 | NA | 1 Polychaetes (maldarid) about 12 cm long, 30 Polychaetes from 1 to 10 cm long, numerous Ampelisca and worm tubes, some shell fragments and small wood debris | Gray brown silt to clay | Unidentified black piece found in >4 mm sieve - sample not kept |
| | | 2-4 | AAE-501-A | NA | | |
| | | 0.5-2 | AAE-502-A | NA | | |
| SK-34 | 5.0 | >4 | NA | 4 Polychaetes, numerous worm tubes, shell fragments | Gray brown silt to clay | Large worms present at 5-10 cm depth, numerous lead shot observed during sieving |
| | | 2-4 | AAE-503-A | NA | | |
| | | 0.5-2 | AAE-504-A | NA | | |
| SK-35 | 3.4 | >4 | NA | No live organisms, few shells and pebbles | Medium brown to fine sand with shell hash | |
| | | 2-4 | AAE-511-A | NA | | |
| | | 0.5-2 | AAE-512-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-36 | 4.4 | >4 | NA | 6 Polychaetes about 2-5 cm long, 3 Opistobranch 2-3 cm length, few Ampelisca and worm tubes, shell fragments, and wood debris | Gray brown silt to clay | Approximately 10 small clay target fragments collected, see Table 4; lead shot observed during sieving |
| | | 2-4 | AAE-505-A | NA | | |
| | | 0.5-2 | AAE-506-A | NA | | |
| SK-37 | 4.5 | >4 | NA | 12 Polychaetes about 2-5 cm long, a sea quirt of 3-4 cm long, numerous worm tubes, but few worms | Gray brown silt to clay | |
| | | 2-4 | AAE-507-A | NA | | |
| | | 0.5-2 | AAE-508-A | NA | | |
| SK-38 | 4.4 | >4 | NA | 30 Polychaetes about 4-8 cm long, numerous Ampelisca and worm tubes, no visible amphipods | Gray brown silt to clay with few shells | |
| | | 2-4 | AAE-499-A | NA | | |
| | | 0.5-2 | AAE-500-A | NA | | |
| SK-39 | 5.0 | >4 | NA | 12 Polychaetes about 2-5 cm long, one Opistobranch of 2 cm length, numerous Ampelisca and worm tubes, few maldarid tubes, shells, and woody debris | Gray brown silt to clay | Large worms and maldarid polychaete tubes present at bottom of grab, lead shot observed during sieving |
| | | 2-4 | AAE-527-A | NA | | |
| | | 0.5-2 | AAE-528-A | NA | | |
| SK-40 | 5.4 | >4 | NA | No live organisms or shells, remnants of Ampelisca tubes found | Very soft gray brown silt to clay | Large worms present at bottom of grab |
| | | 2-4 | AAE-529-A | NA | | |
| | | 0.5-2 | AAE-530-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-41 | 4.8 | >4 | NA | 6 Polychaetes about 2-4 cm long, many Ampelisca and worm tubes, woody debris, blackened worm tube colony | Gray brown silt to clay | |
| | | 2-4 | AAE-513-A | NA | | |
| | | 0.5-2 | AAE-514-A | NA | | |
| SK-42 | 5.0 | >4 | NA | 5 Polychaetes from 1-3 cm long, Ampelisca tubes | Brown silt to clay | Large worms present at bottom of grab |
| | | 2-4 | AAE-515-A | NA | | |
| | | 0.5-2 | AAE-516-A | NA | | |
| SK-42 rep 2 | 4.6 | >4 | NA | 20 Polychaetes from 2-5 cm long, one Opistobranch of 2 cm length, numerous Ampelisca tubes | Gray brown silt to clay | Large worms present at bottom of grab |
| | | 2-4 | AAE-521-A | NA | | |
| | | 0.5-2 | AAE-522-A | Many Ampelisca amphipods present | | |
| SK-43 | 4.2 | >4 | NA | 20 Polychaetes and 2 Opistobranch of 2 cm length | Very soft gray brown silt to clay | |
| | | 2-4 | AAE-523-A | NA | | |
| | | 0.5-2 | AAE-524-A | NA | | |
| SK-44 | 4.4 | >4 | NA | Ampelisca and worm tubes, no visible worms, some shells and bits of wood | Gray brown silt to clay with few shell hash | Approximately 10 small clay target fragments collected, see Table 4; many lead shot observed during sieving |
| | | 2-4 | AAE-531-A | NA | | |
| | | 0.5-2 | AAE-532-A | NA | | |
| SK-45 | 4.4 | >4 | NA | 2 Polychaetes about 2-5 cm long, few Ampelisca tubes, many worm tubes, small piece of orange sponge | Gray brown silt to clay | Many lead shot observed during sieving |
| | | 2-4 | AAE-509-A | NA | | |
| | | 0.5-2 | AAE-510-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-45 rep 2 | 4.3 | >4 | NA | 1 Polychaetes about 3 cm long, few Ampelisca tubes, no large mats of tubes observed in sample as compared to main sample | Gray brown silt to clay | 2 very small target fragments observed - not kept, lead shot observed during sieving |
| | | 2-4 | AAE-519-A | NA | | |
| | | 0.5-2 | AAE-520-A | NA | | |
| SK-46 | 4.6 | >4 | NA | 15 Polychaetes from 1-6 cm long, some Ampelisca tubes, numerous shells and wood debris | Gray brown silt to clay | Debris found at bottom of grab, numerous lead shot observed during sieving |
| | | 2-4 | AAE-525-A | NA | | |
| | | 0.5-2 | AAE-526-A | NA | | |
| SK-47 | 4.4 | >4 | NA | 9 Polychaetes from 2-5 cm long, few Ampelisca and worm tubes, one maldarid tube, and few shells | Gray brown silt to clay | |
| | | 2-4 | AAE-533-A | NA | | |
| | | 0.5-2 | AAE-534-A | NA | | |
| SK-48 | 3.4 | >4 | NA | One large Polychaete 15-20 cm long, 3 small Polychaetes of 3-4 cm length, 2 Opistobranch of 1.5-3 cm long, two 2-cm long bivalve mussels, dense Ampelisca tubes and few worm tubes | Gray brown silt to clay | |
| | | 2-4 | AAE-545-A | NA | | |
| | | 0.5-2 | AAE-546-A | NA | | |
| SK-49 | 4.9 | >4 | NA | No live organisms, few worm tubes, many shell fragments, one elongated bivalve about 4 cm long and 1.5 cm wide, one brown shell | Gray brown silt to clay | Lots of lead shot observed during sieving |
| | | 2-4 | AAE-543-A | NA | | |
| | | 0.5-2 | AAE-544-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-50 | 2.0 | >4 | NA | No live organisms, few shells, small bits of red algae | Medium brown to fine sand with shell hash | 2 very small target fragments observed - sample not kept |
| | | 2-4 | AAE-517-A | NA | | |
| | | 0.5-2 | AAE-518-A | NA | | |
| | | 0.5-2 | AAE-536-A | NA | | |
| SK-51 | 4.4 | >4 | NA | 2 Polychaetes about 3-4 cm long, few shell fragments and worm tubes | Gray brown silt to clay | Lead shot observed during sieving |
| | | 2-4 | AAE-555-A | Shell fragments and many Ampelisca tubes | | |
| | | 0.5-2 | AAE-556-A | NA | | |
| SK-52 | 4.0 | >4 | NA | 5 Polychaete 3-5 cm long, 4 to 5 Opistobranchs of 2-3 cm length, numerous Ampelisca tubes, few worm tubes, few shells | Brown silt to clay, clayey-silt material in top 5 cm | |
| | | 2-4 | AAE-547-A | NA | | |
| | | 0.5-2 | AAE-548-A | NA | | |
| SK-53 | 5.1 | >4 | NA | No live organisms, few worm tubes and shell fragments | Gray brown silt to clay | Lead shot observed during sieving |
| | | 2-4 | AAE-554-A | Few worms and numerous Ampelisca observed | | |
| | | 0.5-2 | AAE-553-A | NA | | |
| SK-54 | 5.0 | >4 | NA | One clam, worm tubes, shell fragments, no visible worm present | Gray brown silt to clay | Lead shot observed during sieving |
| | | 2-4 | AAE-557-A | NA | | |
| | | 0.5-2 | AAE-558-A | NA | | |
| SK-55 | 3.0 | >4 | NA | No live organisms, few shells, one piece of stringy red algae | Brown fine to medium sand | |
| | | 2-4 | AAE-535-A | One Polychaete of 2 cm length | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| SK-56 | 3.8 | >4 | NA | 2 Polychaetes of 3-4 cm length, many ampelisca tubes and shell fragments | Gray brown silt to clay | |
| | | 2-4 | AAE-551-A | NA | | |
| | | 0.5-2 | AAE-552-A | NA | | |
| SK-57 | 4.4 | >4 | NA | 5 Polychaetes of 2-4 cm length, shell fragments, worm tubes | Gray brown silt to clay | |
| | | 2-4 | AAE-559-A | Many Ampelisca tubes | | |
| | | 0.5-2 | AAE-560-A | Many Ampelisca tubes | | |
| SK-58 | 4.0 | >4 | NA | 5 Polychaetes of 2-4 cm length, one Opistobranch 2 cm long, many worm tubes, dense Ampelisca tubes | Brown silt to clay | Large worms found at the bottom of the grab, 2 attempts required to collect usable sample |
| | | 2-4 | AAE-561-A | NA | | |
| | | 0.5-2 | AAE-562-A | NA | | |
| SK-59 | 4.8 | >4 | NA | 12 Polychaetes of 3-8 cm length, two Opistobranch of 3-4 cm long, many Ampelisca tubes | Brown silt to clay | 3 attempts required to collected usable sample |
| | | 2-4 | AAE-563-A | NA | | |
| | | 0.5-2 | AAE-564-A | NA | | |
| SK-60 | 5.2 | >4 | NA | 12 Polychaetes of 2-6 cm length, many Ampelisca and worm tubes, numerous shell fragments | Brown silt to clay | Pieces of potential asphalt pieces were found in the >4 mm sieve, see Table 4, lead shot observed during sieving |
| | | 2-4 | AAE-565-A | NA | | |
| | | 0.5-2 | AAE-566-A | NA | | |
| SK-61 | 3.4 | >4 | NA | No live organisms, few pebbles, concrete chips, and shells | Brown fine sand | Two large clay fragments found in lower part of grab from 7-8 cm depth. Two small fragments found in 0-5 cm, see Table 4 |
| | | 2-4 | AAE-537-A | NA | | |
| | | 0.5-2 | AAE-538-A | NA | | |
| SK-62 | 5.1 | >4 | NA | 10 Polychaetes of 2-8 cm length, one Opistobranch 2 cm long | Gray brown silt to clay | |
| | | 2-4 | AAE-567-A | NA | | |
| | | 0.5-2 | AAE-568-A | NA | | |

| Station | Volume of Sediment Sieved (L) | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Prey Organisms | Sediment Characteristics | Comments |
|---|---|---|---|---|---|---|
| | | 2-4 | AAE-569-A | NA | | |
| | | 0.5-2 | AAE-570-A | NA | | |
| SK-64 | 3.2 | >4 | NA | No live organisms, one maldarid tube | Very fine, stiff, brown sand | |
| | | 2-4 | AAE-539-A | 6 Polychaetes observed | | |
| | | 0.5-2 | AAE-540-A | NA | | |
| SK-65 | 5.0 | >4 | NA | No live organisms, few worm tubes, 4-5 shell fragments | Gray brown silt to clay | |
| | | 2-4 | AAE-541-A | NA | | |
| | | 0.5-2 | AAE-542-A | NA | | |
| SK-65 rep 2 | 5.1 | >4 | NA | Few Ampelisca and worm tubes, 2 small clams of 1 cm length, few shell fragments | Gray brown silt to clay | Lead shot observed during sieving |
| | | 2-4 | AAE-549-A | NA | | |
| | | 0.5-2 | AAE-550-A | NA | | |

Note: Grab samples were collected from the top 0 to 5 cm of sediment depth
NA: not applicable
rep: replicate sample

**Table 4. Clay Fragment Collection Summary.**

| Station | Collection Method | Field Sample ID | Depth Interval (cm) | | Clay Target Sample ID |
|---|---|---|---|---|---|
| | | | top | bottom | |
| SK-4 | short core | AAE-045 | 0 | 5 | AAE-579-B/C * |
| SK-4 | short core | AAE-045 | 0 | 5 | AAE-580-B/C |
| SK-4 | short core | AAE-045 | 10 | 15 | AAE-581-B/C |
| SK-5 | short core | AAE-049 | 10 | 15 | AAE-587-B/C |
| SK-5 | short core | AAE-049 | 5 | 10 | AAE-588-B/C |
| SK-6 | short core | AAE-055 | 10 | 15 | AAE-593-B/C |
| SK-7 rep 1 | short core | AAE-033 | 0 | 5 | AAE-583-B/C |
| SK-7 rep 1 | short core | AAE-033 | 5 | 10 | AAE-584-B/C |
| SK-7 rep 2 | short core | AAE-035 | 5 | 10 | AAE-585-B/C |
| SK-7 rep 2 | short core | AAE-035 | 15 | 20 | AAE-586-B/C |
| SK-8 | short core | AAE-039 | 0 | 5 | AAE-590-B/C |
| SK-8 | short core | AAE-039 | 15 | 20 | AAE-591-B/C |
| SK-8 | short core | AAE-039 | 5 | 10 | AAE-592-B/C |
| SK-9 | short core | AAE-037 | 0 | 5 | AAE-589-B/C |
| SK-13 | short core | AAE-019 | 15 | 20 | AAE-574-B/C |
| SK-15 | short core | AAE-015 | 0 | 5 | AAE-575-B/C |
| SK-18 | short core | AAE-057 | 15 | 20 | AAE-595-B/C |
| SK-24 | short core | AAE-061 | 20 | 25 | AAE-594-B/C |
| SK-25 rep 2 | short core | AAE-031 | 10 | 15 | AAE-576-B/C |
| SK-25 rep 1 | short core | AAE-021 | 15 | 20 | AAE-577-B/C |
| SK-25 rep 1 | short core | AAE-021 | 15 | 20 | AAE-578-B/C * |
| SK-30 | grab | NA | 0 | 5 | AAE-596-B/C |
| SK-30 | grab | NA | 5 | 10 | AAE-597-B/C |
| SK-31 | grab | NA | 0 | 5 | AAE-599-B/C |
| SK-36 | grab | NA | 0 | 5 | AAE-600-B/C |
| SK-44 | grab | NA | 0 | 5 | AAE-601-B/C |
| SK-60 | grab | NA | 0 | 5 | AAE-604-B/C |
| SK-61 | grab | NA | 5 | 10 | AAE-602-B/C |
| SK-61 | grab | NA | 0 | 5 | AAE-603-B/C |
| SK-66 | short core | AAE-047 | 0 | 5 | AAE-582-B/C |

NA: Not Applicable
rep: replicate sample
Samples were collected from the 4.0-mm sieve unless noted with an "* " to indicate the sample was collected from the 2.0-mm sieve.

Clay target fragments retained in the 4-mm sieve were collected and the sediment depth at which they were found was recorded. The fragments were then placed in labeled, certified-clean glass jars with Teflon-lined lids, and kept in a cooler with ice. Occasionally, clay target fragments were found deeper than 5 cm in the grab; these fragments were also saved in 4-oz glass jars and shipped to the laboratory to assist with PAH fingerprinting analysis. Clay target sample collection information is provided in Table 4. All other materials retained in the 4-mm sieve were discarded. Material retained in the 0.5-mm and 2.0-mm screens was placed in labeled Ziploc bags (Table 3) and kept in the cooler with ice. The samples were later shipped to Battelle Duxbury Operations (BDO) Laboratory for enumeration of lead shot and grit particles.

### 2.2.2 Sediment Short Cores

Duplicate short cores designated Core A and Core B were collected from 24 stations using a double 2.5" gravity corer. Core sampling information is provided in Table 5. At three stations (10% of the total), duplicate samples were collected and processed in the same manner as the original samples for field quality control. The double gravity corer consisted of two aluminum core barrels, each 50-cm long with a cutter head attached to the bottom. Each core barrel was fitted with a 49-cm length of steam-cleaned 2.5-in inner diameter polycarbonate core liner, then attached to a weighted coring head with a check valve for each core barrel. To avoid sediment disturbance, core catchers (retainers) were not used in the bottom of the core barrels. The coring head with double 2.5-in core barrels was lowered to the sediment surface and allowed to slowly penetrate the sediment with its own weight. Depth of penetration was estimated at 45 to 50 cm so that a minimum of 20 cm of sediment was retained in each barrel. This coring method allowed collection of co-located replicate cores without disturbance or compaction of the sediment. When both barrels contained acceptable (undisturbed, >20 cm) cores, the core liners were removed from the barrels and capped. Each core was labeled with a unique sample identifier, the station number, core A or B designation, length retained, sampling date and time, and sample collector. Cores were maintained in an upright position throughout collection, and were stored upright in coolers with ice on board the vessel. The cores were then brought to shore for processing.

Core A was processed and analyzed for clay target fragments, lead shot and grit abundance. Core A samples were placed upright on the plunger of a 2.5-in. core extruder and gently extruded upward 5 cm at a time. A spatula was used to cut the core into 5-cm increments to a depth of 20 cm. Each 5-cm increment of sediment was sieved through 4-mm, 2-mm, and 0.5-mm sieves following the same procedure as for the grab samples (described in Section 2.2.1). Fresh water supplied on shore was used to wash the sediment through the nested sieves. A qualitative assessment of the material retained in each of the sieve was documented in the field log. Clay fragments retained in the 4-mm sieve were collected and placed in labeled, certified-clean glass jars with Teflon lined lids, and placed in a cooler with ice (Table 4). All other materials retained in the 4-mm sieve were discarded. As with the grab sample procedure, lead shot and any other material retained in the 0.5 and 2-mm screens were placed in labeled Ziploc bags and placed in a cooler with ice. These samples were later sent to BDO for enumeration of lead shot and grit particles. Core A processing data is provided in Table 6.

Core B was extruded for organic compound analysis. Core B samples were placed upright and extruded from the core liner in the same manner as the Core A samples. Five-cm increments from the surface to a depth of 20 cm were measured and collected using a clean spatula for each sample. Half of the sediment from each 5-cm increment was collected for PAH analysis, the other half was collected for TPH-DRO (total petroleum hydrocarbons – diesel range organics) analysis. The samples were visually inspected to

## Table 5. Core Sample Coordinates.

| Station | Date Collected | Time Collected | Location (Lat Long, NAD83) | | Uncorrected Water Depth (ft) | Corrected Water Depth (-ft MLLW)* | Core A (Physical) | | Core B (Chemical) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Latitude (N) | Longitude (W) | | | Core Retained | Sample ID | Core Retained | Sample ID |
| SK-1 | 11/05/01 | 1344 | 37° 47.732' | 122° 19.965' | 16.9 | 10.6 | 113 | AAE-002 | 110 | AAE-001 |
| SK-2 | 11/05/01 | 1435 | 37° 47.655' | 122° 20.011' | 19.0 | 12.4 | 110 | AAE-004 | 110 | AAE-003 |
| SK-3 | 11/06/01 | 0956 | 37° 47.574' | 122° 19.943' | 14.0 | 10.3 | 30 | AAE-006 | 141 | AAE-005 |
| SK-4 | 11/08/01 | 1249 | 37° 47.7054' | 122° 19.9298' | 12.4 | 9.0 | 40 | AAE-045 | 38 | AAE-046 |
| SK-5 | 11/08/01 | 1053 | 37° 47.6930' | 122° 19.9617' | 12.8 | 9.3 | 35 | AAE-049 | 38 | AAE-050 |
| SK-6 | 11/09/01 | 1005 | 37° 47.6876' | 122° 19.9227' | 11.7 | 7.2 | 47 | AAE-055 | 42 | AAE-056 |
| SK-7 | 11/08/01 | 0842 | 37° 47.6826' | 122° 19.9464' | 14.1 | 9.3 | 44 | AAE-033 | 48 | AAE-034 |
| SK-7 DUP | 11/08/01 | 0852 | 37° 47.6826' | 122° 19.9464' | 14.1 | 9.3 | 44 | AAE-035 | 35 | AAE-036 |
| SK-8 | 11/08/01 | 0928 | 37° 47.6806' | 122° 19.9241' | 12.6 | 8.3 | 47 | AAE-039 | 47 | AAE-040 |
| SK-9 | 11/08/01 | 0952 | 37° 47.6741' | 122° 19.9532' | 12.5 | 8.5 | 40 | AAE-037 | 32 | AAE-038 |
| SK-10 | 11/06/01 | 1142 | 37° 47.670' | 122° 19.932' | 13.5 | 8.9 | 43 | AAE-007 | 30 | AAE-008 |
| SK-11 | 11/06/01 | 1402 | 37° 47.668' | 122° 19.911' | 12.1 | 6.1 | 38 | AAE-017 | 46 | AAE-018 |
| SK-12 | 11/06/01 | 1250 | 37° 47.659' | 122° 19.934' | 14.0 | 8.9 | 28 | AAE-009 | 48 | AAE-010 |
| SK-13 | 11/06/01 | 1320 | 37° 47.657' | 122° 19.924' | 14.2 | 8.5 | 37 | AAE-019 | 41 | AAE-020 |
| SK-14 | 11/07/01 | 1045 | 37° 47.6530' | 122° 19.9533' | 12.8 | 9.2 | 42 | AAE-027 | 32 | AAE-028 |
| SK-15 | 11/07/01 | 0921 | 37° 47.6502' | 122° 19.9417' | 12.2 | 8.4 | 42 | AAE-015 | 49 | AAE-016 |
| SK-16 | 11/07/01 | 1256 | 37° 47.6492' | 122° 19.8982' | 10.1 | 5.6 | 39 | AAE-023 | 34 | AAE-024 |
| SK-17 | 11/08/01 | 1350 | 37° 47.6419' | 122° 19.9245' | 12.2 | 8.3 | 39 | AAE-043 | 43 | AAE-044 |
| SK-18 | 11/09/01 | 1045 | 37° 47.6338' | 122° 19.8924' | 9.9 | 6.1 | 44 | AAE-057 | 44 | AAE-058 |
| SK-19 | 11/07/01 | 0942 | 37° 47.6406' | 122° 19.9384' | 12.0 | 8.3 | 39 | AAE-011 | 44 | AAE-012 |
| SK-19 DUP | 11/07/01 | 0959 | 37° 47.6406' | 122° 19.9384' | 12.0 | 8.3 | 26 | AAE-029 | 22 | AAE-030 |
| SK-20 | 11/07/01 | 1211 | 37° 47.6368' | 122° 19.9576' | 13.2 | 9.1 | 32 | AAE-025 | 34 | AAE-026 |
| SK-21 | 11/08/01 | 1435 | 37° 47.6117' | 122° 19.9098' | 12.1 | 7.7 | 45 | AAE-041 | 39 | AAE-042 |
| SK-22 | 11/09/01 | 1124 | 37° 47.5983' | 122° 19.8933' | 10.3 | 6.9 | 36 | AAE-059 | 42 | AAE-060 |
| SK-23 | 11/08/01 | 1505 | 37° 47.6012' | 122° 19.9370' | 13.9 | 9.2 | 40 | AAE-051 | 39 | AAE-052 |
| SK-24 | 11/09/01 | 1225 | 37° 47.574' | 122° 19.893' | 8.3 | 5.5 | 22 | AAE-061 | 37 | AAE-062 |
| SK-25 | 11/07/01 | 1357 | 37° 47.5494' | 122° 19.9048' | 14.0 | 8.9 | 47 | AAE-021 | 30 | AAE-022 |
| SK-25 DUP | 11/07/01 | 1412 | 37° 47.5494' | 122° 19.9048' | 14.0 | 8.9 | 36 | AAE-031 | 46 | AAE-032 |
| SK-66 | 11/08/01 | 1122 | 37° 47.7480' | 122° 19.9365' | 12.5 | 9.2 | 29 | AAE-047 | 28 | AAE-048 |
| SK-67 | 11/08/01 | 1550 | 37° 47.5095' | 122° 19.8989' | 11.2 | 6.1 | 38 | AAE-053 | >20 (NR**) | AAE-054 |

* Water depth correction to mean lower low water (MLLW) calculated using the predicted tidal height at Alameda Station.
** NR: Not Recorded
DUP: Field Duplicate

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| SK-1 | AAE-002 | 11/05/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 0900 | | | 2-4 | AAE-246-A | worms |
| | | | 0905 | | | 0.5-2 | AAE-248-A | worms |
| | | | NA | 5 | 10 | >4 | NA | small worm tubes |
| | | | 0845 | | | 2-4 | AAE-242-A | lots of worms |
| | | | 0852 | | | 0.5-2 | AAE-244-A | shells |
| | | | NA | 10 | 15 | >4 | NA | |
| | | | NA | | | 2-4 | NA | no sample material |
| | | | 0817 | | | 0.5-2 | AAE-241-A | small shells |
| | | | NA | 15 | 20 | >4 | NA | |
| | | | 0828 | | | 2-4 | AAE-243-A | small shells, sticks |
| | | | 0831 | | | 0.5-2 | AAE-245-A | |
| SK-2 | AAE-004 | 11/06/01 | NA | 0 | 5 | >4 | NA | lots of worms |
| | | | 0930 | | | 2-4 | AAE-247-A | worms |
| | | | 0935 | | | 0.5-2 | AAE-249-A | |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 0945 | | | 2-4 | AAE-250-A | worms |
| | | | 0947 | | | 0.5-2 | AAE-251-A | |
| | | | NA | 10 | 15 | >4 | NA | worms |
| | | | 1000 | | | 2-4 | AAE-252-A | worms, little grit |
| | | | 1005 | | | 0.5-2 | AAE-253-A | grit |
| | | | NA | 15 | 20 | >4 | NA | one worm, one bivalve |
| | | | NA | | | 2-4 | NA | no sample material |
| | | | 1015 | | | 0.5-2 | AAE-254-A | |
| SK-3 | AAE-006 | 11/06/01 | NA | 0 | 5 | >4 | NA | lots of worms, one bivalve |
| | | | NA | | | 2-4 | NA | no grit, a few small worms |
| | | | 1310 | | | 0.5-2 | AAE-255-A | small tubes |
| | | | NA | 5 | 10 | >4 | NA | |
| | | | 1320 | | | 2-4 | AAE-257-A | shot in sample |
| | | | 1321 | | | 0.5-2 | AAE-256-A | |
| | | | NA | 10 | 15 | >4 | NA | bivalves and worms |
| | | | 1330 | | | 2-4 | AAE-258-A | shot in sample |
| | | | 1332 | | | 0.5-2 | AAE-259-A | shot in sample |
| | | | NA | 15 | 20 | >4 | NA | bivalves and worm tubes |
| | | | 1340 | | | 2-4 | AAE-260-A | shot in sample, shells |
| | | | 1345 | | | 0.5-2 | AAE-261-A | |

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| SK-4 | AAE-045 | 11/08/01 | NA | 0 | 5 | >4 | NA | worm tubes, clay target fragment* |
| | | | 1405 | | | 2-4 | AAE-361-A | grit, shells, clay target fragments* |
| | | | 1510 | | | 0.5-2 | AAE-362-A | grit, organic matter |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1520 | | | 2-4 | AAE-363-A | grit, shells |
| | | | 1520 | | | 0.5-2 | AAE-364-A | grit, shells, organic matter |
| | | | NA | 10 | 15 | >4 | NA | bivalve, worms, clay target fragments* |
| | | | 1534 | | | 2-4 | AAE-365-A | wood, shells |
| | | | 1534 | | | 0.5-2 | AAE-366-A | grit, organic matter |
| | | | NA | 15 | 20 | >4 | NA | worm tube |
| | | | 1537 | | | 2-4 | AAE-367-A | shot, shells, grit |
| | | | 1538 | | | 0.5-2 | AAE-368-A | shells, rocks |
| SK-5 | AAE-049 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 0940 | | | 2-4 | AAE-401-A | shot, worm tubes, grit |
| | | | 0940 | | | 0.5-2 | AAE-402-A | worm tubes, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tubes, one clay target fragment* |
| | | | 0950 | | | 2-4 | AAE-403-A | grit |
| | | | 0950 | | | 0.5-2 | AAE-404-A | grit |
| | | | NA | 10 | 15 | >4 | NA | worm tubes, shells, clay target fragments* |
| | | | 0940 | | | 2-4 | AAE-405-A | shells, organic matter |
| | | | 0940 | | | 0.5-2 | AAE-406-A | |
| | | | NA | 15 | 20 | >4 | NA | shell fragments and wood pieces |
| | | | 0950 | | | 2-4 | AAE-407-A | shot, shells, organic material |
| | | | 0950 | | | 0.5-2 | AAE-408-A | grit, shell fragments, organic matter |
| SK-6 | AAE-055 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 1455 | | | 2-4 | AAE-457-A | worm tubes, shells |
| | | | 1455 | | | 0.5-2 | AAE-458-A | shells, organic debris |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1510 | | | 2-4 | AAE-459-A | worms, grit |
| | | | 1510 | | | 0.5-2 | AAE-460-A | grit |
| | | | NA | 10 | 15 | >4 | NA | clay target fragment* |
| | | | 1455 | | | 2-4 | AAE-461-A | worm, grit |
| | | | 1455 | | | 0.5-2 | AAE-462-A | grit |
| | | | NA | 15 | 20 | >4 | NA | shell fragments |
| | | | 1520 | | | 2-4 | AAE-463-A | grit |
| | | | 1520 | | | 0.5-2 | AAE-464-A | grit |

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| SK-7 | AAE-033 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes, clay target fragments* |
| | | | 0805 | | | 2-4 | AAE-377-A | worm tubes, shell fragments, shot |
| | | | 0805 | | | 0.5-2 | AAE-378-A | worm tubes, shell fragments, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tube, clay target fragments* |
| | | | 0820 | | | 2-4 | AAE-379-A | shot, organic matter |
| | | | 0820 | | | 0.5-2 | AAE-380-A | shell fragments, grit, shot |
| | | | NA | 10 | 15 | >4 | NA | worm tubes |
| | | | 0805 | | | 2-4 | AAE-381-A | shot and grit |
| | | | 0805 | | | 0.5-2 | AAE-382-A | grit |
| | | | NA | 15 | 20 | >4 | NA | |
| | | | 0815 | | | 2-4 | AAE-383-A | shot, grit |
| | | | 0815 | | | 0.5-2 | AAE-384-A | shells, organic matter |
| SK-7 rep 2 | AAE-035 | 11/09/01 | NA | 0 | 5 | >4 | NA | many worm tubes |
| | | | 0910 | | | 2-4 | AAE-393-A | worm tubes, shell fragments |
| | | | 0910 | | | 0.5-2 | AAE-394-A | organic matter, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tubes, clay target fragments* |
| | | | 0920 | | | 2-4 | AAE-395-A | shot, shell fragments |
| | | | 0920 | | | 0.5-2 | AAE-396-A | shot and grit |
| | | | NA | 10 | 15 | >4 | NA | shell fragments |
| | | | 0910 | | | 2-4 | AAE-397-A | shot, shell fragments |
| | | | 0910 | | | 0.5-2 | AAE-398-A | shell fragments, grit, organic matter |
| | | | NA | 15 | 20 | >4 | NA | clay target fragment* |
| | | | 0920 | | | 2-4 | AAE-399-A | shot, organic matter |
| | | | 0920 | | | 0.5-2 | AAE-400-A | grit and organic matter |
| SK-8 | AAE-039 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes, shells, clay target fragment* |
| | | | 1150 | | | 2-4 | AAE-433-A | shell fragments, worms |
| | | | 1150 | | | 0.5-2 | AAE-434-A | worm tubes, grit |
| | | | NA | 5 | 10 | >4 | NA | shells, worm tubes, clay target fragment* |
| | | | 1200 | | | 2-4 | AAE-435-A | rocks, shot, shells |
| | | | 1200 | | | 0.5-2 | AAE-436-A | grit, shells |
| | | | NA | 10 | 15 | >4 | NA | wood and shells |
| | | | 1200 | | | 2-4 | AAE-437-A | shot, shells |
| | | | 1200 | | | 0.5-2 | AAE-438-A | grit |
| | | | NA | 15 | 20 | >4 | NA | shell fragments, clay target fragments* |
| | | | 1150 | | | 2-4 | AAE-439-A | shot, organic matter |
| | | | 1150 | | | 0.5-2 | AAE-440-A | grit, shell fragments |
| SK-9 | AAE-037 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes, shells, clay target fragment* |
| | | | 1010 | | | 2-4 | AAE-409-A | shot, worm tubes, many shells |
| | | | 1010 | | | 0.5-2 | AAE-410-A | worm tubes, grit, shell fragments |

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | NA | 5 | 10 | >4 | NA | shells, worm tubes |
| | | | 1010 | | | 2-4 | AAE-411-A | shot, shells, grit |
| | | | 1010 | | | 0.5-2 | AAE-412-A | grit, organic material |
| | | | NA | 10 | 15 | >4 | NA | worm tubes, shell fragments |
| | | | 1020 | | | 2-4 | AAE-413-A | shot, organic matter |
| | | | 1020 | | | 0.5-2 | AAE-414-A | grit, shell fragments |
| | | | NA | 15 | 20 | >4 | NA | shell fragments |
| | | | 1020 | | | 2-4 | AAE-415-A | shell fragments, shot |
| | | | 1020 | | | 0.5-2 | AAE-416-A | grit |
| SK-10 | AAE-007 | 11/07/01 | NA | 0 | 5 | >4 | NA | few shells |
| | | | 0930 | | | 2-4 | AAE-270-A | shot/grit |
| | | | 0930 | | | 0.5-2 | AAE-271-A | grit/shells |
| | | | NA | 5 | 10 | >4 | NA | shell/wood |
| | | | 0945 | | | 2-4 | AAE-274-A | shot/wood |
| | | | 0947 | | | 0.5-2 | AAE-275-A | wood and shells |
| | | | NA | 10 | 15 | >4 | NA | few shells, wood |
| | | | 0935 | | | 2-4 | AAE-272-A | shot, shells, grit |
| | | | 0935 | | | 0.5-2 | AAE-273-A | shot, shell fragments, grit |
| | | | NA | 15 | 20 | >4 | NA | 2 pieces organic debris |
| | | | 0955 | | | 2-4 | AAE-276-A | lead shot, shell frags, debris |
| | | | 0955 | | | 0.5-2 | AAE-277-A | grit and shells |
| SK-11 | AAE-017 | 11/07/01 | NA | 0 | 5 | >4 | NA | worm tubes, wood |
| | | | 1115 | | | 2-4 | AAE-288-A | worm tubes |
| | | | 1115 | | | 0.5-2 | AAE-289-A | shell fragments, organic matter |
| | | | NA | 5 | 10 | >4 | NA | worm tube |
| | | | 1130 | | | 2-4 | AAE-292-A | wood and shells |
| | | | 1130 | | | 0.5-2 | AAE-293-A | wood parts and shells |
| | | | NA | 10 | 15 | >4 | NA | shell fragments |
| | | | 1120 | | | 2-4 | AAE-290-A | black grit |
| | | | 1120 | | | 0.5-2 | AAE-291-A | organic debris |
| | | | NA | 15 | 20 | >4 | NA | 2 worm tubes |
| | | | 1118 | | | 2-4 | AAE-284-A | wood, shells, shot |
| | | | 1118 | | | 0.5-2 | AAE-287-A | small wood and shells |
| SK-12 | AAE-009 | 11/07/01 | NA | 0 | 5 | >4 | NA | no material |
| | | | 0828 | | | 2-4 | AAE-262-A | a few shot |
| | | | 0828 | | | 0.5-2 | AAE-263-A | small grit |
| | | | NA | 5 | 10 | >4 | NA | 3 small clam shells |
| | | | 0840 | | | 2-4 | AAE-264-A | shot, some twigs |

**Table 6. Summary of Sieving Results from Core A Samples.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | 0840 | | | 0.5-2 | AAE-265-A | shell frags and grit |
| | | | NA | 10 | 15 | >4 | NA | |
| | | | 0845 | | | 2-4 | AAE-266-A | shot and grit |
| | | | 0845 | | | 0.5-2 | AAE-267-A | small shells and grit |
| | | | NA | 15 | 20 | >4 | NA | |
| | | | 0905 | | | 2-4 | AAE-268-A | shot; some twigs |
| | | | 0905 | | | 0.5-2 | AAE-269-A | grit, organic material, shell fragments |
| SK-13 | AAE-0019 | 11/07/01 | NA | 0 | 5 | >4 | NA | worms |
| | | | 1030 | | | 2-4 | AAE-278-A | shot, worms |
| | | | 1030 | | | 0.5-2 | AAE-279-A | grit, biota |
| | | | NA | 5 | 10 | >4 | NA | 3 shell fragments, wood |
| | | | 1045 | | | 2-4 | AAE-282-A | shot, wood, shells |
| | | | 1045 | | | 0.5-2 | AAE-283-A | shells, grit |
| | | | NA | 10 | 15 | >4 | NA | shell frags, wood |
| | | | 1035 | | | 2-4 | AAE-280-A | shot, shells, wood |
| | | | 1035 | | | 0.5-2 | AAE-281-A | shells, organic particles |
| | | | NA | 15 | 20 | >4 | NA | shells, worm tubes, clay target fragments* |
| | | | 1045 | | | 2-4 | AAE-285-A | shot, biota |
| | | | 1045 | | | 0.5-2 | AAE-286-A | biota, grit |
| SK-14 | AAE-027 | 11/07/01 | NA | 0 | 5 | >4 | NA | worms |
| | | | 1340 | | | 2-4 | AAE-303-A | shot |
| | | | 1340 | | | 0.5-2 | AAE-304-A | worm material, shells |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1340 | | | 2-4 | AAE-305-A | shot |
| | | | 1340 | | | 0.5-2 | AAE-306-A | wood, shells, worms |
| | | | NA | 10 | 15 | >4 | NA | rocks |
| | | | 1340 | | | 2-4 | AAE-307-A | shot, wood, shells |
| | | | 1340 | | | 0.5-2 | AAE-308-A | shells, wood |
| | | | NA | 15 | 20 | >4 | NA | worm tube |
| | | | 1340 | | | 2-4 | AAE-309-A | shot |
| | | | 1340 | | | 0.5-2 | AAE-310-A | shell fragments, wood |
| SK-15 | AAE-015 | 11/07/01 | NA | 0 | 5 | >4 | NA | worm tubes, molluscs, clay target fragments* |
| | | | 1215 | | | 2-4 | AAE-294-A | shot, grit, shrimp |
| | | | 1215 | | | 0.5-2 | AAE-295-A | worm material |
| | | | NA | 5 | 10 | >4 | AAE-302-A | one musket ball |
| | | | 1245 | | | 2-4 | AAE-300-A | shot, rocks |
| | | | 1245 | | | 0.5-2 | AAE-301-A | shells, wood, worm parts |

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | NA | 10 | 15 | >4 | NA | one worm tube |
| | | | 1230 | | | 2-4 | AAE-296-A | shot, rocks |
| | | | 1230 | | | 0.5-2 | AAE-297-A | shell fragments, wood |
| | | | NA | 15 | 20 | >4 | NA | shells, molluscs |
| | | | 1245 | | | 2-4 | AAE-298-A | shot |
| | | | 1245 | | | 0.5-2 | AAE-299-A | wood and shells |
| SK-16 | AAE-023 | 11/08/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 0805 | | | 2-4 | AAE-327-A | worms/worm tubes, shells |
| | | | 0805 | | | 0.5-2 | AAE-328-A | organic matter, worms, worm tubes |
| | | | NA | 5 | 10 | >4 | NA | 5 worm tubes |
| | | | 0820 | | | 2-4 | AAE-330-A | black grit |
| | | | 0820 | | | 0.5-2 | AAE-329-A | grit, organic matter |
| | | | NA | 10 | 15 | >4 | NA | 5 worm tubes |
| | | | 0835 | | | 2-4 | AAE-331-A | shells, organic matter |
| | | | 0835 | | | 0.5-2 | AAE-332-A | grit, organic matter |
| | | | NA | 15 | 20 | >4 | NA | 4 worm tubes |
| | | | 0845 | | | 2-4 | AAE-333-A | shell, grit |
| | | | 0845 | | | 0.5-2 | AAE-334-A | grit, organic matter |
| SK-17 | AAE-043 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes, shell fragments |
| | | | 1120 | | | 2-4 | AAE-425-A | worm tubes, shells |
| | | | 1120 | | | 0.5-2 | AAE-426-A | worm tubes, worms, grit |
| | | | NA | 5 | 10 | >4 | NA | 2 worm tubes |
| | | | 1130 | | | 2-4 | AAE-427-A | shot, organic matter |
| | | | 1130 | | | 0.5-2 | AAE-428-A | grit, shells |
| | | | NA | 10 | 15 | >4 | NA | one worm tube |
| | | | 1120 | | | 2-4 | AAE-429-A | shot, grit |
| | | | 1120 | | | 0.5-2 | AAE-430-A | grit, worms |
| | | | NA | 15 | 20 | >4 | NA | worm tube |
| | | | 1130 | | | 2-4 | AAE-431-A | shot, wood pieces |
| | | | 1130 | | | 0.5-2 | AAE-432-A | grit |
| SK-18 | AAE-057 | 11/09/01 | NA | 0 | 5 | >4 | NA | one worm |
| | | | 1555 | | | 2-4 | NA | no sample material |
| | | | 1555 | | | 0.5-2 | AAE-474-A | organic debris, grit |
| | | | NA | 5 | 10 | >4 | NA | one worm |
| | | | 1600 | | | 2-4 | NA | one worm, no sample material |
| | | | 1600 | | | 0.5-2 | AAE-476-A | grit |
| | | | NA | 10 | 15 | >4 | NA | shell fragments |
| | | | 1605 | | | 2-4 | AAE-477-A | shell fragments, wood |

**Table 6. Summary of Sieving Results from Core A Samples.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | 1605 | | | 0.5-2 | AAE-478-A | organic debris, grit |
| | | | NA | 15 | 20 | >4 | NA | one clay target fragment* |
| | | | 1605 | | | 2-4 | AAE-479-A | shell fragments, grit |
| | | | 1605 | | | 0.5-2 | AAE-480-A | shell fragments, grit |
| SK-19 | AAE-011 | 11/07/01 | NA | 0 | 5 | >4 | NA | worm tube |
| | | | 1430 | | | 2-4 | AAE-311-A | shot and worms |
| | | | 1430 | | | 0.5-2 | AAE-312-A | worms, wood, shells |
| | | | NA | 5 | 10 | >4 | NA | worm tube |
| | | | 1430 | | | 2-4 | AAE-313-A | shot |
| | | | 1430 | | | 0.5-2 | AAE-314-A | wood, shells, worms |
| | | | NA | 10 | 15 | >4 | NA | worms |
| | | | 1430 | | | 2-4 | AAE-315-A | shot, wood |
| | | | 1430 | | | 0.5-2 | AAE-316-A | wood and shells |
| | | | NA | 15 | 20 | >4 | NA | worm tubes |
| | | | 1430 | | | 2-4 | AAE-317-A | shot, wood |
| | | | 1430 | | | 0.5-2 | AAE-318-A | wood, shells |
| SK-19 rep 2 | AAE-029 | 11/07/01 | NA | 0 | 5 | >4 | NA | lots of worm tubes and worms |
| | | | 1515 | | | 2-4 | AAE-319-A | shot, shells |
| | | | 1515 | | | 0.5-2 | AAE-320-A | wood and shells |
| | | | NA | 5 | 10 | >4 | NA | few worm tubes |
| | | | 1515 | | | 2-4 | AAE-321-A | shot |
| | | | 1515 | | | 0.5-2 | AAE-322-A | wood and shells |
| | | | NA | 10 | 15 | >4 | NA | one worm |
| | | | 1515 | | | 2-4 | AAE-323-A | shot |
| | | | 1515 | | | 0.5-2 | AAE-324-A | shells and wood |
| | | | NA | 15 | 20 | >4 | NA | rocks |
| | | | 1515 | | | 2-4 | AAE-325-A | shot |
| | | | 1515 | | | 0.5-2 | AAE-326-A | wood and shells |
| SK-20 | AAE-025 | 11/08/01 | NA | 0 | 5 | >4 | NA | lots of worm tubes, shells |
| | | | 1220 | | | 2-4 | AAE-345-A | shot |
| | | | 1220 | | | 0.5-2 | AAE-346-A | worm tubes |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1230 | | | 2-4 | AAE-347-A | shot |
| | | | 1230 | | | 0.5-2 | AAE-348-A | grit, organic matter |
| | | | NA | 10 | 15 | >4 | NA | worm tubes |
| | | | 1255 | | | 2-4 | AAE-349-A | shot |
| | | | 1255 | | | 0.5-2 | AAE-350-A | grit, woody debris |
| | | | NA | 15 | 20 | >4 | NA | worm tubes |

**Table 6. Summary of Sieving Results from Core A Samples.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | 1300 | | | 2-4 | AAE-351-A | one piece of shell |
| | | | 1300 | | | 0.5-2 | AAE-352-A | grit |
| SK-21 | AAE-041 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 1050 | | | 2-4 | NA | worm tubes |
| | | | 1050 | | | 0.5-2 | AAE-418-A | worm tubes, shell fragments |
| | | | NA | 5 | 10 | >4 | NA | |
| | | | 1100 | | | 2-4 | AAE-419-A | shot, shell fragments |
| | | | 1100 | | | 0.5-2 | AAE-420-A | shell fragments, worm |
| | | | NA | 10 | 15 | >4 | NA | |
| | | | 1100 | | | 2-4 | AAE-421-A | organic debris, grit |
| | | | 1100 | | | 0.5-2 | AAE-422-A | organic debris, grit |
| | | | NA | 15 | 20 | >4 | NA | |
| | | | 1045 | | | 2-4 | AAE-423-A | shot, shell fragments, organic debris |
| | | | 1045 | | | 0.5-2 | AAE-424-A | organic debris, grit |
| SK-22 | AAE-059 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 1420 | | | 2-4 | AAE-449-A | worm tubes, grit |
| | | | 1420 | | | 0.5-2 | AAE-450-A | worm tubes, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tubes, shells |
| | | | 1435 | | | 2-4 | AAE-451-A | shell and wood fragments |
| | | | 1435 | | | 0.5-2 | AAE-452-A | grit |
| | | | NA | 10 | 15 | >4 | NA | worm tubes, wood debris |
| | | | 1420 | | | 2-4 | AAE-453-A | shell fragments, shot |
| | | | 1420 | | | 0.5-2 | AAE-454-A | organic debris, shells |
| | | | NA | 15 | 20 | >4 | NA | shells and fragments, one worm |
| | | | 1435 | | | 2-4 | AAE-455-A | shot, shells, wood |
| | | | 1435 | | | 0.5-2 | AAE-456-A | shells, organic debris, grit, shot |
| SK-23 | AAE-051 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes, shells |
| | | | 1225 | | | 2-4 | AAE-441-A | worm tubes, shot |
| | | | 1225 | | | 0.5-2 | AAE-442-A | worm tubes, worms, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1240 | | | 2-4 | AAE-443-A | shot, worms |
| | | | 1240 | | | 0.5-2 | AAE-444-A | grit |
| | | | NA | 10 | 15 | >4 | NA | shell fragments |
| | | | 1225 | | | 2-4 | AAE-445-A | shot, grit, worms |
| | | | 1225 | | | 0.5-2 | AAE-446-A | grit, organic debris |
| | | | NA | 15 | 20 | >4 | NA | worm tubes, fragments |
| | | | 1240 | | | 2-4 | NA | no sample material |
| | | | 1240 | | | 0.5-2 | AAE-448-A | grit |

## Table 6. Summary of Sieving Results from Core A Samples.

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| SK-24 | AAE-061 | 11/09/01 | NA | 0 | 5 | >4 | NA | nothing |
| | | | 1525 | | | 2-4 | NA | no sample material |
| | | | 1525 | | | 0.5-2 | AAE-466-A | grit |
| | | | NA | 5 | 10 | >4 | NA | nothing |
| | | | 1540 | | | 2-4 | AAE-467-A | grit |
| | | | 1540 | | | 0.5-2 | AAE-468-A | grit |
| | | | NA | 10 | 15 | >4 | NA | nothing |
| | | | 1540 | | | 2-4 | AAE-469-A | shot, shell frags |
| | | | 1540 | | | 0.5-2 | AAE-470-A | shell frags, organic debris, grit |
| | | | NA | 15 | 20 | >4 | NA | nothing |
| | | | 1545 | | | 2-4 | AAE-471-A | grit |
| | | | 1545 | | | 0.5-2 | AAE-472-A | grit |
| SK-25 rep 2 | AAE-031 | 11/08/01 | NA | 0 | 5 | >4 | NA | seaweed, worm tubes |
| | | | 0945 | | | 2-4 | AAE-337-A | worm tubes |
| | | | 0945 | | | 0.5-2 | AAE-338-A | organic matter |
| | | | NA | 5 | 10 | >4 | NA | one shell, one worm tube |
| | | | 0945 | | | 2-4 | AAE-339-A | one shell, some seaweed |
| | | | 0945 | | | 0.5-2 | AAE-340-A | organic particles, grit |
| | | | NA | 10 | 15 | >4 | NA | 10 tiny shells |
| | | | 0945 | | | 2-4 | AAE-341-A | shells, grit, clay target fragments* |
| | | | 0945 | | | 0.5-2 | AAE-342-A | shells, grit, organic matter |
| | | | NA | 15 | 20 | >4 | NA | lots of shells |
| | | | 0930 | | | 2-4 | AAE-335-A | shot |
| | | | 0930 | | | 0.5-2 | AAE-336-A | grit |
| SK-25 | AAE-021 | 11/08/01 | NA | 0 | 5 | >4 | NA | lots of worm tubes |
| | | | 1313 | | | 2-4 | AAE-353-A | worm tubes and grit |
| | | | 1313 | | | 0.5-2 | AAE-354-A | worms, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tube |
| | | | 1316 | | | 2-4 | AAE-355-A | clam shell, grit |
| | | | 1316 | | | 0.5-2 | AAE-356-A | grit, organic matter |
| | | | NA | 10 | 15 | >4 | NA | |
| | | | 1323 | | | 2-4 | AAE-357-A | grit, worm tubes |
| | | | 1323 | | | 0.5-2 | AAE-358-A | grit |
| | | | NA | 15 | 20 | >4 | NA | shells, clay target fragment* |
| | | | 1330 | | | 2-4 | AAE-359-A | shot and shells |
| | | | 1330 | | | 0.5-2 | AAE-360-A | organic matter, grit |

**Table 6. Summary of Sieving Results from Core A Samples.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) top | Depth Interval (cm) bottom | Sample Particle Size (mm) | Lead Shot and Grit Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| SK-66 | AAE-047 | 11/08/01 | NA | 0 | 5 | >4 | NA | worm tubes, shells |
| | | | 1600 | | | 2-4 | AAE-369-A | shells, grit, clay target fragment* |
| | | | 1600 | | | 0.5-2 | AAE-370-A | shells, grit, organic matter |
| | | | NA | 5 | 10 | >4 | NA | worm tubes |
| | | | 1655 | | | 2-4 | AAE-371-A | grit and shells |
| | | | 1655 | | | 0.5-2 | AAE-372-A | grit and shells |
| | | | NA | 10 | 15 | >4 | NA | worm tubes, shells |
| | | | 1705 | | | 2-4 | AAE-373-A | grit and shells |
| | | | 1705 | | | 0.5-2 | AAE-374-A | grit and shells |
| | | | NA | 15 | 20 | >4 | NA | many shells |
| | | | 1710 | | | 2-4 | AAE-375-A | grit and shells |
| | | | 1710 | | | 0.5-2 | AAE-376-A | grit and shells |
| SK-67 | AAE-053 | 11/09/01 | NA | 0 | 5 | >4 | NA | worm tubes |
| | | | 0840 | | | 2-4 | AAE-385-A | worm tubes, grit |
| | | | 0840 | | | 0.5-2 | AAE-386-A | organic matter, shell fragments, grit |
| | | | NA | 5 | 10 | >4 | NA | worm tube |
| | | | 0850 | | | 2-4 | AAE-387-A | shells, worm tubes |
| | | | 0850 | | | 0.5-2 | AAE-388-A | organic matter, grit |
| | | | NA | 10 | 15 | >4 | NA | worm tubes |
| | | | 0850 | | | 2-4 | AAE-389-A | shell fragments |
| | | | 0850 | | | 0.5-2 | AAE-390-A | grit and shell fragments |
| | | | NA | 15 | 20 | >4 | NA | |
| | | | 0840 | | | 2-4 | AAE-391-A | shot, grit, shells |
| | | | 0840 | | | 0.5-2 | AAE-392-A | sand, grit, shot |

* See Table 4 for clay target fragment collection data
NA: Not Applicable
rep: replicate sample

ensure that equal halves of the 5-cm sample were placed into each sample jar for analysis. The entire 5-cm increment was used to meet sample volume requirements. Each sample was placed into a labeled, certified-clean glass jar with Teflon-lined lid, and kept in a cooler with ice. PAH and TPH-DRO samples were later shipped to BDO and STL, respectively. Core B processing data is provided in Table 7.

### 2.2.3 Sediment Long Cores

Duplicate long cores designated Core A and B were collected from three stations (SK-1, SK-2, and SK-3) using a single gravity corer lined with 3.5-in. inner diameter butyrate liner. The core liner and caps were steam cleaned prior to use. As with the short cores, core catchers (retainers) were not used in the bottom of the cores as they can contribute to sediment disturbance. The longer gravity cores were also collected by allowing the sampler to penetrate the sediment under its own weight to approximately 150 cm so that a minimum of 102 cm of sediment was retained in each core. Once the samples were retrieved on the boat, the penetration and recovery of each core was recorded on the sediment collection form and a label with the sample location and time of collection was placed directly on the cores. The cores were then brought to shore for processing. Long core collection information is provided in Table 5.

Each long Core A was processed following the same procedure as the short Core A samples. The top 20 cm was split into 5-cm increments, each of which was sieved through the stack of 4-mm, 2-mm, and 0.5-mm sieves and sampled for clay target fragments, lead shot, and grit particles as described above. Core A processing data is provided in Table 6.

Each long Core B was subsampled for organic compounds and radioisotope analysis. The core was placed on Teflon-lined table and cut longitudinally using an electric saw (Kett Power Shear model 442). One half (Side 1) was used to collect samples for organic compound analysis while the other half (Side 2) was used for radioisotope analysis. Side 1 of the long core B was partitioned into 5-cm increments from 0 to 25 cm. Three additional organics samples were collected from 45-50 cm, 70-75 cm, and 95-100 cm increments. Half of the sediment from each 5-cm increment of Side 1 was collected for PAH analysis, the other half was collected for TPH-DRO analysis. As with the short Core A samples, samples were visually inspected to ensure that equal halves of the 5-cm increment was placed into each jar for chemical analysis. All of the sediment from the 5-cm increment were needed to meet sample volume requirements. Sediment was scooped out of each measured segment using a clean stainless steel spatula. The samples were then placed in labeled, certified-clean glass jars with Teflon–lined lids and in a cooler with ice. Samples were then sent to BDO and STL for PAH and TPH-DRO analyses, respectively. A detailed physical description of Side 2 of long Core B, including color, sediment type, structure, odor, and particle size was recorded in the core logs (see Appendix C). Side 2 was then partitioned into 11 2-cm sections: 0-2, 10-12, 20-22, 30-32, 40-42, 50-52, 60-62, 70-72, 80-82, 90-92, and 100-102 cm. Sediment from each 2-cm horizon was placed into a labeled, tared polystyrene container using a small wooden spatula. The samples were then kept on ice in a cooler and later shipped to BSL for radioisotope analysis. Core B processing data is provided in Table 7.

## 2.3 Sample Custody Documentation and Shipping

During the course of each day, sample custody forms were prepared as samples were collected. Prior to shipment to the laboratories, the samples were always kept in coolers with ice, and the temperature was monitored several times a day to ensure that the samples were kept at 4°C (+/-2°C). For shipment, the samples were packed in coolers with blue ice, bubble-wrapped, sealed and shipped by overnight courier to the laboratories. Sample custody forms documenting the contents of the cooler were included in each cooler. Sample custody documentation is provided in Appendix B.

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-1 | AAE-001 | 11/05/01 | 1618 | 0 | 5 | AAE-102-B | NA |
| | | | 1618 | | | AAE-102-C | NA |
| | | | 1618 | 5 | 10 | AAE-103-B | NA |
| | | | 1619 | | | AAE-103-C | NA |
| | | | 1619 | 10 | 15 | AAE-104-B | NA |
| | | | 1620 | | | AAE-104-C | NA |
| | | | 1621 | 15 | 20 | AAE-105-B | NA |
| | | | 1621 | | | AAE-105-C | NA |
| | | | 1622 | 20 | 25 | AAE-106-B | NA |
| | | | 1622 | | | AAE-106-C | NA |
| | | | 1624 | 45 | 50 | AAE-107-B | NA |
| | | | 1624 | | | AAE-107-C | NA |
| | | | 1625 | 70 | 75 | AAE-108-B | NA |
| | | | 1626 | | | AAE-108-C | NA |
| | | | 1626 | 95 | 100 | AAE-109-B | NA |
| | | | 1627 | | | AAE-109-C | NA |
| | | | 1651 | 0 | 2 | NA | AAE-83-D |
| | | | 1653 | 10 | 12 | NA | AAE-84-D |
| | | | 1655 | 20 | 22 | NA | AAE-91-D |
| | | | 1657 | 30 | 32 | NA | AAE-89-D |
| | | | 1656 | 40 | 42 | NA | AAE-87-D |
| | | | 1657 | 50 | 52 | NA | AAE-90-D |
| | | | 1657 | 60 | 62 | NA | AAE-92-D |
| | | | 1659 | 70 | 72 | NA | AAE-93-D |
| | | | 1702 | 80 | 82 | NA | AAE-94-D |
| | | | 1656 | 90 | 92 | NA | AAE-86-D |
| | | | 1655 | 100 | 102 | NA | AAE-88-D |
| SK-2 | AAE-003 | 11/05/01 | 1708 | 0 | 5 | AAE-110-B | NA |
| | | | | | | AAE-110-C | NA |
| | | | 1710 | 5 | 10 | AAE-111-B | NA |
| | | | | | | AAE-111-C | NA |
| | | | 1712 | 10 | 15 | AAE-112-B | NA |
| | | | | | | AAE-112-C | NA |
| | | | 1714 | 15 | 20 | AAE-113-B | NA |
| | | | | | | AAE-113-C | NA |
| | | | 1714 | 20 | 25 | AAE-114-B | NA |
| | | | | | | AAE-114-C | NA |
| | | | 1716 | 45 | 50 | AAE-115-B | NA |
| | | | | | | AAE-115-C | NA |
| | | | 1718 | 70 | 75 | AAE-116-B | NA |
| | | | | | | AAE-116-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-2 | AAE-003 | 11/05/01 | 1720 | 95 | 100 | AAE-117-B | NA |
| | | | | | | AAE-117-C | NA |
| | | | 1732 | 0 | 2 | NA | AAE-99-D |
| | | | 1748 | 10 | 12 | NA | AAE-74-D |
| | | | 1718 | 20 | 22 | NA | AAE-80-D |
| | | | 1725 | 30 | 32 | NA | AAE-79-D |
| | | | 1741 | 40 | 42 | NA | AAE-76-D |
| | | | 1722 | 50 | 52 | NA | AAE-82-D |
| | | | 1748 | 60 | 62 | NA | AAE-77-D |
| | | | 1733 | 70 | 72 | NA | AAE-85-D |
| | | | 1745 | 80 | 82 | NA | AAE-75-D |
| | | | 1752 | 90 | 92 | NA | AAE-78-D |
| | | | 1754 | 100 | 102 | NA | AAE-81-D |
| SK-3 | AAE-005 | 11/06/01 | 1100 | 0 | 5 | AAE-119-B | NA |
| | | | | | | AAE-119-C | NA |
| | | | 1105 | 5 | 10 | AAE-120-B | NA |
| | | | | | | AAE-120-C | NA |
| | | | 1109 | 10 | 15 | AAE-121-B | NA |
| | | | | | | AAE-121-C | NA |
| | | | 1117 | 15 | 20 | AAE-122-B | NA |
| | | | | | | AAE-122-C | NA |
| | | | 1120 | 20 | 25 | AAE-123-B | NA |
| | | | | | | AAE-123-C | NA |
| | | | 1125 | 45 | 50 | AAE-124-B | NA |
| | | | | | | AAE-124-C | NA |
| | | | 1133 | 70 | 75 | AAE-125-B | NA |
| | | | | | | AAE-125-C | NA |
| | | | 1137 | 95 | 100 | AAE-126-B | NA |
| | | | | | | AAE-126-C | NA |
| | | | 1205 | 0 | 2 | NA | AAE-95-D |
| | | | 1210 | 10 | 12 | NA | AAE-572-B/C |
| | | | 1213 | 20 | 22 | NA | AAE-96-D |
| | | | 1215 | 30 | 32 | NA | AAE-72-D |
| | | | 1218 | 40 | 42 | NA | AAE-97-D |
| | | | 1220 | 50 | 52 | NA | AAE-98-D |
| | | | 1222 | 60 | 62 | NA | AAE-573-B/C |
| | | | 1225 | 70 | 72 | NA | AAE-100-D |
| | | | 1228 | 80 | 82 | NA | AAE-571-B/C |
| | | | 1230 | 90 | 92 | NA | AAE-71-D |
| | | | 1233 | 100 | 102 | NA | AAE-73-D |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-4 | AAE-046 | 11/08/01 | 1415 | 0 | 5 | AAE-198-B | NA |
| | | | | | | AAE-198-C | NA |
| | | | | 5 | 10 | AAE-199-B | NA |
| | | | | | | AAE-199-C | NA |
| | | | | 10 | 15 | AAE-200-B | NA |
| | | | | | | AAE-200-C | NA |
| | | | | 15 | 20 | AAE-201-B | NA |
| | | | | | | AAE-201-C | NA |
| SK-5 | AAE-050 | 11/08/01 | 1350 | 0 | 5 | AAE-194-B | NA |
| | | | | | | AAE-194-C | NA |
| | | | | 5 | 10 | AAE-195-B | NA |
| | | | | | | AAE-195-C | NA |
| | | | | 10 | 15 | AAE-196-B | NA |
| | | | | | | AAE-196-C | NA |
| | | | | 15 | 20 | AAE-197-B | NA |
| | | | | | | AAE-197-C | NA |
| SK-6 | AAE-056 | 11/09/01 | 1435 | 0 | 5 | AAE-222-B | NA |
| | | | | | | AAE-222-C | NA |
| | | | | 5 | 10 | AAE-223-B | NA |
| | | | | | | AAE-223-C | NA |
| | | | | 10 | 15 | AAE-224-B | NA |
| | | | | | | AAE-224-C | NA |
| | | | | 15 | 20 | AAE-225-B | NA |
| | | | | | | AAE-225-C | NA |
| SK-7 | AAE-034 | 11/08/01 | 1030 | 0 | 5 | AAE-174-B | NA |
| | | | | | | AAE-174-C | NA |
| | | | | 5 | 10 | AAE-175-B | NA |
| | | | | | | AAE-175-C | NA |
| | | | | 10 | 15 | AAE-176-B | NA |
| | | | | | | AAE-176-C | NA |
| | | | | 15 | 20 | AAE-177-B | NA |
| | | | | | | AAE-177-C | NA |
| SK-7 rep 2 | AAE-036 | 11/08/01 | 1155 | 0 | 5 | AAE-186-B | NA |
| | | | | | | AAE-186-C | NA |
| | | | 1200 | 5 | 10 | AAE-187-B | NA |
| | | | | | | AAE-187-C | NA |
| | | | 1205 | 10 | 15 | AAE-188-B | NA |
| | | | | | | AAE-188-C | NA |
| | | | 1210 | 15 | 20 | AAE-189-B | NA |
| | | | | | | AAE-189-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-8 | AAE-040 | 11/08/01 | 1100 | 0 | 5 | AAE-178-B | NA |
| | | | | | | AAE-178-C | NA |
| | | | | 5 | 10 | AAE-179-B | NA |
| | | | | | | AAE-179-C | NA |
| | | | | 10 | 15 | AAE-180-B | NA |
| | | | | | | AAE-180-C | NA |
| | | | | 15 | 20 | AAE-181-B | NA |
| | | | | | | AAE-181-C | NA |
| SK-9 | AAE-038 | 11/08/01 | 1130 | 0 | 5 | AAE-182-B | NA |
| | | | | | | AAE-182-C | NA |
| | | | 1130 | 5 | 10 | AAE-183-B | NA |
| | | | | | | AAE-183-C | NA |
| | | | 1135 | 10 | 15 | AAE-184-B | NA |
| | | | | | | AAE-184-C | NA |
| | | | 1142 | 15 | 20 | AAE-185-B | NA |
| | | | | | | AAE-185-C | NA |
| SK-10 | AAE-008 | 11/06/01 | 1610 | 0 | 5 | AAE-131-B | NA |
| | | | | | | AAE-131-C | NA |
| | | | | 5 | 10 | AAE-132-B | NA |
| | | | | | | AAE-132-C | NA |
| | | | | 10 | 15 | AAE-133-B | NA |
| | | | | | | AAE-133-C | NA |
| | | | | 15 | 20 | AAE-134-B | NA |
| | | | | | | AAE-134-C | NA |
| SK-11 | AAE-018 | 11/06/01 | 1640 | 0 | 5 | AAE-139-B | NA |
| | | | | | | AAE-139-C | NA |
| | | | | 5 | 10 | AAE-140-B | NA |
| | | | | | | AAE-140-C | NA |
| | | | | 10 | 15 | AAE-141-B | NA |
| | | | | | | AAE-141-C | NA |
| | | | | 15 | 20 | AAE-142-B | NA |
| | | | | | | AAE-142-C | NA |
| SK-12 | AAE-010 | 11/06/01 | 1620 | 0 | 5 | AAE-135-B | NA |
| | | | | | | AAE-135-C | NA |
| | | | | 5 | 10 | AAE-136-B | NA |
| | | | | | | AAE-136-C | NA |
| | | | | 10 | 15 | AAE-137-B | NA |
| | | | | | | AAE-137-C | NA |
| | | | | 15 | 20 | AAE-138-B | NA |
| | | | | | | AAE-138-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-13 | AAE-020 | 11/06/01 | 1600 | 0 | 5 | AAE-127-B | NA |
| | | | | | | AAE-127-C | NA |
| | | | | 5 | 10 | AAE-128-B | NA |
| | | | | | | AAE-128-C | NA |
| | | | | 10 | 15 | AAE-129-B | NA |
| | | | | | | AAE-129-C | NA |
| | | | | 15 | 20 | AAE-130-B | NA |
| | | | | | | AAE-130-C | NA |
| SK-14 | AAE-028 | 11/07/01 | 1315 | 0 | 5 | AAE-118-B | NA |
| | | | | | | AAE-118-C | NA |
| | | | | 5 | 10 | AAE-143-B | NA |
| | | | | | | AAE-143-C | NA |
| | | | | 10 | 15 | AAE-144-B | NA |
| | | | | | | AAE-144-C | NA |
| | | | | 15 | 20 | AAE-145-B | NA |
| | | | | | | AAE-145-C | NA |
| SK-15 | AAE-016 | 11/07/01 | 1325 | 0 | 5 | AAE-146-B | NA |
| | | | | | | AAE-146-C | NA |
| | | | | 5 | 10 | AAE-147-B | NA |
| | | | | | | AAE-147-C | NA |
| | | | | 10 | 15 | AAE-148-B | NA |
| | | | | | | AAE-148-C | NA |
| | | | | 15 | 20 | AAE-149-B | NA |
| | | | | | | AAE-149-C | NA |
| SK-16 | AAE-024 | 11/07/01 | 1615 | 0 | 5 | AAE-170-B | NA |
| | | | | | | AAE-170-C | NA |
| | | | | 5 | 10 | AAE-171-B | NA |
| | | | | | | AAE-171-C | NA |
| | | | | 10 | 15 | AAE-172-B | NA |
| | | | | | | AAE-172-C | NA |
| | | | | 15 | 20 | AAE-173-B | NA |
| | | | | | | AAE-173-C | NA |
| SK-17 | AAE-044 | 11/08/01 | 1640 | 0 | 5 | AAE-206-B | NA |
| | | | | | | AAE-206-C | NA |
| | | | | 5 | 10 | AAE-207-B | NA |
| | | | | | | AAE-207-C | NA |
| | | | | 10 | 15 | AAE-208-B | NA |
| | | | | | | AAE-208-C | NA |
| | | | | 15 | 20 | AAE-209-B | NA |
| | | | | | | AAE-209-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-18 | AAE-058 | 11/09/01 | 1510 | 0 | 5 | AAE-230-B | NA |
| | | | | | | AAE-230-C | NA |
| | | | | 5 | 10 | AAE-231-B | NA |
| | | | | | | AAE-231-C | NA |
| | | | | 10 | 15 | AAE-232-B | NA |
| | | | | | | AAE-232-C | NA |
| | | | | 15 | 20 | AAE-233-B | NA |
| | | | | | | AAE-233-C | NA |
| SK-19 rep 2 | AAE-030 | 11/07/01 | 1410 | 0 | 5 | AAE-150-B | NA |
| | | | | | | AAE-150-C | NA |
| | | | | 5 | 10 | AAE-151-B | NA |
| | | | | | | AAE-151-C | NA |
| | | | | 10 | 15 | AAE-152-B | NA |
| | | | | | | AAE-152-C | NA |
| | | | | 15 | 20 | AAE-153-B | NA |
| | | | | | | AAE-153-C | NA |
| SK-19 rep 1 | AAE-012 | 11/07/01 | 1430 | 0 | 5 | AAE-154-B | NA |
| | | | | | | AAE-154-C | NA |
| | | | | 5 | 10 | AAE-155-B | NA |
| | | | | | | AAE-155-C | NA |
| | | | | 10 | 15 | AAE-156-B | NA |
| | | | | | | AAE-156-C | NA |
| | | | | 15 | 20 | AAE-157-B | NA |
| | | | | | | AAE-157-C | NA |
| SK-20 | AAE-026 | 11/07/01 | 1600 | 0 | 5 | AAE-166-B | NA |
| | | | | | | AAE-166-C | NA |
| | | | | 5 | 10 | AAE-167-B | NA |
| | | | | | | AAE-167-C | NA |
| | | | | 10 | 15 | AAE-168-B | NA |
| | | | | | | AAE-168-C | NA |
| | | | | 15 | 20 | AAE-169-B | NA |
| | | | | | | AAE-169-C | NA |
| SK-21 | AAE-042 | 11/08/01 | 1705 | 0 | 5 | AAE-214-B | NA |
| | | | | | | AAE-214-C | NA |
| | | | | 5 | 10 | AAE-215-B | NA |
| | | | | | | AAE-215-C | NA |
| | | | | 10 | 15 | AAE-216-B | NA |
| | | | | | | AAE-216-C | NA |
| | | | | 15 | 20 | AAE-217-B | NA |
| | | | | | | AAE-217-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-22 | AAE-060 | 11/09/01 | 1425 | 0 | 5 | AAE-226-B | NA |
| | | | | | | AAE-226-C | NA |
| | | | | 5 | 10 | AAE-227-B | NA |
| | | | | | | AAE-227-C | NA |
| | | | | 10 | 15 | AAE-228-B | NA |
| | | | | | | AAE-228-C | NA |
| | | | | 15 | 20 | AAE-229-B | NA |
| | | | | | | AAE-229-C | NA |
| SK-23 | AAE-052 | 11/08/01 | 1625 | 0 | 5 | AAE-202-B | NA |
| | | | | | | AAE-202-C | NA |
| | | | | 5 | 10 | AAE-203-B | NA |
| | | | | | | AAE-203-C | NA |
| | | | | 10 | 15 | AAE-204-B | NA |
| | | | | | | AAE-204-C | NA |
| | | | | 15 | 20 | AAE-205-B | NA |
| | | | | | | AAE-205-C | NA |
| SK-24 | AAE-062 | 11/09/01 | 1455 | 0 | 5 | AAE-218-B | NA |
| | | | | | | AAE-218-C | NA |
| | | | | 5 | 10 | AAE-219-B | NA |
| | | | | | | AAE-219-C | NA |
| | | | | 10 | 15 | AAE-220-B | NA |
| | | | | | | AAE-220-C | NA |
| | | | | 15 | 20 | AAE-221-B | NA |
| | | | | | | AAE-221-C | NA |
| SK-25 rep 2 | AAE-032 | 11/07/01 | 1510 | 0 | 5 | AAE-158-B | NA |
| | | | | | | AAE-158-C | NA |
| | | | | 5 | 10 | AAE-159-B | NA |
| | | | | | | AAE-159-C | NA |
| | | | | 10 | 15 | AAE-160-B | NA |
| | | | | | | AAE-160-C | NA |
| | | | | 15 | 20 | AAE-161-B | NA |
| | | | | | | AAE-161-C | NA |
| SK-25 rep 1 | AAE-022 | 11/07/01 | 1540 | 0 | 5 | AAE-162-B | NA |
| | | | | | | AAE-162-C | NA |
| | | | | 5 | 10 | AAE-163-B | NA |
| | | | | | | AAE-163-C | NA |
| | | | | 10 | 15 | AAE-164-B | NA |
| | | | | | | AAE-164-C | NA |
| | | | | 15 | 20 | AAE-165-B | NA |
| | | | | | | AAE-165-C | NA |

**Table 7. Core B Collection Summary.**

| Station | Field Sample ID | Processing Date | Processing Time | Depth Interval (cm) | | Chemistry Sample ID* - Side 1 | Chemistry Sample ID** - Side 2 |
|---|---|---|---|---|---|---|---|
| SK-66 | AAE-048 | 11/08/01 | 1330 | 0 | 5 | AAE-190-B | NA |
| | | | | | | AAE-190-C | NA |
| | | | | 5 | 10 | AAE-191-B | NA |
| | | | | | | AAE-191-C | NA |
| | | | | 10 | 15 | AAE-192-B | NA |
| | | | | | | AAE-192-C | NA |
| | | | | 15 | 20 | AAE-193-B | NA |
| | | | | | | AAE-193-C | NA |
| SK-67 | AAE-054 | 11/08/01 | 1650 | 0 | 5 | AAE-210-B | NA |
| | | | | | | AAE-210-C | NA |
| | | | | 5 | 10 | AAE-211-B | NA |
| | | | | | | AAE-211-C | NA |
| | | | | 10 | 15 | AAE-212-B | NA |
| | | | | | | AAE-212-C | NA |
| | | | | 15 | 20 | AAE-213-B | NA |
| | | | | | | AAE-213-C | NA |

* Samples labeled -B and -C are for PAH and TPH-DRO analysis, respectively.
** Samples labeled -D and –B/C are for radioisotope analysis.
NA: not applicable
rep: replicate sample

## 3.0 DEVIATIONS AND PROBLEMS

Three significant deviations were noted for this field effort, both having no impact on the evaluation or schedule. The first deviation involved a change in the laboratory chosen to perform the TPH-DRO analysis. These samples were originally scheduled to be extracted and analyzed by BDO. However since BDO is not a Navy certified laboratory for performing this analysis, Battelle contracted to Severn-Trent Laboratory (STL) in Los Angeles, California. STL is certified by the Navy Facilities Engineering Service Center (NFESC) and the State of California Environmental Laboratory Approval Program (ELAP) to perform analysis of samples for TPH-DRO. STL followed customary sample receipt and chain of custody procedures. This deviation is anticipated to have no impact on the results of the evaluation.

The second deviation consisted of a repositioning of several near-shore short core sample locations (SK-4, SK-6, SK-18, SK-22, and SK-24). After numerous attempts at station SK-18, the substrate was found to be too sandy to allow for successful sample collection. After visual inspection of the sites along the shore, it was agreed that stations SK-4, SK-6, SK-18, SK-22, and SK-24 would be moved slightly further west of the shoreline. All stations were moved less than 100 feet from their original positions, except for SK-24, which was moved approximately 120 feet west.

The last deviation concerns the collection of sediment samples from Side 1 of long Core B. It was necessary to collect the entire 5-cm horizon including sediment contacting the core liner walls in order to ensure that sufficient volume was preserved for TPH and PAH analyses. Because the core liners were steam cleaned prior to collection and all instruments used in the processing was cleaned with de-ionized water, there is no anticipated impact to the chemical results from these samples. However, equipment blanks were not collected from the instrumentation to ensure that no cross contamination had occurred.

Other than the difficulty in retaining cores where the material was very sandy, no equipment or procedural problems occurred in the field. For station SK-24 on November 9 and for all stations sampled on November 13, the backup DGPS unit was used as the primary DGPS was not receiving satellite data. Stormy weather conditions resulted in a 1.5-day extension of the field program as sampling was shortened on November 11 and cancelled on November 12.

Copies of the deviation documentation forms are provided in Appendix A.

## 4.0 SURVEY CHRONOLOGY

*Note:* All times are recorded as Pacific Standard Time

**Sample Collection: Monday, November 5, 2001**

0700-0900 Meet field staff at boathouse at Alameda Point – field orientation and safety meeting
0900-1130 Set up processing area; mobilize TEG vessel and equipment
1140-1220 Leave dock on vessel and check GPS at benchmark and reference locations
1220-1445 Long Core sample collection
1445-1800 Long Core sample processing at the boathouse

**Sample Collection: Tuesday, November 6, 2001**

0700-0830 Meet field staff at boathouse; safety meeting
0830-1510 GPS check; Long and Short Core sample collection

1030-1800 Long and Short Core sample processing at the boathouse

**Sample Collection: Wednesday, November 7, 2001**

0700-0815 Meet field staff at boathouse; safety meeting
0815-1435 GPS check; Short Core sample collection
0815-1700 Short Core sample processing at the boathouse

**Sample Collection: Thursday, November 8, 2001**

0700-0730 Meet field staff at boathouse; safety meeting
0730-1620 GPS check; Short Core sample collection
0730-1830 Short Core sample processing at the boathouse

**Sample Collection: Friday, November 9, 2001**

0700-0805 Meet field staff at boathouse; safety meeting
0805-1320 GPS check; Short Core sample collection completed 805-1700 Short Core sample processing at the boathouse completed

**Sample Collection: Saturday, November 10, 2001**

0700-0755 Meet field staff at boathouse; safety meeting
0755-1510 GPS check; Grab sample collection
1510-1700 Grab sample processing at the boathouse

**Sample Collection: Sunday, November 11, 2001**

0700-0735 Meet field staff at boathouse; safety meeting
0735-1210 GPS check; Grab sample collection
1210-1600 Grab sample processing at the boathouse

**Weather day: Monday, November 12, 2001 (no samples collected)**

**Sample Collection: Tuesday, November 13, 2001**

0700-0735 Meet field staff at boathouse; safety meeting
0735-1410 GPS check; Grab sample collection
1410-1630 Grab sample processing at the boathouse

**Sample Collection: Wednesday, November 14, 2001**

0700-0730 Meet field staff at boathouse; safety meeting
0730-1015 GPS check; Grab sample collection
1015-1530 Grab sample processing at the boathouse, demobilize equipment from boathouse

## 5.0 REFERENCES

Battelle, Entrix Inc. and Neptune & Co. 2001. *Skeet Range (IR Site 29) Evaluation Work Plan.* Prepared for U.S. Navy Southwest Division Naval Facilities Engineering Command. November 1, 2001.

# APPENDIX A

# Miscellaneous Documentation Forms (Deviations and Clarifications)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Nancy Kohn Date 11/08/01

The following information is (check one)
[ ] miscellaneous documentation
[✓] a deviation from Protocol, Work Plan or QA Plan (give title)
APPENDIX B, FIELD SAMPLING PLAN for the Skeet Range Evaluation Work Plan
[ ] a deviation from SOP No. _____

Description:
GUIDANCE ON RELOCATING STATIONS CLOSE TO SHORE THAT ARE TOO SANDY TO CORE: SK-6 WEST, SLIGHTLY NORTH
SK-18 WEST, SLIGHTLY SOUTH
SK-22 WEST, SLIGHTLY SOUTH
SK-24 WEST
SK-4 SOUTH, SLIGHTLY WEST.
WORK PLAN STATES THAT LOCATIONS WILL BE MOVED NO MORE THAN 3m from target, but it was not possible to collect/retain cores in sand from these target locations.

Impact on Project: These samples will probably be collected in deeper water than planned.

APPROVED BY: [signature] 11/15/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** _____

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Virginia Lau  Date October 9, 2001

The following information is (check one)
[ ] miscellaneous documentation
[X] a deviation from Protocol, Work Plan or QA Plan
Quality Assurance Project Plan for the Skeet Range (IR Site 29) Evaluation Work Plan
[ ] a deviation from SOP No. _____

Description: The total petroleum hydrocarbon in the diesel range (TPH-DRO) will be evaluated in this project for fingerprinting purposes to assist in determining the source of the polycyclic aromatic hydrocarbon (PAHs). The TPH-DRO samples were originally programmed to be extracted and analyzed by Battelle's Duxbury operations (BDO) since TPH is not a specific chemical of concern associated with the Skeet Range activities. The purpose of the TPH samples was to provide additional evidence for the PAH fingerprinting. However, due to concerns regarding potential litigation concerns and also, third party verification of results, it was determined that the analysis should be performed by a Navy certified laboratory approved for TPH analysis. Consequently, the TPH samples collected in the field will be sent directly to Severn-Trent Laboratory (STL) in Los Angeles to perform the analyses designated in the QAPP. The samples aliquots for TPH-DRO will be shipped to:

Mr. Rodel Martin (Custodian)
Severn-Trent Laboratory – Los Angeles
1721 S Grand Avenue
Santa Ana, CA 92705-4808
(714) 258-8610

As noted in the QAPP, the laboratory followed all customary sample receipt and chain of custody procedures. The analytical documentation for the STL is documented in attached errata form.

Impact on Project: There is no anticipated impact due to the use of STL to perform the TPH-DRO analysis. STL is certified by the NFESC and State of California Environmental Laboratory Approval Program (ELAP) to perform analysis of samples for TPH-DRO.

APPROVED BY: _____  10-10-01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number**: G477703
**Sequim Project Number**: _____

**Survey ID**: AAE
**Facility Name:** Alameda Point
**Project Title**: Skeet Range Evaluation

Entered by: Virginia Lau Date December 6, 2001

The following information is (check one)
[ ] miscellaneous documentation
[X] a deviation from Protocol, Work Plan or QA Plan (give title)
Quality Assurance Project Plan for the Skeet Range (IR Site 29) Evaluation Work Plan
[ ] a deviation from SOP No. _____

Description: Sediment samples were collected from Side 1 of the long Core B by scooping the entire 5 cm horizons including sediment in contact with the liner walls. It was necessary to collect the entire horizons to ensure that adequate volume was preserved for TPH and PAH analyses. Prior to collection, the core liners were steam cleaned and all instruments used in processing the samples were cleaned using de-ionized water.

The QAPP states: *Equipment blanks will not be collected since sediment subsampled for analytical procedures will not come in contact with field sampling devices.* However, equipment blanks were not collected from the instrumentation to ensure that no cross contamination had occurred.

Impact on Project: There is no anticipated impact to the project based on the collection of sediment along the core liners. All the instruments and the core liners were steam cleaned and rinsed with de-ionized water prior to collection. In addition, the collection protocol followed for Side 1 of the Core B is consistent with the methodology followed for Core A samples, which were also analyzed for TPHs and PAHs.

APPROVED BY: _____ December 10, 2001
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

00047

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: KATE BEARDSLEY Date 11/06/01

The following information is (check one)
[X] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:
CORE & FIELD SAMPLES AAE-002 & AAE-004 WERE COLLECTED LATE ON 11/05/01. INADEQUATE LIGHT PREVENTED LEAD SHOT & GRIT PROCESSING IMMEDIATELY FOLLOWING SAMPLING. AAE-002 WAS WASHED THROUGH SIEVES & THE SIEVES WITH MATERIAL WERE PLACED IN A COOLER WITH ICE OVER NIGHT. THEY WERE THEN ANALYZED & PLACED IN ZIPLOCKS THE FOLLOWING DAY. AAE-004 WAS CAPPED IN CORE LINER & PLACED IN A COOLER WITH ICE OVER NIGHT.

Impact on Project:
THIS SHOULD HAVE LITTLE IMPACT ON THE PROJECT SINCE THESE SAMPLES ARE BEING ANALYZED FOR LEAD SHOT & GRIT PARTICLES. THESE CHANGES SHOULD NOT IMPACT LATER ENUMERATION ANALYSES.

APPROVED BY: [signature] 11/14/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

00048

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: KATE BEARDSLEY Date 11/07/01

The following information is (check one)
[X] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:
CORE & FIELD SAMPLES AAE-007, AAE-017, AAE-009 & AAE-019 WERE COLLECTED IN THE AFTERNOON ON 11/06/01. THEY WERE HELD ~~IN A~~ KEPT UPRIGHT IN A COOLER WITH ICE INSIDE A LOCKED, SECURE ROOM. THESE SAMPLES WERE SIEVED FOR LEAD SHOT & GRIT ON 11/07/01 IN THE MORNING.

Impact on Project:
THIS SHOULD HAVE NO IMPACT ON THE PROJECT SINCE THESE CORES ARE NOT BEING ANALYZED FOR CHEMICAL CONTAMINANTS.

APPROVED BY: [signature] 11/14/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Nov 09 01 08:18a p.1

Battelle
. . . Putting Technology To Work

Battelle Duxbury Operations
397 Washington Street
Duxbury, MA 02332

**Date:** November 9, 2001

# *Fax*

| | |
|---|---|
| **To:** Virginia Lau | **From:** Patty White |
| **Fax No:** 510-562-6015 | **Fax No:** (781) 952-5322 |
| **Phone No:** 510-562-4086 | **Phone No:** (781) 952-5394 |
| **Company:** | **Total Pages:** 5 (Including Lead Sheet) |

**Comments:**
Virginia,

Here are the color descriptions for the sediment samples. I coded the PAH samples. Color codes are written on the attached COCs. The codes are either:

| | |
|---|---|
| 2.5Y4/1 | dark gray |
| 2.5Y3/1 | very dark gray |
| 2.5Y2.5/1 | black |

Hope everything is going well, and good luck with the rest of the field program!

Patty

11/14/01

Reviewed by [signature] Date 11/14/01

1800 00062

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

COOLER 1 of 1

## MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/06/01 Page 1 of 3

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Lau Phone (510) 562-4088

Lab Battelle
Address 397 Washington St Duxbury MA 02332
Attention Bob Lizotte (Jim Hatch - custodian)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: PAHs | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WB452 | AAE-102-B | 11/05/01 | Sediment | ✓ | | | | | | 1 | 2.5Y4/1 |
| WB453 | AAE-103-B | | | ✓ | | | | | | 1 | 2.5Y4/1 |
| WB454 | AAE-104-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB455 | AAE-105-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB456 | AAE-106-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB457 | AAE-107-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB458 | AAE-108-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB459 | AAE-109-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB460 | AAE-110-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB461 | AAE-111-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB462 | AAE-112-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB463 | AAE-113-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB464 | AAE-114-B | | | ✓ | | | | | | 1 | " |
| WB465 | AAE-115-B | | | ✓ | | | | | | 1 | " |
| WB466 | AAE-116-B | | | ✓ | | | | | | 1 | " |
| WB467 | AAE-117-B | | | ✓ | | | | | | 1 | " |
| WB468 | AAE-119-B | 11/06/01 | | ✓ | | | | | | 1 | 2.5Y4/1 |
| WB469 | AAE-120-B | | | ✓ | | | | | | 1 | 2.5Y3/1 |
| WB470 | AAE-121-B | | | ✓ | | | | | | 1 | |
| WB471 | AAE-122-B | | | ✓ | | | | | | 1 | |
| WB472 | AAE-123-B | | | ✓ | | | | | | 1 | |
| WB473 | AAE-124-B | | | ✓ | | | | | | 1 | 2.5Y2.5/1 |
| WB474 | AAE-125-B | | | ✓ | | | | | | 1 | 2.5Y2.5/1 |
| WB475 | AAE-126-B | | | ✓ | | | | | | 1 | See this page 2.5Y3/1 |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: LIZ VONCKX Date: 11/06/01 Time: 1700 | Signature: Date: Time: | Total No. of Containers: 20 total |
| Printed Name: LIZ VONCKX | Printed Name: | Tracking # 825074224261 |
| Company: BATTELLE | Company: | Shipment Method: FedEX |
| | | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | **DISTRIBUTION:** |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
| Printed Name: | Printed Name: | 2. Return pink copy to Project file or to project manager. |
| Company: | Company: | 3. Laboratory to return signed white copy to Battelle for project files |

11/14/01

Reviewed by [signature] Date 11/14/01

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Nancy Koh Date 11/10/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:

Sediment PAH, Clay Fragment, and Shot + Grit Samples were stored in cooler with ice in locked van at hotel. These samples were collected Friday 11/9/01 but cannot be shipped to Duxbury until Monday 11/12/01.
Temperature will be monitored at least once per day during storage in Alameda.

ERTCO Bottle thermometer Serial # 18587

Cooler 1 temperature at 0700 11/10/01 was 2°C. (NPN)
Cooler 1 temperature at 1525 11/10/01 was 2°C (NPN)
SAMPLES COLLECTED 11/10/01 WERE ADDED TO COOLER ~1630, FRESH ICE ADDED
Cooler 1 temperature at 0715 11/11/01 was cool; 1°C, moved thermometer off ice bag.

Impact on Project:

11/11/01 1630: Added one day fragment sample to cooler 1 at 1630. Temp was 3°C. Started Cooler 2 with shot/grit samples collected 11/11/01 (24 samples) placed on ice 1630.
11/12/01 0900: Cooler 1 + 2 are both 3°C (Thermometer SN 18587) samples from Cooler 2 were moved to cooler #one for packing with blue ice + shipping. Samples sealed in cooler 0940.

APPROVED BY: [signature] 11/14/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: NP Kohn Date 11/10/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:
SEE LB01-0086, CORE A (PHYSICAL) LOGBOOK, MISC. DOC
(LB01-0086 page 49) PAGE ~~47~~ 49 (NP 11/10/01) for montoring storage condition of SEDIMENT PAH samples collected on Friday 11/09/01 and HELD UNTIL MONDAY 11/12/01 to SHIP.

Impact on Project: N/A

APPROVED BY: [signature] 11/14/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Nancy Kohn Date 11/10/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No. _____

Description:
Two large pieces of clay targets were saved from the bottom of Core A, 22 cm depth. Samples were assigned Sample ID AAE-594-B/C (collected 11/09/01 at 1225 from 20-25 cm).
SAMPLING INFORMATION IS ON PAGE 59 OF THIS LOG BOOK

Impact on Project: Large pieces of clay target provides a quantity of source material for PAH fingerprinting.

APPROVED BY: [signature] 11/15/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Nancy Koh Date 11/10/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:

Monitoring of Sample Storage conditions for chemistry (PAH, clay target, shot+grit) samples collected on 11/09/01 & 11/10/01 is documented in the CORE A Preparation Log Book LB01-0086, pg 49. Samples were stored in a cooler with ice, temperature monitored at least once daily. Cooler was locked in van. 11/10/01.

Impact on Project: N/A

APPROVED BY: 11/15/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Nancy Kohn Date 11/13/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:
Long Core B, geologic descriptions, pages 13, 15, and 17. More detailed descriptions of colors were added 11/13/01 based on information received from (geologist) Patty White. Patty White compared color of sediment samples received at Duxbury (5-cm increments from cores) to Munsell Color chart to provide color descriptions, which she noted on a copy of the custody form. Copies of the pages received from Patty White are included in this log book, pages 61-62.

Impact on Project: N/A - better color description of sediment in long cores.

APPROVED BY: [signature] 11/14/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

00140

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: NP Kohr Date 11/13/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No.

Description:
Samples Collected on 11/13/01 (2 clay fragment samples, 28 shot + grit samples) were stored in a cooler with ice, cooler was locked in van.
Temperature at 1620 was 4°C (11/13/01) Thermometer S/N 18587
at 0700 11/14/01 temp was 1.5°C
at 1130 11/14/01 temp was 1.0°C - All samples from 11/14/01 Added.

Impact on Project: None Expected

APPROVED BY: [signature] 11/15/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** 42109

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: NPKoh Date 11/13/01

The following information is (check one)
[✓] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

[ ] a deviation from SOP No. _____

Description:
FROM SATURDAY NOV 10 on, LIZ VONCKX WILL ACT AS SITE HEALTH AND SAFETY OFFICER INSTEAD OF (REPLACING) LEONARD DAVIS.

Impact on Project: None expected.

APPROVED BY: [signature] 11/15/01
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# DOCUMENTATION FORM

**BATTELLE**
**Duxbury Project Number:** G477703
**Sequim Project Number:** _____

**Survey ID:** AAE
**Facility Name:** Alameda Point
**Project Title:** Skeet Range Evaluation

Entered by: Virginia Lau Date November 26, 2001

The following information is (check one)
[X] miscellaneous documentation
[ ] a deviation from Protocol, Work Plan or QA Plan (give title)

_____

[ ] a deviation from SOP No. _____

Description: The containers used for the hold the samples designated for polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH) analysis were changed from **8 oz amber jars** to **4 oz glass jars**. The smaller jars were better suited to contain the 50 to 60 grams of sediments with minimal head space. All the jars were certified wide-mouth glass jars with Teflon lined lids. Amber glass was originally selected in order to limit degradation of the sample quality in the field. However, the samples once processed were placed into the coolers for shipment away from direct light.

Impact on Project: There is no anticipated impact to the project based on the use of 4 oz glass jars for sample collection. The smaller size jars eliminate excess head space and also allows more samples to be sent per shipment. The samples spent minimal time in direct light and were placed in the cooler immediately after processing which eliminated the necessity of using amber jars.

APPROVED BY: _____ November 26, 2001
Date

[1] Planned change (12 h prior notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Minor Deviations (4 h notification): Don Gunster (Virginia Lau), Rosanna Buhl (Nars Ancog)
Major Deviations: (4 h notification): Don Gunster (Virginia Lau, Michael Bloom), Rosanna Buhl (Nars Ancog)

# APPENDIX B

# Sample Custody Forms

COOLER 1 OF 1

# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/06/01 Page 1 of 2

11/6/01

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703

Project Name ALAMEDA PT SKEET RANGE EVAL

Project Manager VIRGINIA LAU Phone 510-562-4006

Lab Battelle MSL
Address 1529 W. Sequim Bay Rd. Sequim WA 98382
Attention Betsy Bauwer (Custodian Carolyn Sustick)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: VOA/PHOTO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-[illegible]-D | 11/05/01 | Sediment | ✓ | | | | | | 1 | |
| | AAE-[illegible]-D | | | ✓ | | | | | | | |
| | AAE-70-D | | | ✓ | | | | | | | |
| | AAE-73-D | | | ✓ | | | | | | | |
| | AAE-74-D | | | ✓ | | | | | | | |
| | AAE-[illegible]-D | | | ✓ | | | | | | | |
| | AAE-76-D | | | ✓ | | | | | | | |
| | AAE-72-D | | | ✓ | | | | | | | |
| | AAE-77-D | | | ✓ | | | | | | | |
| | AAE-[illegible]-D | | | ✓ | | | | | | | |
| | AAE-[illegible]-D | | | ✓ | | | | | | | |
| | AAE-74-D | | | ✓ | | | | | | | |
| | AAE-77-D | | | ✓ | | | | | | | |
| | AAE-77-D | | | ✓ | | | | | | | |
| | AAE-70-D | | | ✓ | | | | | | | |
| | AAE-76-D | | | ✓ | | | | | | | |
| | AAE-72-D | | | ✓ | | | | | | | |
| | AAE-77-D | | | ✓ | | | | | | | |
| | AAE-75-D | | | ✓ | | | | | | | |
| | AAE-75-D | | | ✓ | | | | | | | |
| | AAE-77-D | | | ✓ | | | | | | | |
| | AAE-71-D | ↓ | | ✓ | | | | | | | |
| | AAE-75-D | 11/06/01 | | ✓ | | | | | | | |
| | AAE-572-BK | ↓ | ↓ | ✓ | | | | | | ↓ | SEE NEXT PAGE |

Total No. of Containers

Relinquished by: see next page

Signature Date Time

Printed Name

Company

Received by:

Signature Date Time

Printed Name

Company

Shipment Method: FED. EX

Special Requirements or Comments:
Tracking number for Fed Ex:
825074224272

Relinquished by:

Signature Date Time

Printed Name

Company

Received by:

Signature Date Time

Printed Name

Company

DISTRIBUTION:

1. Provide white and yellow copies to the Laboratory
2. Return pink copy to Project file or to project manager.
3. Laboratory to return signed white copy to Battelle for project files

(COOLER 1 of 1)

# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/06/01 Page 2 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G-477703
Project Name ALAMEDA PT SKEET RANGE QUAL
Project Manager VIRGINIA LAU Phone 510562-4078

Lab (see first page)
Address
Attention

Testing Parameters: ADMIN ORGS

| Lab No. | Sample No. | Collection Date | Matrix | ADMIN ORGS | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-70-D | 11/06/01 | Sediment | ✓ | | | | | | 1 | |
| | AAE-72-D | | | ✓ | | | | | | | |
| | AAE-97-D | | | ✓ | | | | | | | |
| | AAE-98-D | | | ✓ | | | | | | | |
| | AAE-573-B/C | | | ✓ | | | | | | | |
| | AAE-100-D | | | ✓ | | | | | | | |
| | AAE-571+B/C | | | ✓ | | | | | | | |
| | AAE-71-D | | | ✓ | | | | | | | |
| | AAE-73-D | ✓ | ✓ | ✓ | | | | | | ✓ | |

Relinquished by:
Signature [signature] Date 11/7/01 Time 1545
Printed Name KATE BRADSHAW
Company Battelle

Received by:
Signature Date Time
Printed Name
Company

Total No. of Containers: 33

Shipment Method: FED EX

Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

DISTRIBUTION:
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COOLER 1 OF 1

# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/06/01 Page 1 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name ALAMEDA PT SEDIMENT CHAR
Project Manager VIRGINIA LAU Phone 510562 4088

Lab STL - LA
Address 1721 S. GRAND AVE SANTA ANA CA 92705
Attention SABINA SUDDRO

| Lab No. | Sample No. | Collection Date | Matrix | TPH (EPA 8015) | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAG-102-C | 11/05/01 | SEDIMENT | ✓ | | | | | | 1 | |
| | AAG-103-C | | | ✓ | | | | | | 1 | |
| | AAG-104-C | | | ✓ | | | | | | 1 | |
| | AAG-105-C | | | ✓ | | | | | | 1 | |
| | AAG-106-C | | | ✓ | | | | | | 1 | |
| | AAG-107-C | | | ✓ | | | | | | 1 | |
| | AAG-108-C | | | ✓ | | | | | | 1 | |
| | AAG-109-C | | | ✓ | | | | | | 1 | |
| | AAG-110-C | | | ✓ | | | | | | 1 | |
| | AAG-111-C | | | ✓ | | | | | | 1 | |
| | AAG-112-C | | | ✓ | | | | | | 1 | |
| | AAG-113-C | | | ✓ | | | | | | 1 | |
| | AAG-114-C | | | ✓ | | | | | | 1 | |
| | AAG-115-C | | | ✓ | | | | | | 1 | |
| | AAG-116-C | | | ✓ | | | | | | 1 | |
| | AAG-117-C | | | ✓ | | | | | | 1 | |
| | AAG-~~118~~ 119-C | 11/06/01 | | ✓ | | | | | | 1 | |
| | AAG-120-C | | | ✓ | | | | | | 1 | |
| | AAG-121-C | | | ✓ | | | | | | 1 | |
| | AAG-122-C | | | ✓ | | | | | | 1 | |
| | AAG-123-C | | | ✓ | | | | | | 1 | |
| | AAG-124-C | | | ✓ | | | | | | 1 | |
| | AAG-125-C | | | ✓ | | | | | | 1 | |
| | AAG-126-C | | | ✓ | | | | | | 1 | THIS PAGE |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: Kara Bardsley Date: 11/07/01 Time: 1700 | Signature: Date: Time: | 24 THIS PAGE / 40 TOTAL Total No. of Containers |
| Printed Name: KARA BARDSLEY | Printed Name: | Shipment Method: FED EX |
| Company: BATTELLE | Company: | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | **DISTRIBUTION:** |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
| Printed Name: | Printed Name: | 2. Return pink copy to Project file or to project manager. |
| Company: | Company: | 3. Laboratory to return signed white copy to Battelle for project files |

COOLER 1 OF 1

# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/06/01 Page 2 of 2

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name ALASKA PETROLEUM MANAGEMENT EVAL
Project Manager VIRGINIA LAU Phone 510 562 4096

Lab STL - LA
Address 1721 S. Grand Ave Santa Ana CA 92705
Attention SABINE JUNGO

| Lab No. | Sample No. | Collection Date | Matrix | TPH DRO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-127-C | 11/06/01 | SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-128-C | | | ✓ | | | | | | 1 | |
| | AAE-129-C | | | ✓ | | | | | | 1 | |
| | AAE-130-C | | | ✓ | | | | | | 1 | |
| | AAE-131-C | | | ✓ | | | | | | 1 | |
| | AAE-132-C | | | ✓ | | | | | | 1 | |
| | AAE-133-C | | | ✓ | | | | | | 1 | |
| | AAE-134-C | | | ✓ | | | | | | 1 | |
| | AAE-135-C | | | ✓ | | | | | | 1 | |
| | AAE-136-C | | | ✓ | | | | | | 1 | |
| | AAE-137-C | | | ✓ | | | | | | 1 | |
| | AAE-138-C | | | ✓ | | | | | | 1 | |
| | AAE-139-C | | | ✓ | | | | | | 1 | |
| | AAE-140-C | | | ✓ | | | | | | 1 | |
| | AAE-141-C | | | ✓ | | | | | | 1 | |
| | AAE-142-C | | | ✓ | | | | | | 1 | |

Continued on the 105 page

40 total Total No. of Containers

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature: [illegible] | 11/06/01 | 1650 | Signature | | |
| Printed Name: KATE BRADSHAW | | | Printed Name | | |
| Company: BATTELLE | | | Company | | |

Shipment Method:

Special Requirements or Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature | | | Signature | | |
| Printed Name | | | Printed Name | | |
| Company | | | Company | | |

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BC 1800-102 (04/01)

COOLER 1 of 1

**MSL-A-001 & MSL-A-002**

# SAMPLE CUSTODY RECORD

Date 11/06/01 Page 1 of 3

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Lau Phone (510) 562-4088

Lab Battelle
Address 377 Washington St Duxbury MA 02332
Attention Bob Lizotte (Jim Hatch - auditor)

| Lab No. | Sample No. | Collection Date | Matrix | PAHs | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-102-B | 11/05/01 | Sediment | ✓ | | | | | | 1 | |
| | AAE-103-B | | | ✓ | | | | | | 1 | |
| | AAE-104-B | | | ✓ | | | | | | 1 | |
| | AAE-105-B | | | ✓ | | | | | | 1 | |
| | AAE-106-B | | | ✓ | | | | | | 1 | |
| | AAE-107-B | | | ✓ | | | | | | 1 | |
| | AAE-108-B | | | ✓ | | | | | | 1 | |
| | AAE-109-B | | | ✓ | | | | | | 1 | |
| | AAE-110-B | | | ✓ | | | | | | 1 | |
| | AAE-111-B | | | ✓ | | | | | | 1 | |
| | AAE-112-B | | | ✓ | | | | | | 1 | |
| | AAE-113-B | | | ✓ | | | | | | 1 | |
| | AAE-114-B | | | ✓ | | | | | | 1 | |
| | AAE-115-B | | | ✓ | | | | | | 1 | |
| | AAE-116-B | | | ✓ | | | | | | 1 | |
| | AAE-117-B | | | ✓ | | | | | | 1 | |
| | AAE-119-B | 11/06/01 | | ✓ | | | | | | 1 | |
| | AAE-120-B | | | ✓ | | | | | | 1 | |
| | AAE-121-B | | | ✓ | | | | | | 1 | |
| | AAE-122-B | | | ✓ | | | | | | 1 | |
| | AAE-123-B | | | ✓ | | | | | | 1 | |
| | AAE-124-B | | | ✓ | | | | | | 1 | |
| | AAE-125-B | | | ✓ | | | | | | 1 | |
| | AAE-126-B | | | ✓ | | | | | | 1 | |

24 this page
40 total Total No. of Containers

Relinquished by: L. Vonckx Signature, 11/06/01 Date, 1700 Time
Printed Name: LIZ VONCKX
Company: BATTELLE

Received by: Signature, Date, Time
Printed Name
Company

Tracking # 825074224261
Shipment Method: FedEX
Special Requirements or Comments:

Relinquished by: Signature, Date, Time
Printed Name
Company

Received by: Signature, Date, Time
Printed Name
Company

DISTRIBUTION:
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MSL-A-001 & MSL-A-002

COOLER 1 of 1

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

# AMPLE CUSTODY RECORD

Date 11/06/01 Page 2 of 3

oject No. G477703
Project Name Alameda Point Skeet Range Evaluation
oject Manager Virginia Lau Phone (510)562-4...

Lab Battelle
Address 397 Washington St. Duxbury MA 02332
Attention Bob Lizotte (Jim Hatch - custodian)

| Lab No. | Sample No. | Collection Date | Matrix | PAH | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-128-B | 11/06/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-129-B | | | ✓ | | | | | | 1 | |
| | AAE-130-B | | | ✓ | | | | | | 1 | |
| | AAE-127-B | | | ✓ | | | | | | 1 | |
| | AAE-131-B | | | ✓ | | | | | | 1 | |
| | AAE-132-B | | | ✓ | | | | | | 1 | |
| | AAE-133-B | | | ✓ | | | | | | 1 | |
| | AAE-134-B | | | ✓ | | | | | | 1 | |
| | AAE-135-B | | | ✓ | | | | | | 1 | |
| | AAE-136-B | | | ✓ | | | | | | 1 | |
| | AAE-137-B | | | ✓ | | | | | | 1 | |
| | AAE-138-B | | | ✓ | | | | | | 1 | |
| | AAE-139-B | | | ✓ | | | | | | 1 | |
| | AAE-140-B | | | ✓ | | | | | | 1 | |
| | AAE-141-B | | | ✓ | | | | | | 1 | |
| | AAE-142-B | | | ✓ | | | | | | 1 | |

Relinquished by: G W Vonckx 11/06/01 1700
Signature LIZ VONCKX Date Time
Printed Name BATTELLE
Company

Received by:
Signature Date Time
Printed Name
Company

No this page
41 total Total No. of Containers

Shipment Method: Fed Ex

Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

DISTRIBUTION:

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MSL-A-001 & MSL-A-002 CODLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/06/01 Page 3 of 3

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager VIRGINIA LAU Phone 510 5624086

Lab BATTELLE DUXBURY
Address 397 Washington St DUXBURY MA 02332
Attention BUBLIZOTTE Jim

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: SHOT RANGE ENVIRONMENTAL | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-246-A | 11/06/01 | Material left on sieves | ✓ | | | | | | 1 | |
| | AAE-248-A | | | ✓ | | | | | | 1 | |
| | AAE-242-A | | | ✓ | | | | | | 1 | |
| | AAE-244-A | | | ✓ | | | | | | 1 | |
| | AAE-241-A | | | ✓ | | | | | | 1 | |
| | AAE-243-A | | | ✓ | | | | | | 1 | |
| | AAE-245-A | | | ✓ | | | | | | 1 | |
| | AAE-251-A | | | ✓ | | | | | | 1 | |
| | AAE-250-A | | | ✓ | | | | | | 1 | |
| | AAE-252-A | | | ✓ | | | | | | 1 | |
| | AAE-253-A | | | ✓ | | | | | | 1 | |
| | AAE-254-A | | | ✓ | | | | | | 1 | |
| | AAE-247-A | | | ✓ | | | | | | 1 | |
| | AAE-249-A | | | ✓ | | | | | | 1 | |
| | AAE-256-A | | | ✓ | | | | | | 1 | |
| | AAE-255-A | | | ✓ | | | | | | 1 | |
| | AAE-261-A | | | ✓ | | | | | | 1 | |
| | AAE-259-A | | | ✓ | | | | | | 1 | |
| | AAE-260-A | | | ✓ | | | | | | 1 | |
| | AAE-258-A | | | ✓ | | | | | | 1 | |
| | AAE-257-A | ✓ | ✓ | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: Liz Vonckx Date: 11/6/01 Time: 1700 | Signature: Date: Time: | 21 this page Total No. of Containers |
| Printed Name: LIZ VONCKX | Printed Name: | Shipment Method: FED EX |
| Company: BATTELLE | Company: | Special Requirements or Comments: |
| Relinquished by: | Received by: | DISTRIBUTION: |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
| Printed Name: | Printed Name: | 2. Return pink copy to Project file or to project manager. |
| Company: | Company: | 3. Laboratory to return signed white copy to Battelle for project files |

MSL-A-001 & MSL-A-002 COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/07/01 Page 1 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Alameda Point Steel Berg Investigation
Project Manager VIRGINIA LAU Phone 510 9624080

Lab SEVERN TRENT
Address 1721 S. Grand Avenue SANTA ANA, CA 92705
Attention SABINA SUDOKO

| Lab No. | Sample No. | Collection Date | Matrix | TPH-DRO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-158-C | 11/07/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-159-C | | | ✓ | | | | | | 1 | |
| | AAE-157-C | | | ✓ | | | | | | 1 | |
| | AAE-160-C | | | ✓ | | | | | | 1 | |
| | AAE-143-C | | | ✓ | | | | | | 1 | |
| | AAE-156-C | | | ✓ | | | | | | 1 | |
| | AAE-144-C | | | ✓ | | | | | | 1 | |
| | AAE-155-C | | | ✓ | | | | | | 1 | |
| | AAE-153-C | | | ✓ | | | | | | 1 | |
| | AAE-152-C | | | ✓ | | | | | | 1 | |
| | AAE-154-C | | | ✓ | | | | | | 1 | |
| | AAE-149-C | | | ✓ | | | | | | 1 | |
| | AAE-147-C | | | ✓ | | | | | | 1 | |
| | AAE-148-C | | | ✓ | | | | | | 1 | |
| | AAE-151-C | | | ✓ | | | | | | 1 | |
| | AAE-161-C | | | ✓ | | | | | | 1 | |
| | AAE-150-C | | | ✓ | | | | | | 1 | |
| | AAE-145-C | | | ✓ | | | | | | 1 | |
| | AAE-146-C | | | ✓ | | | | | | 1 | |
| | AAE-118-C | | | ✓ | | | | | | 1 | |
| | AAE-162-C | | | ✓ | | | | | | 1 | |
| | AAE-163-C | | | ✓ | | | | | | 1 | |
| | AAE-164-C | | | ✓ | | | | | | 1 | |
| | AAE-165-C | | | ✓ | | | | | | 1 | |

24 HR Surcharge
32 total Total No. of Containers

Relinquished by:
Signature [signature] Date 11/7/01 Time 1640
Printed Name NANCY KOHN
Company BATTELLE

Received by:
Signature Date Time
Printed Name
Company

Shipment Method: FED EX

Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

DISTRIBUTION:
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MSL-A-001 & MSL-A-002 COOLER 1 OF 1

SAMPLE CUSTODY RECORD Date 11/07/01 Page 2 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 64777703
Project Name Alameda Point Skeet Range Evaluation
Project Manager VIRGINIA LAU Phone 510 562 4080

Lab SEVERN-TRENT
Address 1721 S. Grand Avenue SANTA ANA, CA 92705
Attention SABINA SUDOKO

| Lab No. | Sample No. | Collection Date | Matrix | TPH-DRO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-166-C | 11/07/01 | Marine Sediment | ✓ | | | | | | 1 | |
| | AAE-167-C | 11/07/01 | | ✓ | | | | | | 1 | |
| | AAE-168-C | | | ✓ | | | | | | 1 | |
| | AAE-169-C | | | ✓ | | | | | | 1 | |
| | AAE-170-C | | | ✓ | | | | | | 1 | |
| | AAE-171-C | | | ✓ | | | | | | 1 | |
| | AAE-172-C | | | ✓ | | | | | | 1 | |
| | AAE-173-C | | | ✓ | | | | | | 1 | |

Testing Parameters

Relinquished by:
Signature [signature] Date 11/7/01 Time 1640
Printed Name NAMU KOHN
Company BATTELLE

Received by:
Signature Date Time
Printed Name
Company

8 thispace
32 total Total No. of Containers
Shipment Method: FEDEX
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

DISTRIBUTION:
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PO 1800-103 (04/01)

MSL-A-001 & MSL-A-002

COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/07/01 Page 1 of 4

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 9477703
Project Name ALAMEDA POINT SEDIMENT RANGE EVALUATION
Project Manager VIRGINIA LAU Phone 510 562-4080

Lab BATTELLE DUXBURY
Address 397 WASHINGTON ST DUXBURY, MA 02332
Attention BOB LIZOTTE, (JIM HATCH, CUSTODIAN)

| Lab No. | Sample No. | Collection Date | Matrix | PAHs | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-152-B | 11/07/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-157-B | | | ✓ | | | | | | 1 | |
| | AAE-161-B | | | ✓ | | | | | | 1 | |
| | AAE-151-B | | | ✓ | | | | | | 1 | |
| | AAE-149-B | | | ✓ | | | | | | 1 | |
| | AAE-155-B | | | ✓ | | | | | | 1 | |
| | AAE-156-B | | | ✓ | | | | | | 1 | |
| | AAE-147-B | | | ✓ | | | | | | 1 | |
| | AAE-159-B | | | ✓ | | | | | | 1 | |
| | AAE-158-B | | | ✓ | | | | | | 1 | |
| | AAE-153-B | | | ✓ | | | | | | 1 | |
| | AAE-154-B | | | ✓ | | | | | | 1 | |
| | AAE-148-B | | | ✓ | | | | | | 1 | |
| | AAE-150-B | | | ✓ | | | | | | 1 | |
| | AAE-146-B | | | ✓ | | | | | | 1 | |
| | AAE-160-B | | | ✓ | | | | | | 1 | |
| | AAE-145-B | | | ✓ | | | | | | 1 | |
| | AAE-144-B | | | ✓ | | | | | | 1 | |
| | AAE-118-B | | | ✓ | | | | | | 1 | |
| | AAE-143-B | | | ✓ | | | | | | 1 | |
| | AAE-163-B | | | ✓ | | | | | | 1 | |
| | AAE-162-B | | | ✓ | | | | | | 1 | |
| | AAE-165-B | | | ✓ | | | | | | 1 | |
| | AAE-164-B | | | ✓ | | | | | | 1 | |

24 PAH (88 SIM/PAH total)
32 PAH total

Total No. of Containers

Shipment Method: FEDEX

Special Requirements or Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature: LZ Vonckx | 11/7/01 | 1700 | Signature | | |
| Printed Name: LIZ VONCKX | | | Printed Name | | |
| Company: Battelle | | | Company | | |

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature | | | Signature | | |
| Printed Name | | | Printed Name | | |
| Company | | | Company | | |

DISTRIBUTION:

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3. Laboratory to return signed white copy to Battelle for project files

COOLER 1 of 1

**ISL-A-001 & MSL-A-002**

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

## AMPLE CUSTODY RECORD

Date 11/07/01 Page 2 of 4

oject No. G477703

Project Name Alameda Point Skeet Range Evaluation

oject Manager VIRGINIA LAU Phone 510-524-4080

Lab BATTELLE DUXBURY
Address 397 Washington St Duxbury, MA 02332
Attention BOB LIZOTTE – Gim Patch, Custodian

| Lab No. | Sample No. | Collection Date | Matrix | PAHs | SHOT & GRIT | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W8537 | AAE-169-B | 11/07/01 | Marine Sediment | ✓ | | | | | | 1 | |
| W8538 | AAE-168-B | | | ✓ | | | | | | 1 | |
| W8539 | AAE-167-B | | | ✓ | | | | | | 1 | |
| W8540 | AAE-166-B | | | ✓ | | | | | | 1 | |
| W8541 | AAE-170-B | | | ✓ | | | | | | 1 | |
| W8542 | AAE-171-B | | | ✓ | | | | | | 1 | |
| W8543 | AAE-172-B | | | ✓ | | | | | | 1 | |
| W8544 | AAE-173-B | | | ✓ | | | | | | 1 | |
| W8545 | AAE-273-A | | | | ✓ | | | | | 1 | |
| W8546 | AAE-272-A | | | | ✓ | | | | | 1 | |
| W8547 | AAE-271-A | | | | ✓ | | | | | 1 | |
| W8548 | AAE-270-A | | | | ✓ | | | | | 1 | |
| W8549 | AAE-277-A | | | | ✓ | | | | | 1 | |
| W8550 | AAE-276-A | | | | ✓ | | | | | 1 | |
| W8551 | AAE-275-A | | | | ✓ | | | | | 1 | |
| W8552 | AAE-274-A | | | | ✓ | | | | | 1 | |
| W8553 | AAE-311-A | | | | ✓ | | | | | 1 | |
| W8554 | AAE-312-A | | | | ✓ | | | | | 1 | |
| W8555 | AAE-314-A | | | | ✓ | | | | | 1 | |
| W8556 | AAE-313-A | | | | ✓ | | | | | 1 | |
| W8557 | AAE-315-A | | | | ✓ | | | | | 1 | |
| W8558 | AAE-316-A | | | | ✓ | | | | | 1 | |
| W8559 | AAE-317-A | | | | ✓ | | | | | 1 | |
| W8560 | AAE-318-A | | | | ✓ | | | | | 1 | |

8 PAH this page (32 PAH total)
16 shot/grit this page (88 shot grit total)

Total No. of Containers

Shipment Method: Fed Ex

Special Requirements or Comments:

| Relinquished by: | Signature | Date | Time | Received by: | Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| | E W Vonckx | 11/7/01 | 1700 | | [illegible] | 11/8/01 | 10:00 AM |
| Printed Name | LIZ VONCKX | | | Printed Name | JAMES D. HAZEN | | |
| Company | Battelle | | | Company | BATTELLE | | |

| Relinquished by: | Signature | Date | Time | Received by: | Signature | Date | Time |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Printed Name | | | | Printed Name | | | |
| Company | | | | Company | | | |

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MSL-A-001 & MSL-A-002

COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/07/01 Page 3 (K3) of 4

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name ALAMEDA PT. SKEET RANGE SVAC
Project Manager VIRGINIA LAU Phone 510 562-4078

Lab PATTELLI DUXBURY
Address 397 WASHINGTON ST DUXBURY MA 02332
Attention BOB GIZIOTIS SIM HATCH, CUSTODIAN

| Lab No. | Sample No. | Collection Date | Matrix | SHOT/GRIT | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-310-A | 11/07/01 | SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-309-A | | | ✓ | | | | | | 1 | |
| | AAE-308-A | | | ✓ | | | | | | 1 | |
| | AAE-307-A | | | ✓ | | | | | | 1 | |
| | AAE-305-A | | | ✓ | | | | | | 1 | |
| | AAE-306-A | | | ✓ | | | | | | 1 | |
| | AAE-303-A | | | ✓ | | | | | | 1 | |
| | AAE-304-A | | | ✓ | | | | | | 1 | |
| | AAE-291-A | | | ✓ | | | | | | 1 | |
| | AAE-290-A | | | ✓ | | | | | | 1 | |
| | AAE-288-A | | | ✓ | | | | | | 1 | |
| | AAE-289-A | | | ✓ | | | | | | 1 | |
| | AAE-293-A | | | ✓ | | | | | | 1 | |
| | AAE-292-A | | | ✓ | | | | | | 1 | |
| | AAE-284-A | | | ✓ | | | | | | 1 | |
| | AAE-287-A | | | ✓ | | | | | | 1 | |
| | AAE-280-A | | | ✓ | | | | | | 1 | |
| | AAE-283-A | | | ✓ | | | | | | 1 | |
| | AAE-282-A | | | ✓ | | | | | | 1 | |
| | AAE-279-A | | | ✓ | | | | | | 1 | |
| | AAE-281-A | | | ✓ | | | | | | 1 | |
| | AAE-278-A | | | ✓ | | | | | | 1 | |
| | AAE-286-A | | | ✓ | | | | | | 1 | |
| | AAE-285-A | | | ✓ | | | | | | 1 | |

(32 PAH total)
24 shot + grit this page
8 shot total

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

Total No. of Containers
Shipment Method: FED EX
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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COOLER 1 of 1

MSL-A-001 & MSL-A-002

# AMPLE CUSTODY RECORD

Date 11/07/01 Page 4 of 4

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager VIRGINIA LAU Phone 510 562 4080

Lab BATTELLE DUXBURY
Address 397 Washington St Duxbury MA 02332
Attention Bob Lizotte (Jim Hatch - cc's both)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: SKEET TEST | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-325-A | 11/07/01 | Material from Skeet | ✓ | | | | | | 1 | |
| | AAE-326-A | | | ✓ | | | | | | 1 | |
| | AAE-323-A | | | ✓ | | | | | | 1 | |
| | AAE-324-A | | | ✓ | | | | | | 1 | |
| | AAE-322-A | | | ✓ | | | | | | 1 | |
| | AAE-321-A | | | ✓ | | | | | | 1 | |
| | AAE-319-A | | | ✓ | | | | | | 1 | |
| | AAE-320-A | | | ✓ | | | | | | 1 | |
| | AAE-268-A | | | ✓ | | | | | | 1 | |
| | AAE-269-A | | | ✓ | | | | | | 1 | |
| | AAE-265-A | | | ✓ | | | | | | 1 | |
| | AAE-264-A | | | ✓ | | | | | | 1 | |
| | AAE-266-A | | | ✓ | | | | | | 1 | |
| | AAE-267-A | | | ✓ | | | | | | 1 | |
| | AAE-262-A | | | ✓ | | | | | | 1 | |
| | AAE-263-A | | | ✓ | | | | | | 1 | |
| | AAE-294-A | | | ✓ | | | | | | 1 | |
| | AAE-295-A | | | ✓ | | | | | | 1 | |
| | AAE-297-A | | | ✓ | | | | | | 1 | |
| | AAE-296-A | | | ✓ | | | | | | 1 | |
| | AAE-298-A | | | ✓ | | | | | | 1 | |
| | AAE-299-A | | | ✓ | | | | | | 1 | |
| | AAE-300-A | | | ✓ | | | | | | 1 | |
| | AAE-301-A | | | ✓ | | | | | | 1 | (32 PAH total) and sent on other page |

Relinquished by: GW Vonckx 11/7/01 1700
Signature Date Time
LIZ VONCKX
Printed Name
Battelle
Company

Received by:
Signature Date Time
Printed Name
Company

24 shot and sent on other page
Total No. of Containers
Shipment Method: Fed EX
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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MSL-A-001 & MSL-A-002 COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/08/01 Page 1 of 5

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 647703
Project Name ALAMEDA PT SKEET RANGE GVAL
Project Manager VIRGINIA LAU Phone 510 562 4096

Lab BATTELLE DURHAM
Address 397 WASHINGTON ST DUXBURY MA 02332
Attention BOB LIZOTTE (SIM HATCH: COSEWIC)

| Lab No. | Sample No. | Collection Date | Matrix | PAH | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-174-B | 11/08/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-175-B | | | ✓ | | | | | | 1 | |
| | AAE-176-B | | | ✓ | | | | | | 1 | |
| | AAE-177-B | | | ✓ | | | | | | 1 | |
| | AAE-178-B | | | ✓ | | | | | | 1 | |
| | AAE-179-B | | | ✓ | | | | | | 1 | |
| | AAE-180-B | | | ✓ | | | | | | 1 | |
| | AAE-181-B | | | ✓ | | | | | | 1 | |
| | AAE-182-B | | | ✓ | | | | | | 1 | |
| | AAE-183-B | | | ✓ | | | | | | 1 | |
| | AAE-184-B | | | ✓ | | | | | | 1 | |
| | AAE-185-B | | | ✓ | | | | | | 1 | |
| | AAE-186-B | | | ✓ | | | | | | 1 | |
| | AAE-187-B | | | ✓ | | | | | | 1 | |
| | AAE-188-B | | | ✓ | | | | | | 1 | |
| | AAE-189-B | | | ✓ | | | | | | 1 | |
| | AAE-190-B | | | ✓ | | | | | | 1 | |
| | AAE-191-B | | | ✓ | | | | | | 1 | |
| | AAE-192-B | | | ✓ | | | | | | 1 | |
| | AAE-193-B | | | ✓ | | | | | | 1 | |
| | AAE-194-B | | | ✓ | | | | | | 1 | |
| | AAE-195-B | | | ✓ | | | | | | 1 | |
| | AAE-196-B | | | ✓ | | | | | | 1 | |
| | AAE-197-B | | | ✓ | | | | | | 1 | |

PAH 24 + tissues
PAH 44 PAH TOTAL

9 (Sticky fragment total, 11/8/01 48 shot, grit total)

Total No. of Containers

Shipment Method: FED EX

Special Requirements or Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature: E. Vanckx | 11/8/01 | 1700 | Signature | | |
| Printed Name: LIZ VANCKX | | | Printed Name | | |
| Company: Battelle | | | Company | | |

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature | | | Signature | | |
| Printed Name | | | Printed Name | | |
| Company | | | Company | | |

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BC 1800-192 (04/01)

MSL-A-001 & MSL-A-002 COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/08/01 Page 2 of 5

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G-4777023
Project Name ALAMEDA PT SEKUT RANGE 910
Project Manager VIRGINIA LAU Phone 562 4086

Lab BATTELLE DUXBURY
Address 397 WASHINGTON ST DUXBURY MA 02332
Attention BOB LIZOTTE (JILL HARTH: CUSTODIAN)

| Lab No. | Sample No. | Collection Date | Matrix | PAH | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAG-198-B | 11/08/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAG-199-B | | | ✓ | | | | | | 1 | |
| | AAG-200-B | | | ✓ | | | | | | 1 | |
| | AAG-201-B | | | ✓ | | | | | | 1 | |
| | AAG-202-B | | | ✓ | | | | | | 1 | |
| | AAG-203-B | | | ✓ | | | | | | 1 | |
| | AAG-204-B | | | ✓ | | | | | | 1 | |
| | AAG-205-B | | | ✓ | | | | | | 1 | |
| | AAG-206-B | | | ✓ | | | | | | 1 | |
| | AAG-207-B | | | ✓ | | | | | | 1 | |
| | AAG-208-B | | | ✓ | | | | | | 1 | |
| | AAG-209-B | | | ✓ | | | | | | 1 | |
| | AAG-210-B | | | ✓ | | | | | | 1 | |
| | AAG-211-B | | | ✓ | | | | | | 1 | |
| | AAG-212-B | | | ✓ | | | | | | 1 | |
| | AAG-213-B | | | ✓ | | | | | | 1 | |
| | AAG-214-B | | | ✓ | | | | | | 1 | |
| | AAG-215-B | | | ✓ | | | | | | 1 | |
| | AAG-216-B | | | ✓ | | | | | | 1 | |
| | AAG-217-B | | | ✓ | | | | | | 1 | |
| | AAG-218-B | | | ✓ | | | | | | 1 | KB 11/08/01 |
| | AAG-219-B | | | ✓ | | | | | | 1 | |
| | AAG-220-B | | | ✓ | | | | | | 1 | |
| | AAG-221-B | | | ✓ | | | | | | 1 | |

20 PAH this page (44 total) + 19 clay fragment total + 40 silt fragment total

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: E Vonckx Date: 11/8/01 Time: 1700 | Signature: Date: Time: | Total No. of Containers |
| Printed Name: LIZ VONCKX | Printed Name: | Shipment Method: FED EX |
| Company: Battelle | Company: | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | **DISTRIBUTION:** |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
| Printed Name: | Printed Name: | 2. Return pink copy to Project file or to project manager. |
| Company: | Company: | 3. Laboratory to return signed white copy to Battelle for project files |

BC 1800 102 (04/01)

MSL-A-001 & MSL-A-002 COOLER 1 OF 1

SAMPLE CUSTODY RECORD Date 11/02/01 Page 3 of 5

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name ARMADA PT SEAT DANGER
Project Manager _____ Phone _____

Lab PATTELLE DURHAM
397 WASHINGTON ST
Address DURHAM NH 03824
ATTN: BOB LIZOTTE
Attention (TIM HATTER: CUSTODIAN)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: SHOT/GRIT | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-327-A | 11/02/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAE-328-A | | | ✓ | | | | | | 1 | |
| | AAE-329-A | | | ✓ | | | | | | 1 | |
| | AAE-330-A | | | ✓ | | | | | | 1 | |
| | AAE-331-A | | | ✓ | | | | | | 1 | |
| | AAE-332-A | | | ✓ | | | | | | 1 | |
| | AAE-333-A | | | ✓ | | | | | | 1 | |
| | AAE-334-A | | | ✓ | | | | | | 1 | |
| | AAE-335-A | | | ✓ | | | | | | 1 | |
| | AAE-336-A | | | ✓ | | | | | | 1 | |
| | AAE-337-A | | | ✓ | | | | | | 1 | |
| | AAE-338-A | | | ✓ | | | | | | 1 | |
| | AAE-339-A | | | ✓ | | | | | | 1 | |
| | AAE-340-A | | | ✓ | | | | | | 1 | |
| | AAE-341-A | | | ✓ | | | | | | 1 | |
| | AAE-342-A | | | ✓ | | | | | | 1 | |
| | AAE-345-A | | | ✓ | | | | | | 1 | |
| | AAE-346-A | | | ✓ | | | | | | 1 | |
| | AAE-347-A | | | ✓ | | | | | | 1 | |
| | AAE-348-A | | | ✓ | | | | | | 1 | |
| | AAE-349-A | | | ✓ | | | | | | 1 | |
| | AAE-350-A | | | ✓ | | | | | | 1 | |
| | AAE-351-A | | | ✓ | | | | | | 1 | |
| | AAE-352-A | | | ✓ | | | | | | 1 | (9 Clay Fragment + 48 PAH TOTAL) |
| | | | | | | | | | | 24 | SHOT/GRIT Hg spike (48 total) |

Total No. of Containers

| Relinquished by: | Received by: |
|---|---|
| Signature: [signature] Date: 11/8/01 Time: 1700 | Signature: Date: Time: |
| Printed Name: LIZ VONCKX | Printed Name: |
| Company: Battelle | Company: |

Shipment Method: Fed Ex

Special Requirements or Comments:

| Relinquished by: | Received by: |
|---|---|
| Signature: Date: Time: | Signature: Date: Time: |
| Printed Name: | Printed Name: |
| Company: | Company: |

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MSL-A-001 & MSL-A-002

COOLER 1 OF 1

# AMPLE CUSTODY RECORD

Date 11/8/01 Page 4 of 5

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. C477703
Project Name Alameda Point Skeet Range Eval
Project Manager _____ Phone _____

Lab Battelle Duxbury
Address 397 Washington, Duxbury, MA 02332
Attention Mr. Paul Little, James Hatch, Custodian

| Lab No. | Sample No. | Collection Date | Matrix | Shot/grit | clay target | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-353-A | 11/8/01 | marine sediment | ✓ | | | | | | 1 | |
| | AAE-354-A | | | ✓ | | | | | | 1 | |
| | AAE-355-A | | | ✓ | | | | | | 1 | |
| | AAE-356-A | | | ✓ | | | | | | 1 | |
| | AAE-357-A | | | ✓ | | | | | | 1 | |
| | AAE-358-A | | | ✓ | | | | | | 1 | |
| | AAE-359-A | | | ✓ | | | | | | 1 | |
| | AAE-360-A | | | ✓ | | | | | | 1 | |
| | AAE-361-A | | | ✓ | | | | | | 1 | |
| | AAE-362-A | | | ✓ | | | | | | 1 | |
| | AAE-363-A | | | ✓ | | | | | | 1 | |
| | AAE-364-A | | | ✓ | | | | | | 1 | |
| | AAE-365-A | | | ✓ | | | | | | 1 | |
| | AAE-366-A | | | ✓ | | | | | | 1 | |
| | AAE-367-A | | | ✓ | | | | | | 1 | |
| | AAE-368-A | | | ✓ | | | | | | 1 | |
| | AAE-577-B/C | | | | ✓ | | | | | 1 | |
| | AAE-581-B/C | | | | ✓ | | | | | 1 | |
| | AAE-580-B/C | | | | ✓ | | | | | 1 | |
| | AAE-579-B/C | | | | ✓ | | | | | 1 | |
| | AAE-578-B/C | | | | ✓ | | | | | 1 | |
| | AAE-575-B/C | | | | ✓ | | | | | 1 | |
| | AAE-574-B/C | | | | ✓ | | | | | 1 | |
| | AAE-576-B/C | | | | ✓ | | | | | 1 | |

(41 PAH total, 46 shot/grit total, 19 clay fragment total)
8 clay fragment, 16 shot/grit
This page

Total No. of Containers

Relinquished by: Liz Vonckx 11/8/01 1700
Signature Date Time
Liz Vonckx
Printed Name
Battelle
Company

Received by:
Signature Date Time
Printed Name
Company

Shipment Method: Fed Ex
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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COOLER 1 OF 1

**MSL-A-001 & MSL-A-002**

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

## SAMPLE CUSTODY RECORD

Date 11/08/01 Page 5 of 5

Project No. G477703
Project Name Alameda Point Skeet Range
Project Manager VIRGINIA LAU Phone 510 562 4096

Lab BATTELLE DUXBURY
Address 397 WASHINGTON DUXBURY MA 02332
Attention BOB LIZOTTE

| Lab No. | Sample No. | Collection Date | Matrix | PAH, TPH | Shot + grit enumeration | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-376-A | 11/08/01 | Mercurad Aerosolves | | ✓ | | | | | | 1 | |
| | AAE-375-A | ↓ | ↓ | | ✓ | | | | | | 1 | |
| | AAE-374-A | | | | ✓ | | | | | | 1 | |
| | AAE-373-A | | | | ✓ | | | | | | 1 | |
| | AAE-372-A | | | | ✓ | | | | | | 1 | |
| | AAE-371-A | | | | ✓ | | | | | | 1 | |
| | AAE-370-A | | | | ✓ | | | | | | 1 | |
| | AAE-369-A | | | | ✓ | | | | | | 1 | |
| | AAE-582-BK | ↓ | Clay Fragments | ✓ | | | | | | | 1 | |

8 shot + grit this page (48 total)
1 clay fragment this page (9 total)
(4 PAH total)

Total No. of Containers

| Relinquished by: | Received by: |
|---|---|
| Signature: EW Vinckx Date: 11/8/01 Time: 1700 | Signature: Date: Time: |
| Printed Name: LIZ VONCKX | Printed Name: |
| Company: Battelle | Company: |

Shipment Method: FEDEX

Special Requirements or Comments:

| Relinquished by: | Received by: |
|---|---|
| Signature: Date: Time: | Signature: Date: Time: |
| Printed Name: | Printed Name: |
| Company: | Company: |

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# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/08/01 Page 1 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name ALAMEDA PT SKYT DANGER
Project Manager VIRGINIA LAU SIO Phone 562-402

Lab SUPERIOR-TRENT LAB
Address 1721 S. GRAND AVE SANTA ANA CA 92705
Attention RODGER MARTION

| Lab No. | Sample No. | Collection Date | Matrix | TPH-DRO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAG-174-C | 11/08/01 | MARINE SEDIMENT | ✓ | | | | | | 1 | |
| | AAG-175-C | | | ✓ | | | | | | 1 | |
| | AAG-176-C | | | ✓ | | | | | | 1 | |
| | AAG-177-C | | | ✓ | | | | | | 1 | |
| | AAG-178-C | | | ✓ | | | | | | 1 | |
| | AAG-179-C | | | ✓ | | | | | | 1 | |
| | AAG-180-C | | | ✓ | | | | | | 1 | |
| | AAG-181-C | | | ✓ | | | | | | 1 | |
| | AAG-182-C | | | ✓ | | | | | | 1 | |
| | AAG-183-C | | | ✓ | | | | | | 1 | |
| | AAG-184-C | | | ✓ | | | | | | 1 | |
| | AAG-185-C | | | ✓ | | | | | | 1 | |
| | AAG-186-C | | | ✓ | | | | | | 1 | |
| | AAG-187-C | | | ✓ | | | | | | 1 | |
| | AAG-188-C | | | ✓ | | | | | | 1 | |
| | AAG-189-C | | | ✓ | | | | | | 1 | |
| | AAG-190-C | | | ✓ | | | | | | 1 | |
| | AAG-191-C | | | ✓ | | | | | | 1 | |
| | AAG-192-C | | | ✓ | | | | | | 1 | |
| | AAG-193-C | | | ✓ | | | | | | 1 | |
| | AAG-194-C | | | ✓ | | | | | | 1 | |
| | AAG-195-C | | | ✓ | | | | | | 1 | |
| | AAG-196-C | | | ✓ | | | | | | 1 | |
| | AAG-197-C | | | ✓ | | | | | | 1 | |

Relinquished by:
Signature: EW Vonckx Date: 11/8/01 Time: 1700
Printed Name: LIZ VONCKX
Company: Battelle

Received by:
Signature Date Time
Printed Name
Company

24 THIS PAGE
~~48~~ 44 TOTAL Total No. of Containers
11/8/01
Shipment Method: FedEx
Special Requirements or Comments:
Tracking # 825074 224180

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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# MSL-A-001 & MSL-A-002

## SAMPLE CUSTODY RECORD

Date 11/08/01 Page 2 of 2

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G47770 3
Project Name ALAMEDA PT SEAFRANCE
Project Manager VIRGINIA LAU Phone 310 562-4022

Lab SEVERN TRENT
Address 1721 S. GRAND AVE SANTA ANA CA 92705
Attention RODNEY MARTIN

| Lab No. | Sample No. | Collection Date | Matrix | TPH EPA | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-198-C | 11/08/01 | MARINE SEDIM | ✓ | | | | | ✓ | 1 | |
| | AAE-199-C | | | ✓ | | | | | | 1 | |
| | AAE-200-C | | | ✓ | | | | | | 1 | |
| | AAE-201-C | | | ✓ | | | | | | 1 | |
| | AAE-202-C | | | ✓ | | | | | | 1 | |
| | AAE-203-C | | | ✓ | | | | | | 1 | |
| | AAE-204-C | | | ✓ | | | | | | 1 | |
| | AAE-205-C | | | ✓ | | | | | | 1 | |
| | AAE-206-C | | | ✓ | | | | | | 1 | |
| | AAE-207-C | | | ✓ | | | | | | 1 | |
| | AAE-208-C | | | ✓ | | | | | | 1 | |
| | AAE-209-C | | | ✓ | | | | | | 1 | |
| | AAE-210-C | | | ✓ | | | | | | 1 | |
| | AAE-211-C | | | ✓ | | | | | | 1 | |
| | AAE-212-C | | | ✓ | | | | | | 1 | |
| | AAE-213-C | | | ✓ | | | | | | 1 | |
| | AAE-214-C | | | ✓ | | | | | | 1 | |
| | AAE-215-C | | | ✓ | | | | | | 1 | |
| | AAE-217-C | ↓ | ↓ | ✓ | | | | | | 1 | |
| | AAE-216-C | ↓ | ↓ | ✓ | | | | | | ✓ | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: E Wilonck 11/8/01 1700 (Date, Time) | Signature / Date / Time | Total No. of Containers: 19 THIS PAGE, 25 TOTAL, 44 11/8/01 (LV) |
| Printed Name: LIZ VONCKX | Printed Name | Shipment Method: FedEX |
| Company: Battelle | Company | Special Requirements or Comments: |
| Relinquished by: | Received by: | DISTRIBUTION: |
| Signature / Date / Time | Signature / Date / Time | 1. Provide white and yellow copies to the Laboratory |
| Printed Name | Printed Name | 2. Return pink copy to Project file or to project manager. |
| Company | Company | 3. Laboratory to return signed white copy to Battelle for project files |

PO 1800-100 (04/01)

MSL-A-001 & MSL-A-002

COOLER 1 of 1

# SAMPLE CUSTODY RECORD

Date 11/9/01 Page 1 of 1

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Lau Phone (510) 562-4281

Lab Severn Trent
Address 1721 S. Grand Ave. Santa Ana, CA 92705
Attention Rodel Martin

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: TPH-DRO | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-218-C | 11/9/01 | Sediment | ✓ | | | | | | 1 | |
| | AAE-219-C | | | ✓ | | | | | | 1 | |
| | AAE-220-C | | | ✓ | | | | | | 1 | |
| | AAE-221-C | | | ✓ | | | | | | 1 | |
| | AAE-222-C | | | ✓ | | | | | | 1 | |
| | AAE-223-C | | | ✓ | | | | | | 1 | |
| | AAE-224-C | | | ✓ | | | | | | 1 | |
| | AAE-225-C | | | ✓ | | | | | | 1 | |
| | AAE-226-C | | | ✓ | | | | | | 1 | |
| | AAE-227-C | | | ✓ | | | | | | 1 | |
| | AAE-228-C | | | ✓ | | | | | | 1 | |
| | AAE-229-C | | | ✓ | | | | | | 1 | |
| | AAE-230-C | | | ✓ | | | | | | 1 | |
| | AAE-231-C | | | ✓ | | | | | | 1 | |
| | AAE-232-C | | | ✓ | | | | | | 1 | |
| | AAE-233-C | | | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: EW Vanckx; Date: 11/9/01; Time: 1700 | Signature; Date; Time | Total No. of Containers: 16 |
| Printed Name: LIZ VANCKX | Printed Name | Shipment Method: #825074224170 Fed Ex |
| Company: Battelle | Company | Special Requirements or Comments: |
| Relinquished by: Signature; Date; Time | Received by: Signature; Date; Time | DISTRIBUTION: |
| Printed Name | Printed Name | 1. Provide white and yellow copies to the Laboratory |
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COOLER 1 of 1

MSL-A-001 & MSL-A-002

# SAMPLE CUSTODY RECORD

Date 11/09/01 Page 1 of ~~7~~ 8

11/12/01

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Law Phone 360 510 503 4080

Lab BATTELLE DUXBURY
Address 397 Washington St Duxbury, MA 02332
Attention BOB LIZUTTE

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Grain & Shot Characterization | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-377-A | 11/8/01 | Marine Sediment (material from skeet) | ✓ | | | | | | 1 | |
| | AAE-378-A | | | ✓ | | | | | | 1 | |
| | AAE-379-A | | | ✓ | | | | | | 1 | |
| | AAE-380-A | | | ✓ | | | | | | 1 | |
| | AAE-381-A | | | ✓ | | | | | | 1 | |
| | AAE-382-A | | | ✓ | | | | | | 1 | |
| | AAE-383-A | | | ✓ | | | | | | 1 | |
| | AAE-384-A | | | ✓ | | | | | | 1 | |
| | AAE-385-A | | | ✓ | | | | | | 1 | |
| | AAE-386-A | | | ✓ | | | | | | 1 | |
| | AAE-387-A | | | ✓ | | | | | | 1 | |
| | AAE-388-A | | | ✓ | | | | | | 1 | |
| | AAE-389-A | | | ✓ | | | | | | 1 | |
| | AAE-390-A | | | ✓ | | | | | | 1 | |
| | AAE-391-A | | | ✓ | | | | | | 1 | |
| | AAE-392-A | | | ✓ | | | | | | 1 | |
| | AAE-393-A | | | ✓ | | | | | | 1 | |
| | AAE-394-A | | | ✓ | | | | | | 1 | |
| | AAE-395-A | | | ✓ | | | | | | 1 | |
| | AAE-396-A | | | ✓ | | | | | | 1 | |
| | AAE-397-A | | | ✓ | | | | | | 1 | |
| | AAE-398-A | | | ✓ | | | | | | 1 | |
| | AAE-399-A | | | ✓ | | | | | | 1 | |
| | AAE-400-A | | | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: Nancy Kohn Date: 11/12/01 Time: 0940 | Signature: Date: Time: | Total No. of Containers: 24 this page |
| Printed Name: NANCY KOHN | Printed Name: | Shipment Method: FED EX |
| Company: BATTELLE | Company: | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | **DISTRIBUTION:** |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
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COOLER 1 of 1

(NP) 11/12/01

# AMPLE CUSTODY RECORD

Date 11/09/01 Page 2 of ~~7~~ 8

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703

Project Name Alameda Point Sediment Bioassay Evaluation

Project Manager Kingma Law Phone 510 562 4080

Lab BATTELLE DUXBURY ~~347 Duxbury~~ 397 Washington St

Address DUXBURY, MA 02332

Attention Bob Lizotte

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Contaminant Sediment Bioassay | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-401-A | 11/9/01 | marine sediment (material from sieves) | ✓ | | | | | | 1 | |
| | AAE-402-A | | | ✓ | | | | | | 1 | |
| | AAE-403-A | | | ✓ | | | | | | 1 | |
| | AAE-404-A | | | ✓ | | | | | | 1 | |
| | AAE-405-A | | | ✓ | | | | | | 1 | |
| | AAE-406-A | | | ✓ | | | | | | 1 | |
| | AAE-407-A | | | ✓ | | | | | | 1 | |
| | AAE-408-A | | | ✓ | | | | | | 1 | |
| | AAE-409-A | | | ✓ | | | | | | 1 | |
| | AAE-410-A | | | ✓ | | | | | | 1 | |
| | AAE-411-A | | | ✓ | | | | | | 1 | |
| | AAE-412-A | | | ✓ | | | | | | 1 | |
| | AAE-413-A | | | ✓ | | | | | | 1 | |
| | AAE-414-A | | | ✓ | | | | | | 1 | |
| | AAE-415-A | | | ✓ | | | | | | 1 | |
| | AAE-416-A | | | ✓ | | | | | | 1 | |
| | ~~AAE-417-A~~ (1) | | | ✓ | | | | | | 0 | (1) No sample retrieved |
| | AAE-418-A | | | ✓ | | | | | | 1 | |
| | AAE-419-A | | | ✓ | | | | | | 1 | |
| | AAE-420-A | | | ✓ | | | | | | 1 | |
| | AAE-421-A | | | ✓ | | | | | | 1 | |
| | AAE-422-A | | | ✓ | | | | | | 1 | |
| | AAE-423-A | | | ✓ | | | | | | 1 | |
| | AAE-424-A | | | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: Nancy Kohn — Date: 11/12/01 — Time: 0940 | Signature — Date — Time | 23 (116 pcs) Total No. of Containers |
| Printed Name: NANCY KOHN | Printed Name | Shipment Method: FEDEX |
| Company: BATTELLE | Company | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | DISTRIBUTION: |
| Signature — Date — Time | Signature — Date — Time | 1. Provide white and yellow copies to the Laboratory |
| Printed Name | Printed Name | 2. Return pink copy to Project file or to project manager. |
| Company | Company | 3. Laboratory to return signed white copy to Battelle for project files |

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COOLER 1 OF 1

(NP) 11/12/01

# SAMPLE CUSTODY RECORD

Date 11/9/01 Page 3 of 78

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Naked Point Shoot Range Embankment
Project Manager Virginia Lee Phone 510-562-3096

Lab Battelle Duxbury
Address 397 Washington Street Duxbury MA 02332
Attention Bob Lizotte

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Gulf and Sea Enterprise | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-425-A | 11/9/01 | Marine sediment | ✓ | | | | | | 1 | |
| | AAE-426-A | | | ✓ | | | | | | 1 | |
| | AAE-427-A | | | ✓ | | | | | | 1 | |
| | AAE-428-A | | | ✓ | | | | | | 1 | |
| | AAE-429-A | | | ✓ | | | | | | 1 | |
| | AAE-430-A | | | ✓ | | | | | | 1 | |
| | AAE-431-A | | | ✓ | | | | | | 1 | |
| | AAE-432-A | | | ✓ | | | | | | 1 | |
| | AAE-433-A | | | ✓ | | | | | | 1 | |
| | AAE-434-A | | | ✓ | | | | | | 1 | |
| | AAE-435-A | | | ✓ | | | | | | 1 | |
| | AAE-436-A | | | ✓ | | | | | | 1 | |
| | AAE-437-A | | | ✓ | | | | | | 1 | |
| | AAE-438-A | | | ✓ | | | | | | 1 | |
| | AAE-439-A | | | ✓ | | | | | | 1 | |
| | AAE-440-A | | | ✓ | | | | | | 1 | |
| | AAE-441-A | | | ✓ | | | | | | 1 | |
| | AAE-442-A | | | ✓ | | | | | | 1 | |
| | AAE-443-A | | | ✓ | | | | | | 1 | |
| | AAE-444-A | | | ✓ | | | | | | 1 | |
| | AAE-445-A | | | ✓ | | | | | | 1 | |
| | AAE-446-A | | | ✓ | | | | | | 1 | |
| | ~~AAE-447-A~~ | | | ✓ | | | | | | 0 | No sample retrieved |
| | AAE-448-A | | | ✓ | | | | | | 1 | |

Relinquished by:
Signature [signature] Date 11/12/01 Time 0940
Printed Name NANCY KOHN
Company BATTELLE

Received by:
Signature Date Time
Printed Name
Company

23 THIS page. Total No. of Containers
Shipment Method: FED EX
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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MSL-A-001 & MSL-A-002

COOLER 1 OF 1

# AMPLE CUSTODY RECORD

Date 11/5/01 Page 4 of 78

11/12/01

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Alameda Point Sediment Range Evaluation
Project Manager Virginia Lee Phone 510-562-4086

Lab Battelle Duxbury
Address 397 Washington Street Duxbury, MA 02332
Attention Bob Lotto

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Grain Size Chemistry | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-449-A | 11/5/01 | Marine Sediment (Material from sieves) | ✓ | | | | | | 1 | |
| | AAE-450-A | | | ✓ | | | | | | 1 | |
| | AAE-451-A | | | ✓ | | | | | | 1 | |
| | AAE-452-A | | | ✓ | | | | | | 1 | |
| | AAE-453-A | | | ✓ | | | | | | 1 | |
| | AAE-454-A | | | ✓ | | | | | | 1 | |
| | AAE-455-A | | | ✓ | | | | | | 1 | |
| | AAE-456-A | | | ✓ | | | | | | 1 | |
| | AAE-457-A | | | ✓ | | | | | | 1 | |
| | AAE-458-A | | | ✓ | | | | | | 1 | |
| | AAE-459-A | | | ✓ | | | | | | 1 | |
| | AAE-460-A | | | ✓ | | | | | | 1 | |
| | AAE-461-A | | | ✓ | | | | | | 1 | |
| | AAE-462-A | | | ✓ | | | | | | 1 | |
| | AAE-463-A | | | ✓ | | | | | | 1 | |
| | AAE-464-A | | | ✓ | | | | | | 1 | |
| | ~~AAE-465-A~~ | | | ✓ | | | | | | 0 | No sample collected |
| | AAE-466-A | | | ✓ | | | | | | 1 | |
| | AAE-467-A | | | ✓ | | | | | | 1 | |
| | AAE-468-A | | | ✓ | | | | | | 1 | |
| | AAE-469-A | | | ✓ | | | | | | 1 | |
| | AAE-470-A | | | ✓ | | | | | | 1 | |
| | AAE-471-A | | | ✓ | | | | | | 1 | |
| | AAE-472-A | | | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | |
|---|---|---|
| Signature: [signature] Date: 11/12/01 Time: 0940 | Signature: Date: Time: | 23 this page Total No. of Containers |
| Printed Name: NANCY KOHN | Printed Name: | Shipment Method: FEDEX |
| Company: BATTELLE | Company: | Special Requirements or Comments: |
| **Relinquished by:** | **Received by:** | **DISTRIBUTION:** |
| Signature: Date: Time: | Signature: Date: Time: | 1. Provide white and yellow copies to the Laboratory |
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PC-1800-102 (04/01)

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COVER 1 OF 1

**Battelle**
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

# AMPLE CUSTODY RECORD

Date 11/5/01 Page 5 of 8

oject No. C477703
Project Name Alaska Peninsula Shoot Range Evaluation
oject Manager [illegible] Phone 516-[illegible]

Lab Battelle Duxbury
Address 397 Washington Street Duxbury MA 02332
Attention Bob Lizotte

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Analyzed CG PAH | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-583-B/C | 11/5/01 | Nuyel Sediment | ✓ | | | | | | 1 | |
| | AAE-584-B/C | | CLAY FRAGMENTS | ✓ | | | | | | 1 | |
| | AAE-585-B/C | | | ✓ | | | | | | 1 | |
| | AAE-586-B/C | | | ✓ | | | | | | 1 | |
| | AAE-587-B/C | | | ✓ | | | | | | 1 | |
| | AAE-588-B/C | | | ✓ | | | | | | 1 | |
| | AAE-589-B/C | | | ✓ | | | | | | 1 | |
| | AAE-590-B/C | | | ✓ | | | | | | 1 | |
| | AAE-591-B/C | | | ✓ | | | | | | 1 | |
| | AAE-592-B/C | | | ✓ | | | | | | 1 | |
| | AAE-593-B/C | | | ✓ | | | | | | 1 | |
| | AAE-594-B/C | | | ✓ | | | | | | 1 | |
| | AAE-595-B/C | | | ✓ | | | | | | 1 | |
| | AAE-596-B/C | 11/10/01 | Clay Fragment | ✓ | | | | | | 1 | |
| | AAE-597-B/C | 11/10/01 | | ✓ | | | | | | 1 | |
| | AAE-599-B/C | 11/10/01 | | ✓ | | | | | | 1 | |
| | AAE-600-B/C | 11/10/01 | Clay fragment | ✓ | | | | | | 1 | |
| | AAE-601-B/C | 11/11/01 | Clay fragment | ✓ | | | | | | 1 | |

18 Clay fragment this page

Relinquished by:
Signature [signature] Date 11/12/01 Time 0940
Printed Name NANCY KOHN
Company BATTELLE

Received by:
Signature Date Time
Printed Name
Company

Total No. of Containers 18
11/12/01
Shipment Method: FED EX
Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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COOLER 1 OF 1

# SAMPLE CUSTODY RECORD

Date 11/09/01 Page 6 of 8

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 64777703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Law Phone 510 5624086

Lab BATTELLE DUXBURY
Address 397 WASHINGTON ST DUXBURY, MA 02332
Attention BOB LIZOTE

| Lab No. | Sample No. | Collection Date | Matrix | PAHs | Grain Size Composition | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-218-B | 11/09/01 | Marine Sediment | ✓ | | | | | | 1 | |
| | AAE-219-B | | | ✓ | | | | | | 1 | |
| | AAE-220-B | | | ✓ | | | | | | 1 | |
| | AAE-221-B | | | ✓ | | | | | | 1 | |
| | AAE-222-B | | | ✓ | | | | | | 1 | |
| | AAE-223-B | | | ✓ | | | | | | 1 | |
| | AAE-224-B | | | ✓ | | | | | | 1 | |
| | AAE-225-B | | | ✓ | | | | | | 1 | |
| | AAE-226-B | | | ✓ | | | | | | 1 | |
| | AAE-227-B | | | ✓ | | | | | | 1 | |
| | AAE-228-B | | | ✓ | | | | | | 1 | |
| | AAE-229-B | | | ✓ | | | | | | 1 | |
| | AAE-230-B | | | ✓ | | | | | | 1 | |
| | AAE-231-B | | | ✓ | | | | | | 1 | |
| | AAE-232-B | | | ✓ | | | | | | 1 | |
| | AAE-233-B | | | ✓ | | | | | | 1 | |
| | AAE-474-A | 11/9/01 | Marine Sediment (material from sieves) | | ✓ | | | | | 1 | |
| | AAE-476-~~B~~ 66 A | | | | ✓ | | | | | 1 | |
| | AAE-477-~~B~~ 66 A | | | | ✓ | | | | | 1 | |
| | AAE-478-A | | | | ✓ | | | | | 1 | |
| | AAE-479-A | | | | ✓ | | | | | 1 | |
| | AAE-480-A | | | | ✓ | | | | | 1 | |
| | AAE-481-A | 11/10/01 | material from sieves | | ✓ | | | | | 1 | different large ziploc |
| | AAE-482-A | 11/10/01 | | | ✓ | | | | | 1 | |

16 SEDIMENT for PAH
8 SHIPPING NOTE CONTAINERS

Relinquished by:
Signature Nancy Kohn Date 11/12/01 Time 0940
Printed Name NANCY KOHN
Company BATTELLE

Received by:
Signature Date Time
Printed Name
Company

Shipment Method: FED EX

Special Requirements or Comments:

Relinquished by:
Signature Date Time
Printed Name
Company

Received by:
Signature Date Time
Printed Name
Company

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COOLER 1 of 1

# SAMPLE CUSTODY RECORD

Date 11/10/01 Page 7 of 8

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 6477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Lau Phone (510) 567-4200

Lab Battelle Duxbury 397 Washington St.
Address Duxbury MA 02332
Attention Bob Lizotte

| Lab No. | Sample No. | Collection Date | Matrix | Shot + Grit Separation | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-483-A | 11/10/01 | Material from Sieves | ✓ | | | | | | 1 | |
| | AAE-484-A | | | ✓ | | | | | | 1 | |
| | AAE-485-A | | | ✓ | | | | | | 1 | |
| | AAE-486-A | | | ✓ | | | | | | 1 | |
| | AAE-492-A | | | ✓ | | | | | | 1 | |
| | AAE-493-A | | | ✓ | | | | | | 1 | |
| | AAE-502-A | | | ✓ | | | | | | 1 | |
| | AAE-497-A | | | ✓ | | | | | | 1 | |
| | AAE-501-A | | | ✓ | | | | | | 1 | |
| | AAE-500-A | | | ✓ | | | | | | 1 | |
| | AAE-499-A | | | ✓ | | | | | | 1 | |
| | AAE-496-A | | | ✓ | | | | | | 1 | |
| | AAE-506-A | | | ✓ | | | | | | 1 | |
| | AAE-505-A | | | ✓ | | | | | | 1 | |
| | AAE-503-A | | | ✓ | | | | | | 1 | |
| | AAE-504-A | | | ✓ | | | | | | 1 | |
| | AAE-507-A | | | ✓ | | | | | | 1 | |
| | AAE-508-A | | | ✓ | | | | | | 1 | |
| | AAE-494-A | | | ✓ | | | | | | 1 | |
| | AAE-495-A | | | ✓ | | | | | | 1 | |
| | AAE-489-A | | | ✓ | | | | | | 1 | |
| | AAE-490-A | | | ✓ | | | | | | 1 | |
| | AAE-488-A | | | ✓ | | | | | | 1 | |
| | AAE-487-A | | | ✓ | | | | | | 1 | |

| Relinquished by: | Received by: | Total No. of Containers: 21 this page |
|---|---|---|
| Signature: Nancy Kohn — Date: 11/12/01 — Time: 0940 | Signature — Date — Time | Shipment Method: FED EX |
| Printed Name: NANCY KOHN | Printed Name | Special Requirements or Comments: |
| Company: BATTELLE | Company | |
| Relinquished by: | Received by: | DISTRIBUTION: |
| Signature — Date — Time | Signature — Date — Time | 1. Provide white and yellow copies to the Laboratory |
| Printed Name | Printed Name | 2. Return pink copy to Project file or to project manager. |
| Company | Company | 3. Laboratory to return signed white copy to Battelle for project files |

BC-1800-192 (04/01)

MSL-A-001 & MSL-A-002

COOLER 1 OF 1

page 8 of 8

# SAMPLE CUSTODY RECORD

Date 11/11/01 Page ~~7~~ of ~~7~~ 11/12/01

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G-477703

Project Name Alameda Point Skeet Range Evaluation

Project Manager Virginia Lau Phone (510) 562-7082

Lab Battelle Duxbury
Address 397 Washington St. Duxbury MA 02332
Attention Bob Lizotte (or Studian Tim Hatch)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: Grit and Sort Pauncentration | | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-509-A | 11/11/01 | Sieved Sediment | ✓ | | | | | | 1 | |
| | AAE-510-A | | | ✓ | | | | | | 1 | |
| | AAE-511-A | | | ✓ | | | | | | 1 | |
| | AAE-512-A | | | ✓ | | | | | | 1 | |
| | AAE-513-A | | | ✓ | | | | | | 1 | |
| | AAE-514-A | | | ✓ | | | | | | 1 | |
| | AAE-515-A | | | ✓ | | | | | | 1 | |
| | AAE-516-A | | | ✓ | | | | | | 1 | |
| | AAE-517-A | | | ✓ | | | | | | 1 | |
| | AAE-518-A | | | ✓ | | | | | | 1 | |
| | AAE-519-A | | | ✓ | | | | | | 1 | |
| | AAE-520-A | | | ✓ | | | | | | 1 | |
| | AAE-521-A | | | ✓ | | | | | | 1 | |
| | AAE-522-A | | | ✓ | | | | | | 1 | |
| | AAE-523-A | | | ✓ | | | | | | 1 | |
| | AAE-524-A | | | ✓ | | | | | | 1 | |
| | AAE-525-A | | | ✓ | | | | | | 1 | |
| | AAE-526-A | | | ✓ | | | | | | 1 | |
| | AAE-527-A | | | ✓ | | | | | | 1 | |
| | AAE-528-A | | | ✓ | | | | | | 1 | |
| | AAE-529-A | | | ✓ | | | | | | 1 | |
| | AAE-530-A | | | ✓ | | | | | | 1 | |
| | AAE-531-A | | | ✓ | | | | | | 1 | |
| | AAE-532-A | | | ✓ | | | | | | 1 | |

Relinquished by: Signature [signature] Date 11/12/01 Time 0940
Printed Name NANCY KOHN
Company BATTELLE

Received by: Signature Date Time
Printed Name
Company

24 this page Total No. of Containers

Shipment Method: Fed EX

Special Requirements or Comments:

Relinquished by: Signature Date Time
Printed Name
Company

Received by: Signature Date Time
Printed Name
Company

DISTRIBUTION:

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BC 1800-192 (04/01)

MSL-A-001 & MSL-A-002 COOLER 1 OF 1

SAMPLE CUSTODY RECORD Date 11/13/01 Page 1 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. 64777703
Project Name ALAMEDA POINT SKEET RANGE EVALUATION
Project Manager VIRGINIA LAU Phone 510 562-4016

Lab BATTELLE DUXBURY
Address 397 WASHINGTON ST DUXBURY, MA 02332
Attention BOB LIZOTTE (Jim Hatch, Custodian)

| Lab No. | Sample No. | Collection Date | Matrix | Testing Parameters: SHOT + GRIT SAMPLE EVALUATION | PAH/TPH | CG | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-533-A | 11/13/01 | material from sieves | ✓ | | | | | | | 1 | |
| | AAE-534-A | | | ✓ | | | | | | | 1 | |
| | AAE-535-A | | | ✓ | | | | | | | 1 | |
| | AAE-536-A | | | ✓ | | | | | | | 1 | |
| | AAE-537-A | | | ✓ | | | | | | | 1 | |
| | AAE-538-A | | | ✓ | | | | | | | 1 | |
| | AAE-539-A | | | ✓ | | | | | | | 1 | |
| | AAE-540-A | | | ✓ | | | | | | | 1 | |
| | AAE-541-A | | | ✓ | | | | | | | 1 | |
| | AAE-542-A | | | ✓ | | | | | | | 1 | |
| | AAE-543-A | | | ✓ | | | | | | | 1 | |
| | AAE-544-A | | | ✓ | | | | | | | 1 | |
| | AAE-545-A | | | ✓ | | | | | | | 1 | |
| | AAE-546-A | | | ✓ | | | | | | | 1 | |
| | AAE-547-A | | | ✓ | | | | | | | 1 | |
| | AAE-548-A | | | ✓ | | | | | | | 1 | |
| | AAE-549-A | | | ✓ | | | | | | | 1 | |
| | AAE-550-A | | | ✓ | | | | | | | 1 | |
| | AAE-551-A | | | ✓ | | | | | | | 1 | |
| | AAE-552-A | | | ✓ | | | | | | | 1 | |
| | AAE-553-A | | | ✓ | | | | | | | 1 | |
| | AAE-554-A | | | ✓ | | | | | | | 1 | 38 SHOT + GRIT SAMPLES 3 possible PAH/TPH jars this SHIPMENT |
| | AAE-555-A | | | ✓ | | | | | | | 1 | |
| | AAE-556-A | | | ✓ | | | | | | | 1 | |

Relinquished by: Signature [signature] Date 11/14/01 Time 1145 11/14/01
Printed Name NANCY KOHN
Company BATTELLE

Received by: Signature Date Time
Printed Name
Company

24 this page Total No. of Containers
Shipment Method: FEDEX
Special Requirements or Comments:

Relinquished by: Signature Date Time
Printed Name
Company

Received by: Signature Date Time
Printed Name
Company

DISTRIBUTION:
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~~Cooler 1 of 1~~ 11/14/01
COOLER 1 OF 1

MSL-A-001 & MSL-A-002

# SAMPLE CUSTODY RECORD

Date 11/13/01 Page 2 of 2

Battelle
Pacific Northwest Division
Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Project No. G477703
Project Name Alameda Point Skeet Range Evaluation
Project Manager Virginia Lee Phone 562-4026

Lab Battelle Duxbury
Address 397 Washington Street Duxbury, MA 02332
Attention Bob Lizotte

| Lab No. | Sample No. | Collection Date | Matrix | Shaft C-F Composite | PAH/TPH | | | | | No. of Containers | Observations, Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AAE-557-A | 11/13/01 | Material from Sieves | ✓ | | | | | | 1 | |
| | AAE-558-H | | | ✓ | | | | | | 1 | |
| | AAE-559-A | | | ✓ | | | | | | 1 | |
| | AAE-560-A | | | ✓ | | | | | | 1 | |
| | AAE-602-B/C | | Clayfing | | ✓ | | | | | 1 | |
| | AAE-603-B/C | | | | ✓ | | | | | 1 | |
| | AAE-604-B/C | 11/14/01 | Asphalt fragment | | ? | | | | | 1 | Possible fingerprinting sample |
| | AAE-561-A | | Material from Sieves | ✓ | | | | | | 1 | |
| | AAE-562-A | | | ✓ | | | | | | 1 | |
| | AAE-563-A | | | ✓ | | | | | | 1 | |
| | AAE-564-A | | | ✓ | | | | | | 1 | |
| | AAE-565-A | | | ✓ | | | | | | 1 | |
| | AAE-566-A | | | ✓ | | | | | | 1 | |
| | AAE-567-A | | | ✓ | | | | | | 1 | |
| | AAE-568-A | | | ✓ | | | | | | 1 | |
| | AAE-569-A | | | ✓ | | | | | | 1 | |
| | AAE-570-A | | | ✓ | | | | | | 1 | |

(3 jars for PAH/TPH ~~14 shot AAE~~ this page)
17 this page

Total No. of Containers

Shipment Method: FEDEX

Special Requirements or Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature: [signature] | 11/14/01 | 1145 | Signature | | |
| Printed Name: NANCY KOHN | | | Printed Name | | |
| Company: BATTELLE | | | Company | | |

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| Signature | | | Signature | | |
| Printed Name | | | Printed Name | | |
| Company | | | Company | | |

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2. Return pink copy to Project file or to project manager.
3. Laboratory to return signed white copy to Battelle for project files

**Battelle**
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY



Shipped To: LIZ VONCKX Telephone: 510 599 8096

Company: BATTELLE

Address: ALAMEDA POINT BOAT HOUSE

Method of Shipment: HAND CARRY

Shipped From (Location): SKEET RANGE, ALAMEDA By (Person): N KOHN

Container No.: 8 Short Cores

Sampling Location: SKEET RANGE STATIONS SK-10, SK-11, SK-12, SK-13

Samples Collected By: N KOHN, L DAMS, TEG Date (s): 11/06/01

Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-007 | 11/06/01 | 1142 | 1of1 |
| AAE-008 | 11/06/01 | 1142 | 1of1 |
| AAE-009 | 11/06/01 | 1250 | 1of1 |
| AAE-010 | 11/06/01 | 1250 | 1of1 |
| AAE-019 | 11/06/01 | 1320 | 1of1 |
| AAE-020 | 11/06/01 | 1320 | 1of1 |
| AAE-017 | 11/06/01 | 1402 | 1of1 |
| AAE-018 | 11/06/01 | 1402 | 1of1 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| [signature] | 11/06/01 / 1515 | [signature] | 11/06/01 / 1515 |
| | | | |

BC-1800-193 (06/94)

Battelle
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

PAGE 1 OF 1

Shipped To: (HAND CARRIED) LIZ VONCKX Telephone: 570-599-8096

Company: BATTELLE

Address: ALAMEDA POINT BOATHOUSE, SEAPLANE LAGOON

Method of Shipment: HAND CARRY

Shipped From (Location): SKEET RANGE, ALAMEDA PT By (Person): C GAGNON

Container No.: 2

Sampling Location: SK-3, Skeet Range

Samples Collected By: KOHN, GAGNON, DRAUB, TEG Date (s): 11/06/01

Remarks:

## Sample Identification

AAE-005 1 of 1 CORE B 11/06/01 0956

AAE-006 1 of 1 CORE A 11/06/01 0943

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| NANCY KOHN | 11/06/01 1020 | Karen Beardley | 11/06/01 11 AM |
| | | | |

BC-1800-193 (06/94)

Battelle
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

Pg 1 of 1

Shipped To: LIZ VONCKX Telephone: 510 599 8096
Company: BATTELLE
Address: ALAMEDA POINT BOAT HOUSE
Method of Shipment: HAND CARRY
Shipped From (Location): SKEET RANGE, ALAMEDA PT By (Person): N KOHN

Container No.: 8 short cores
Sampling Location: SKEET RANGE ALAMEDA
Samples Collected By: KOHN, DAVIS, TEG Date (s): 11/07/01
Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-032 | 1of1 | 11/07/01 | 1412 |
| AAE-021 | 1of1 | 11/07/01 | 1357 |
| AAE-022 | 1of1 | 11/07/01 | 1357 |
| AAE-023 | 1of1 | 11/07/01 | 1256 |
| AAE-024 | 1of1 | 11/07/01 | 1256 |
| AAE-025 | 1of1 | 11/07/01 | 1211 |
| AAE-026 | 1of1 | 11/07/01 | 1211 |
| AAE-031 | 1of1 | 11/07/01 | 1412 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| [signature] | 11/07/01 / 1435 | [signature] | 11/7/01 1435 |
| | | | |

BC-1800-193 (06/94)

**Battelle**
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

1 of 1

Shipped To: LIZ VONCKX Telephone: 510 549-8096
Company: BATTELLE
Address: ALAMEDA PT BOAT HOUSE
Method of Shipment: HAND CARRY
Shipped From (Location): SKEET RANGE By (Person): NKOHN

Container No.: 8 short cores
Sampling Location: Skeet Range, Alameda Pt.
Samples Collected By: KOHN, GAGNON, DAVIS, TEG Date (s): 11/07/01
Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-29 | 1of1 | 11/07/01 | 0959 |
| AAE-30 | 1of1 | 11/07/01 | 0959 |
| AAE-11 | 1of1 | 11/07/01 | 0942 |
| AAE-12 | 1of1 | 11/07/01 | 0942 |
| AAE-28 | 1of1 | 11/07/01 | 1045 |
| AAE-27 | 1of1 | 11/07/01 | 1045 |
| AAE-15 | 1of1 | 11/07/01 | 0921 |
| AAE-16 | 1of | 10/07/01 | 0921 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| NANCY KOHN | 11/07/01 / 1115 | [illegible] | 11/07/01 / 1125 |
| | | | |

BC-1800-193 (06/94)

**Battelle**
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

1 OF 1

Shipped To: LIZ VONCKX Telephone: 510 599 8096
Company: BATTELLE
Address: ALAMEDA POINT BOAT HOUSE
Method of Shipment: HAND CARRY
Shipped From (Location): SKEET RANGE By (Person): NKOHM

Container No.: 6 SHOT CORES
Sampling Location: SKEET RANGE
Samples Collected By: KOHM, GAMONON, DAMS W/ TEG Date (s): 11/08/01
Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-049 | 1 of 1 | 11/08/01 | 1053 |
| AAE-045 | 1 of 1 | 11/08/01 | 1249 |
| AAE-050 | 1 of 1 | 11/08/01 | 1053 |
| AAE-046 | 1 of 1 | 11/08/01 | 1249 |
| AAE-048 | 1 of 1 | 11/08/01 | 1122 |
| AAE-047 | 1 of 1 | 11/08/01 | 1122 |
| ~~AAE-~~ | ~~1 of 1~~ | ~~11/08/01~~ | ~~NK~~ |
| ~~AAE-~~ | ~~1 of~~ | ~~11/08/01~~ | 11/08/01 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| [signature] | 11/08/01 1300 | EW Vonckx | 11/08/01 1300 |
| | | | |

BC-1800-193 (06/94)

**Battelle**
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

1 OF 1

Shipped To: LIZ VONCKK Telephone: 510 599 8096
Company: BATTELLE
Address: BOAT HOUSE, ALAMEDA POINT
Method of Shipment: HAND CARRY
Shipped From (Location): SKEET RANGE, ALAMEDA PT By (Person): NKOHN

Container No.: 8 SHORT CORES
Sampling Location: SKEET RANGE (SHORT CORE STATIONS
Samples Collected By: KOHN, GAGNON, DAVIS, TEG Date (s): 11/08/01
Remarks:

**Sample Identification**

| | | | |
|---|---|---|---|
| AAE-037 | 1of1 | 11/08/01 | 0952 |
| AAE-038 | 1of1 | 11/08/01 | 0952 |
| AAE-040 | 1of1 | 11/08/01 | 0928 |
| AAE-035 | 1of1 | 11/08/01 | 0852 |
| AAE-039 | 1of1 | 11/08/01 | 0928 |
| AAE-036 | 1of1 | 11/08/01 | 0852 |
| AAE-034 | 1of1 | 11/08/01 | 0842 |
| AAE-033 | 1of1 | 11/08/01 | 0842 |

**Chain of Possession**

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| NANCY KOHN | 11/08/01 1000 | Liz Vonckx | 11/08/01 1000 |
| | | | |

BC-1800-193 (06/94)

**Battelle**
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

1 OF 1

Shipped To: LIZ VONCKX Telephone: 510 599 8096

Company: BATTELLE

Address: ALAMEDA POINT BOAT HOUSE

Method of Shipment: HAND CARRY

Shipped From (Location): SKEET RANGE By (Person): N KOHN

Container No.: 8 SHORT CORA

Sampling Location: SKEET RANGE, ALAMEDA POINT

Samples Collected By: Kohn, Gagnon, Davis, w/TEG Date (s): 11/08/01

Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-051 | 1 of 1 | 11/08/01 | 1505 |
| AAE-052 | 1 of 1 | 11/08/01 | 1505 |
| AAE-041 | 1 of 1 | 11/08/01 | 1435 |
| AAE-042 | 1 of 1 | 11/08/01 | 1435 |
| AAE-043 | 1 of 1 | 11/08/01 | 1350 |
| AAE-044 | 1 of 1 | 11/08/01 | 1350 |
| AAE-053 | 1 of 1 | 11/08/01 | 1550 |
| AAE-054 | 1 of 1 | 11/80/80 | 1550 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| NANCY KOHN | 11/08/01 1620 | VIRGINIA LAU | 11/8/01 1620 |
| | | | |

BC-1800-193 (06/94)

Battelle
Marine Sciences Laboratory
1529 W. Sequim Bay Road
Sequim, Washington 98382

# FIELD SAMPLE CHAIN OF CUSTODY

PAGE 1 OF 1

Shipped To: LIZ VONCKX
Telephone: 510 599-8096
Company: BATTELLE
Address: ALAMEDA POINT BOATHOUSE
Method of Shipment: HAND CARRY
Shipped From (Location): ALAMEDA POINT SKEET RANGE By (Person): N KOHN

Container No.: 8 SHORT CORES
Sampling Location: ALAMEDA POINT SKEET RANGE - NEAR SHORE STATION
Samples Collected By: KOHN, DAVIS W/TEG Date (s): 11/09/01
Remarks:

## Sample Identification

| | | | |
|---|---|---|---|
| AAE-055 | 1 of 1 | 11/09/01 | 1005 |
| AAE-056 | 1 of 1 | 11/09/01 | 1005 |
| AAE-057 | 1 of 1 | 11/09/01 | 1038 |
| AAE-058 | 1 of 1 | 11/09/01 | 1038 |
| AAE-059 | 1 of 1 | 11/09/01 | 1124 |
| AAE-060 | 1 of 1 | 11/09/01 | 1124 |
| AAE-061 | 1 of 1 | 11/09/01 | 1225 |
| AAE-062 | 1 of 1 | 11/09/01 | 1225 |

## Chain of Possession

| Relinquished by | Date/Time | Received by | Date/Time |
|---|---|---|---|
| NANCY KOHN | 11/09/01 / 1330 | EW Vonckx | 11/09/01 / 1330 |
| | | | |

BC-1800-193 (06/94)

# APPENDIX C

# Core Data

Battelle
. . . Putting Technology To Work

Survey ID: AAE
Facility Name: Alameda Point
Project Title: Skeet Range Evaluation

Core Descriptor (Station): SK-1 Core Sample ID: AAE-001

Logged by: N. Kohn and L. Vonckx Date: 11/5/01 Page 1 of 3

| Depth below water surface (cm) | Depth below mudline (cm) | Lithology | Dilatancy | Type | Color | Consistency | Cementation | Structure | HCl reaction | Maximum particle size | Odor | Samples | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | N/A | CL | 2.5Y4/1 dark gray | VS | N | H | N/A | Z | N | See Table 6 for Radioisotope, PAH, and TPH-DRO sample information | Ampelisca tubes at surface |
| | 10 | | | | 2.5Y3/1 very dark gray | | | | | | | | Black streaking 7-10 cm |
| | 20 | | | | | | | | | | | | Transition from dark gray to very dark gray at 10 cm |
| | 30 | | | | | S | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | 50 | | | | | F | | | | VFS | | | |
| | 60 | | | | | | | | | | | | Mollusk at 63 cm |
| | 70 | | | | | | | | | | | | |
| | 80 | | | | | | | | | | | | Clamshell at 78-79 cm |
| | 90 | | | | | | | | | | | | Mollusk (mussel) at 91 cm |
| | 100 | | | | | | | | | | | | |
| | 110 | | | | | | | | | | | | Mollusk at 109 cm |

Battelle
. . . Putting Technology To Work

Survey ID: AAE
Facility Name: Alameda Point
Project Title: Skeet Range Evaluation

Core Descriptor (Station): SK-2 Core Sample ID: AAE-003

Logged by: N. Kohn and L. Vonckx Date: 11/5/01 Page 2 of 3

| Depth below water surface (cm) | Depth below mudline (cm) | Lithology | Dilatancy | Type | Color | Consistency | Cementation | Structure | HCl reaction | Maximum particle size | Odor | Samples | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | N/A | CL | 2.5Y3/1 very dark gray | VS ↓ S | N | H | N/A | Z | N | See Table 6 for Radioisotope, PAH, and TPH-DRO sample information | Ampelisca tubes at surface |
| | 10 | | | | | | | | | | | | Black streaking 5-7 cm |
| | 20 | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | Black streaking 36-39 cm |
| | 50 | | | | | F | | | | | | | |
| | 60 | | | | | | | | | | | | |
| | 70 | | | | | | | | | | | | |
| | 80 | | | | | | | | | | | | |
| | 90 | | | | | S ↓ F | | | | | | | |
| | 100 | | | | | | | | | | | | |
| 111 | 110 | | | | | | | | | | | | Mollusk shells at 105-110 cm |

Battelle
. . . Putting Technology To Work

Survey ID: AAE
Facility Name: Alameda Point
Project Title: Skeet Range Evaluation

Core Descriptor (Station): SK-3 Core Sample ID: AAE-005

Logged by: N. Kohn and L. Vonckx Date: 11/6/01 Page 3 of 3

| Depth below water surface (cm) | Depth below mudline (cm) | Lithology | Dilatancy | Type | Color | Consistency | Cementation | Structure | HCl reaction | Maximum particle size | Odor | Samples | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | N/A | CL | 2.5Y4/1 dark gray | VS | N | H | N/A | Z | N | See Table 6 for Radioisotope, PAH, and TPH-DRO sample information | No Ampelisca tubes at surface |
| | 10 | | | | 2.5Y3/1 very dark gray | S | | | | | | | |
| | 20 | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | 50 | | | | 2.5Y2.5/1 black | F | | | | | | | |
| | 60 | | | | | | | | | | | | |
| | 70 | | | | 2.5Y3/1 | | | | | | | | |
| | 80 | | | | | | | | | | | | |
| | 90 | | | | | | | | | | | | |
| | 100 | | | | | | | | | | | | |
| | 110 | | | | | | | | | | | | |
| | 120 | | | | | | | | | | | | |
| | 130 | | | | | | | | | | | | |
| 142 | 140 | | | | | | | | | | | | |