



**FINAL**

22 DECEMBER 2014

# **Remedial Action Summary Report Free Product Recovery**

SWMU 62 New Housing Fuel Leak Area,  
Area 303, and Additional Sites

CONTRACT NO. N44255-09-D-4005  
LTM/O TASK ORDER 77

## **Former Naval Complex**

Adak, Alaska

**Department of the Navy**

**Naval Facilities Engineering Command Northwest**

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FINAL  
REMEDIAL ACTION SUMMARY REPORT  
FREE PRODUCT RECOVERY

DECEMBER 22, 2014

SWMU 62 NEW HOUSING FUEL LEAK AREA, AREA 303,  
AND ADDITIONAL SITES

FORMER NAVAL COMPLEX  
ADAK ISLAND, ALASKA

SEALASKA ENVIRONMENTAL SERVICES, LLC  
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## EXECUTIVE SUMMARY

The U.S. Navy, through Naval Facilities Engineering Command Northwest, tasked Sealaska Environmental Services, LLC with monthly monitoring and remedial action recovery of free product petroleum from groundwater and with boom placement and maintenance for surface water protection at six sites located at the Former Naval Complex, Adak, Alaska. All site activities were performed in accordance with the Operations and Maintenance Plan (Sealaska 2013a) and Quality Control Plan (Sealaska 2013b) for Free Product Recovery at Former Naval Complex, Adak, Alaska. This report summarizes the monitoring and remedial action activities completed during the period from October 2013 through September 2014 and whether endpoint criteria were achieved as established by the U.S. Navy, U.S. Environmental Protection Agency, and Alaska Department of Environmental Conservation in Records of Decision.

The total product recovered during the annual reporting period is listed by site in Table ES-1.

**Table ES-1.** Total Free Product Recovery, October 2013 to September 2014

Site	Number of Wells With Recoverable Product	Total Product Recovered (gal)
SWMU 62 (Eagle Bay)	5	12.41
Area 303	0	0.0
NMCB Area	2	1.40
SA80 Steam Plant 4	3	1.28
SWMU 60 Tank Farm A	0	0.0
Former Power Plant T-1451	3	8.68
Total Product Recovered	--	23.77

*Notes:*

gal – gallons

NMCB – Naval Mobile Construction Battalion

SA – Source Area

SWMU – Solid Waste Management Unit

### SOLID WASTE MANAGEMENT UNIT 62, NEW HOUSING FUEL LEAK AREA

During monthly free product recovery activities for the reporting period, a total of 12.41 gallons of free product were recovered from monitoring wells and recovery sumps at Solid Waste Management Unit 62, New Housing Fuel Leak Area. The maximum rolling 6-month average of product recovered during this period was 1.55 gallons. Free product was detected at or greater than 0.01 feet at least once in three of the six recovery sumps. During the reporting period, measurable free product was recovered from two of the recovery sumps and three of the monitoring wells.

Wells at this site met the practical endpoint criteria of less than 5 gallons per month for the 6-month rolling average recovery of free product over a 12-month period. However, the site did not meet the remedial objectives of less than 0.01 feet of detectable free product in the recovery trench sumps.

### **Summary of Recommended Changes**

The following changes to the free product activities are recommended at the Solid Waste Management Unit 62, New Housing Fuel Leak Area:

- Because of the continued observance of free product, continue to conduct periodic monitoring and free product recovery activities at all six recovery sumps and the following five wells: 03-101, 03-102, HMW-303-11, MW-303-8, and RW-303-15.
- Because product was not observed on groundwater during October 2013 through September 2014, it is recommended that product recovery be discontinued at wells HMW-303-03, MW-15, MW 303-12, and RW-303-4.
- During the 2014 Long-Term Monitoring field event, 0.61 feet of product was observed in well MW-303-16. It is recommended that free product recovery be performed at this well during the October 2014 through September 2015 reporting period.

### **AREA 303**

No free product was observed in any of the monitoring wells, and no product was recovered, during the October 2013 through September 2014 reporting period.

### **Summary of Recommended Changes**

The following changes to the free product activities are recommended at Area 303:

- Free product recovery at the three wells currently monitored should be discontinued.

### **ADDITIONAL SITES**

During monthly free product recovery activities for the reporting period, a total of 11.36 gallons of free product were recovered from monitoring wells at the four additional petroleum sites: Naval Mobile Construction Battalion Expanded Area; Source Area 80, Steam Plant 4; Solid Waste Management Unit 60, Tank Farm A; and Former Power Plant, Building T-1451.

## Summary of Recommended Changes

The following changes to the free product activities are recommended for the additional sites:

- At Solid Waste Management Unit 60, Tank Farm A, although the volume of free product observed in the wells was too small (thin layer only) for recovery, measureable product was detected in one well, 653, during one of the six monitoring events. It is recommended that monitoring and product recovery (if needed) continue at this well for one additional reporting period (one year) due to the continued presence of the downgradient seep on Sweeper Creek (Boom 10). It is further recommended that product recovery activities be discontinued at well 652 since product was not observed at this location from October 2013 through September 2014.
- Continue free product recovery at all wells at Source Area 80, Steam Plant 4 and Naval Mobile Construction Battalion Expanded Area during the October 2014 through September 2015 reporting period.
- During the 2104 Long-Term Monitoring field event, 1.02 feet of product was observed in well NMCB-08 at Naval Mobile Construction Battalion Expanded Area site. It is recommended that free product recovery be initiated at this well and continued during the October 2014 through September 2015 reporting period.
- Product was not observed in Naval Mobile Construction Battalion Expanded Area well 02-497 between October 2013 and September 2014; therefore it is recommended that product recovery activities be discontinued at this well.
- At Former Power Plant, Building T-1451, continue free product recovery at the three currently monitored wells during the October 2014 through September 2015 reporting period.
- At South of Runway 18/36, monitoring during the 2014 Long-Term Monitoring field event observed 0.31 feet of product in well E-216 and 0.03 feet of product in well RW-18/36-04. It is recommended that free product recovery be initiated at these wells and continued during the October 2014 through September 2015 reporting period.

## **FREE PRODUCT MONITORING UNDER THE ADAK LONG-TERM MONITORING PROGRAM**

To ensure that free product does not migrate and that groundwater flows do not significantly change in the future, annual monitoring for free product will be conducted for the entire set of wells under the Adak Long-Term Monitoring Program, scheduled for August/September 2015.

## **BOOM INSPECTION AND MAINTENANCE**

Eight booms were maintained in East Canal and South Sweeper Creek to prevent the migration of petroleum sheen from shoreline seeps to downgradient surface water bodies. Each boom was maintained and inspected on a monthly basis throughout the reporting period or until it was discontinued and removed. Sheen was observed at boom locations in East Canal and one location in South Sweeper Creek lagoon during most inspections, but the booms effectively controlled the surface water sheen and prevented downstream migration.

### **Summary of Recommended Changes**

The following changes to boom maintenance activities are recommended:

- Continue periodic inspection and maintenance activities for all current booms located in East Canal and South Sweeper Creek.
- High water events continue to occur frequently in East Canal. During the high water periods, monitoring of the seeps and boom maintenance is often difficult. The pumps used to moderate the water levels in the canals are operated by Alaska Department of Transportation to prevent water from flowing over the airport runways. The U.S. Navy should continue to work with Alaska Department of Transportation to determine an appropriate schedule for dewatering the canals that will lessen the impact of high water on the free product monitoring and maintenance events.

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## ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT	Alaska Department of Transportation
AST	aboveground storage tank
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BTOC	below top of casing
CY	contract year
DOI	U.S. Department of the Interior
GCI	General Communication, Inc.
JP-5	jet propellant 5
kg/m <sup>3</sup>	kilograms per cubic meter
LTM	long-term monitoring
MLLW	mean lower low water
MNA	Monitored Natural Attenuation
Navy	U.S. Navy
NMCCB	Naval Mobile Construction Battalion
NORPAC	North Pacific
O&M	operation and maintenance
OU	Operable Unit
PVC	polyvinyl chloride
ROD	Record of Decision
SA	Source Area
Sealaska	Sealaska Environmental Services, LLC
SAERA	State-Adak Environmental Restoration Agreement
SWMU	solid waste management unit
TAC	The Aleut Corporation
TO	task order
TtEC	Tetra Tech EC, Inc.
URS	URS Group, Inc.
URSG	URS Greiner, Inc.

## **1. INTRODUCTION**

On April 25, 2013, Naval Facilities Engineering Command Northwest awarded Task Order (TO) 77 under Contract N44255-09-D-4005 to Sealaska Environmental Services, LLC (Sealaska) to be performed at the Former Naval Complex, Adak, Alaska (Figure 1-1). This TO includes:

- Operation and maintenance (O&M) activities related to fuel recovery at: Solid Waste Management Unit (SWMU) 62, New Housing Fuel Leak Area, Area 303, and several other wells at various sites.
- Boom maintenance activities (for protection of surface waters) at selected locations.

### **1.1 PRODUCT RECOVERY REQUIREMENTS**

The Final Decision Document for SWMU 62, New Housing Fuel Leak Area, was approved on August 7, 2006. In 2006, additional monitoring wells and a recovery trench were installed adjacent to East Canal. The final decision document required that product recovery be restarted and continued until the technically practicable endpoint for free product recovery was achieved. As defined in the Operable Unit (OU) A Record of Decision (ROD):

“The practicable endpoint for recovery will be reached when the monthly volume of recovered product, averaged over the most recent 6 months (6-month moving average), is less than 5 gallons per month for a period of 12 months of product recovery.”

In addition, the final decision document required that recovery from the free product recovery trench continue until free product had been reduced to thicknesses less than 0.01 feet or until no sounding of the oil/water interface probe had been experienced for 1 year or more.

Area 303 was added to the program beginning in June 2013 as required in the Final Decision Document (URS 2012). Four recovery wells (MW-303-38 through -41) and six monitoring wells (MW-303-42 through -47) were installed in this area in 2012 to better define the extent of petroleum-impacted groundwater (URS 2013).

Free product recovery activities are also conducted at four additional petroleum sites located throughout the Former Naval Complex. These sites include Naval Mobile Construction Battalion (NMCB); Source Area (SA) 80, Steam Plant 4; SWMU 60, Tank Farm A; and Former Power Plant, Building T-1451. The locations of these free product recovery

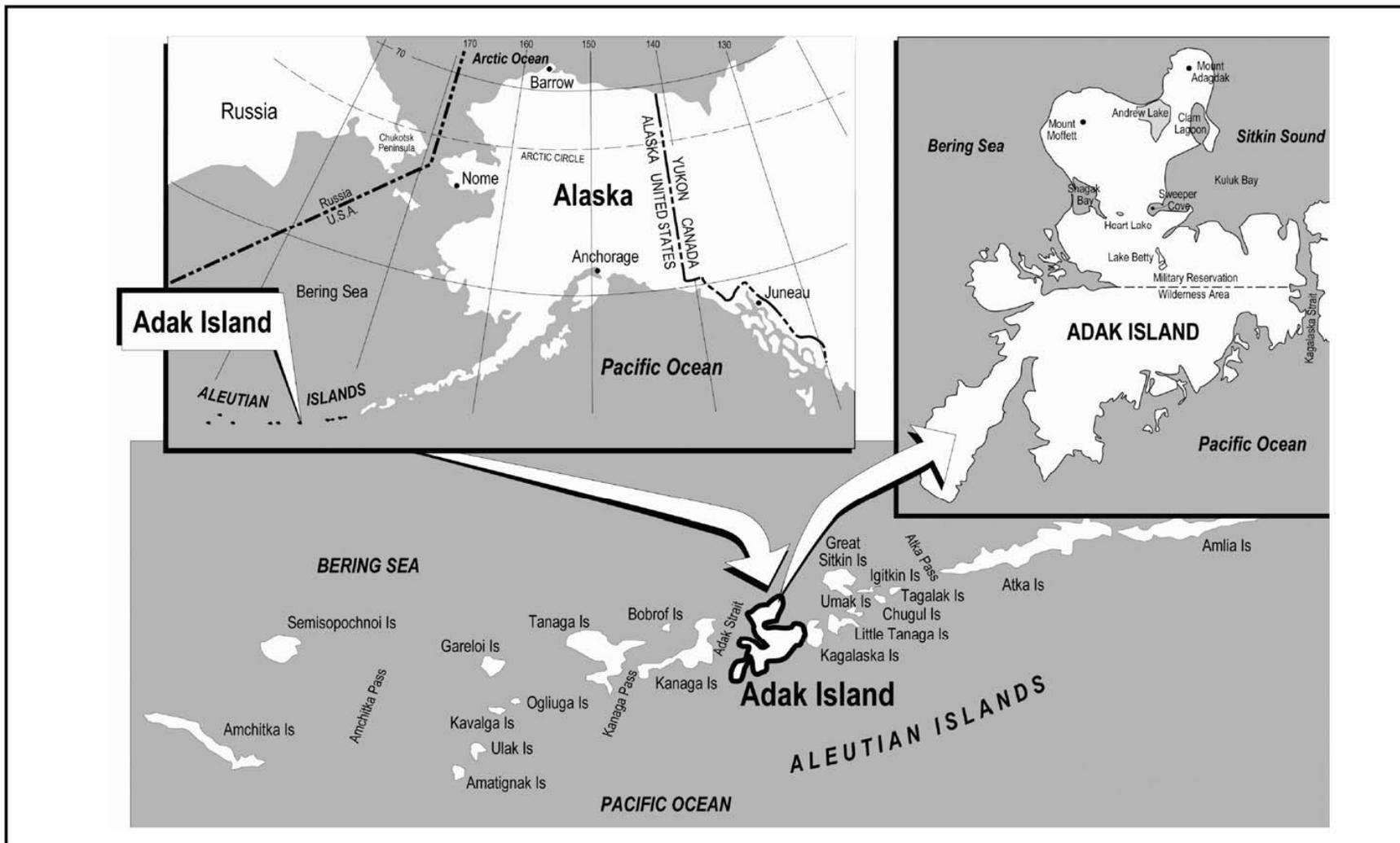
petroleum sites are shown in Figure 1-2. Monitoring at Former Power Plant, Building T-1451 was initiated in June 2013, following the removal action and installation of monitoring wells there (URS 2013).

Per approval by ADEC, the monthly free product recovery was reduced to six events per year beginning in October 2011.

## **1.2 PURPOSE OF REPORT**

This report summarizes and documents product recovery activities that occurred between October 2013 and September 2014 for SWMU 62, New Housing Fuel Leak Area; Area 303; and four additional petroleum sites at the Former Naval Complex, Adak, Alaska. Results are measured against the technically practicable endpoints established in the final decision documents, where applicable. In addition, information presented in previously prepared reports on removal actions at the sites are summarized, as are the boom maintenance activities that occurred during the reporting period.

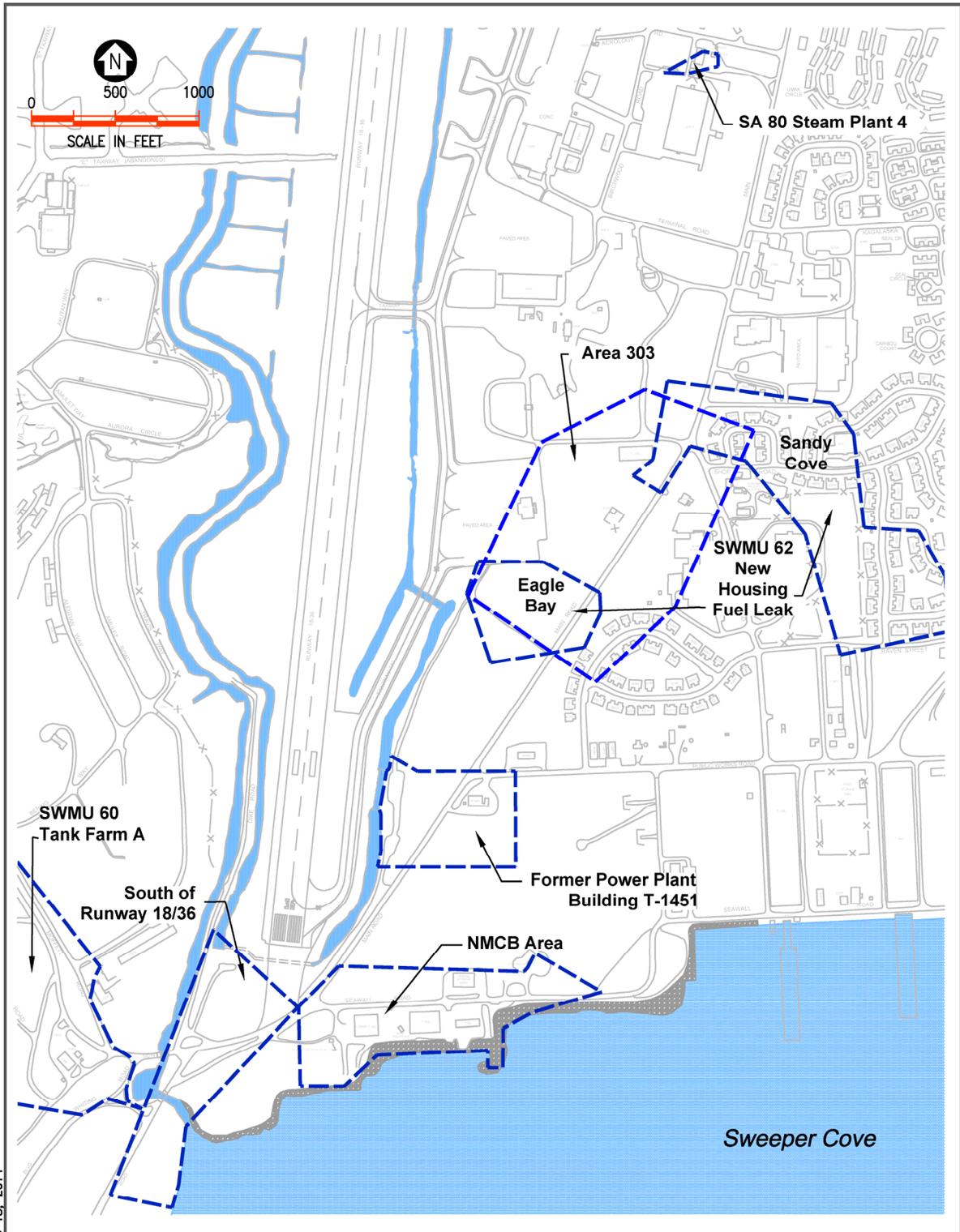
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**SEALASKA**

**Figure 1-1**  
**Location Map, Adak Island, Alaska**

Task Order 77  
 Remedial Action  
 Summary Report  
 Adak , AK



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 PLOT/UPDATE: DEC 18, 2014

<p><b>U.S.NAVY</b></p>	<p><b>SEALASKA</b></p>	<p align="center"><b>Figure 1-2</b>  <b>Free Product Recovery Sites</b></p>	<p>Task Order 77                  Remedial Action                  Summary Report                  Adak, Alaska</p>
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## **2. SWMU 62, NEW HOUSING FUEL LEAK AREA**

### **2.1 SITE DESCRIPTION**

The SWMU 62, New Housing Fuel Leak Area, is located in the downtown area of Adak Island (Figure 1-2). It is east of Runway 18-36, north of Public Works Road, west of Bayshore Highway, and south of Kagalaska Drive. The SWMU 62, New Housing Fuel Leak Area, consists primarily of personnel housing units: Sandy Cove Housing (88 units), Eagle Bay Housing (33 units), and Turnkey Housing (15 units). Each housing unit contains of between two and four condos. Eagle Bay Housing and Turnkey Housing are no longer occupied. All three housing areas occupy approximately 100 acres that include open areas between the separate housing complexes. Two school buildings (one unoccupied), their associated play yards, and miscellaneous public facilities are adjacent to the SWMU 62, New Housing Fuel Leak Area, but are not included as part of the site itself. Free product recovery activities occur on the Eagle Bay Housing portion of the site located south of the airport terminal (Figure 2-1).

The ground surface surrounding the housing units at SWMU 62, New Housing Fuel Leak Area, consists of grass-covered residential lawns, paved streets, sidewalks, and driveways. The general topography of the site is flat to slightly undulating, with surface drainage predominantly collected and discharged to surface water bodies by ditches and the storm sewer system. Ground surface elevations in this area are generally about 24 to 30 feet above mean lower low water (MLLW). The more regional topography typically slopes gently downward toward the west and southwest. However, the topography in the northeast portion of the Sandy Cove Housing and Turnkey Housing areas slopes downward toward the northeast.

Prior to the military use of Adak Island during World War II, the western portion of the downtown area was occupied by a back-beach lagoon. The lagoon was separated from Kuluk Bay by a series of sand dunes located in the eastern portion of the downtown area, a section of which is currently occupied by the SWMU 62, New Housing Fuel Leak Area. Aerial photos of Adak Island taken before the arrival of military forces indicate the presence of small lakes or ponds within low-lying areas between the dunes. The lagoon was filled with sand and rock by the military forces to construct the airfield. The site occupied by the SWMU 62, New Housing Fuel Leak Area, was the source of a substantial portion of the fill material placed into the lagoon. The low-lying areas containing small lakes or ponds within the boundaries of the site were also filled as military construction progressed.

## **2.2 GEOLOGY AND GROUNDWATER**

Groundwater is found as both a perched aquifer (laterally discontinuous) and a regional aquifer beneath the SWMU 62, New Housing Fuel Leak Area. Perched groundwater occurs approximately 8 to 12 feet below ground surface (bgs) beneath Sandy Cove Housing and Turnkey Housing. This perched groundwater collects on top of the lower permeability, organic-rich silt layers believed to represent bottom sediments deposited within small lakes or ponds formerly located at the site. Boring logs from investigations conducted in the area indicated that perched water-bearing zones are less prevalent beneath Eagle Bay Housing (URSG 1999b). In this area the regional aquifer is encountered between approximately 18 feet bgs in the vicinity of Unit 139 (northeast of the Elementary School) to about 30 feet bgs west of Eagle Bay Housing.

Groundwater within the regional aquifer beneath Eagle Bay Housing appears to flow generally west toward East Canal of the airport ditch system (Figure 2-2). In the southeast portion of Sandy Cove Housing, groundwater flow becomes more southward, toward Sweeper Cove. In the northeast portion of Sandy Cove Housing and some or all of Turnkey Housing, groundwater appears to flow east-northeast toward Kuluk Bay based on depth to groundwater measured during the previous long-term monitoring (LTM) field events. The 2013 LTM field measurements and the resulting calculated groundwater surface elevations are presented in Appendix C, Table C-1. A more detailed description of the hydrogeology at the site is provided in the Focused Feasibility Study (URS 2005).

The downtown aquifer that underlies SWMU 62, New Housing Fuel Leak Area, is not currently used as a source of drinking water, nor is it reasonably expected to serve as a potential future source of drinking water (URS 2005). In addition, there is a land use restriction prohibiting the domestic use of groundwater in the downtown area (DOI, BLM, and TAC 2004).

## **2.3 RELEASE HISTORY**

During 1988 and 1989, the U.S. Navy (Navy) conducted inventory record reviews and visual site inspections in housing units and crawl spaces after occupants reported hydrocarbon-like odors. Five leaks in the heating fuel piping were discovered and repaired. The heating fuel distribution system was subsequently pressure tested to assess the extent of potential releases. Sixteen additional piping leaks were detected and repaired as a result of the pressure testing: 13 in Sandy Cove Housing, two in Eagle Bay Housing, and one in Turnkey Housing. On the basis of these findings, further investigation of the identified releases was undertaken.

Fuel-oil burning furnaces and water heaters located in each housing unit provide heating for living space and water, respectively. Jet Propellant 5 (JP-5) was formerly distributed from large aboveground storage tanks (ASTs) to individual housing units by underground iron piping coated with polyvinyl chloride (PVC). The pipelines include an aviation gasoline distribution system formerly used to provide fuel to truck fill stands along the airfield as well as the primary JP-5 pipelines and associated ASTs that stored fuel for distribution to the individual housing units. Fuel for SWMU 62, New Housing Fuel Leak Area, was stored as follows (EMCON 1996):

- For Sandy Cove Housing: two 30,000-gallon ASTs constructed on raised earthen pads at the junction of Raven Street and Bayshore Highway
- For Eagle Bay Housing: two 12,000-gallon ASTs constructed on raised earthen pads located along Main Road, approximately 400 feet southwest of the high school
- For Turnkey Housing: two 37,000-gallon ASTs constructed on raised earthen pads located north of Kagalaska Drive and northwest of Turnkey Housing

The piping that distributed fuel to the individual housing units consisted of 2-inch diameter main trunk line piping connected to 0.75- or 1-inch diameter lateral lines to housing units. A 0.5-inch diameter copper pipe supplied fuel from the lateral lines to individual units. The fuel distribution system was designed to provide fuel to the housing units under gravity flow. However, booster pumps were reportedly installed to increase fuel flow to housing units near the end of the distribution system.

## **2.4 REMEDIAL ACTIONS**

During 1989, the Navy conducted soil removal actions from under selected housing units where heating fuel was released through piping leaks. Surface soil sampling activities associated with these removal actions consisted primarily of field screening soil samples collected from crawl spaces beneath the housing units where the pipelines had been repaired. Field screening consisted of soil vapor headspace and sheen testing. These activities resulted in the removal of approximately 102 cubic yards of soil (URSG 1999a). The excavated material was replaced with clean sand, and vapor barriers sealed to the housing unit foundations were installed. These remedial actions eliminated surface exposure to released petroleum hydrocarbons in the housing area.

As a result of the release investigations conducted by the Navy, a free product recovery trench and 16 free product recovery sumps were installed in 1989. The recovery system was extensively modified from a dual-stage recovery system to a lower maintenance total-fluids

recovery system during October 1996. The recovery system operated until May 2000 when it was determined to have met the negotiated product recovery endpoints in the OU A ROD for systems dependent on water table depression and thus was shut down (URS 2004).

In July 2006, additional recovery/monitoring wells were installed at the site. Final decision documents for SWMU 62, New Housing Fuel Leak Area, were approved on August 7, 2006. In September 2006, a recovery trench was installed at SWMU 62, New Housing Fuel Leak Area. The final decision document for SWMU 62, New Housing Fuel Leak Area, required that product recovery be restarted and be continued until the technically practicable endpoint for free product recovery is achieved. Currently, free product recovery is accomplished using manual recovery methods (see Section 2.6).

Free product volumes historically recovered from the site through September 2014 are presented in Table 2-1.

## 2.5 GROUNDWATER ELEVATIONS AND PRODUCT THICKNESSES

During product recovery activities at SWMU 62, New Housing Fuel Leak Area, monitoring wells were measured for groundwater levels and the presence of free product. Monthly and average groundwater elevations for each well from October 2013 through September 2014 are presented in Table 2-2. Groundwater elevations were corrected for the presence of free product, where observed, by using the following equation:

$$DTW_C = DTW_M - [ (\rho_{lnapl} / \rho_{water}) * MPT ]$$

Where:  $\rho_{lnapl}$  = density of light non-aqueous phase liquid (diesel - 850 kilograms per cubic meter [kg/m<sup>3</sup>])  
 $\rho_{water}$  = density of water (1,000 kg/m<sup>3</sup>)  
DTW<sub>C</sub> = corrected depth to water  
DTW<sub>M</sub> = measured depth to water  
MPT = measured product thickness

Monthly average groundwater elevations ranged from a low of 2.87 feet above MLLW in September 2013 to a high of 3.80 feet above MLLW in April 2013.

Free product thickness measurements, including minimum, maximum, and average, are presented in Table 2-3. The maximum thickness of measured free product in a monitoring well at SWMU 62, New Housing Fuel Leak Area, was 0.51 feet in well 03-101 in October 2013. Average monthly product thicknesses ranged from 0.01 feet in July 2014 to 0.06 feet in October 2013. From October 2013 through September 2014, free product was detected at least once in eight of the fifteen wells and sumps monitored. Detectable free product was observed in recovery sumps SWMU62-R3, SWMU62-R4, and SWMU62-R5

up to a maximum of 0.18 feet in SWMU62-R3. Recovery sumps SWMU62-R3 and SWMU62-R4 were observed to have detectable product during all six field events during the reporting period. Figure 2-3 shows the thicknesses of product observed in the recovery sumps over the last 12 months.

## **2.6 RECOVERED VOLUMES**

Free product recovery at the site is currently conducted using a combination of hand bailing, passive canisters, and sorbent socks installed in site wells. Table 2-1 provides the volumes recovered since 1989. Prior to the restart of free product recovery in September 2006, both free product and purge water were recovered and included in the gallons recovered in Table 2-1. Beginning in September 2006, product recovery protocols were modified so only free product was recovered from the wells. The total volume of product recovered from the site since the September 2006 startup is approximately 120 gallons. The trend of recovered product volume over time for this site has decreased since product recovery activities were resumed in September 2006 (Figure 2-4).

Table 2-4 lists the average and monthly volume of product recovered from each well. Free product was recovered from five of the fifteen wells/sumps monitored (see Table 2-4) during one or more monitoring events. The maximum total volume of recovered product during the 12 months in any well or sump was 5.89 gallons in sump SWMU62-R3. The total volume of free product recovered during the October 2013 through September 2014 reporting period was 12.41 gallons, and the maximum volume recovered in one month was 2.51 gallons during the October 2013 event. Figure 2-5 illustrates the 6-month moving average for product recovered at SWMU 62, New Housing Fuel Leak Area, during the reporting period. The 6-month moving average of recovery volumes did not exceed the ROD practical endpoint of 5 gallons during the reporting period.

Monthly average groundwater elevation was compared with monthly average product thickness and monthly total recovered product volume (Figure 2-6) to determine whether a relationship exists between fluctuating groundwater elevation and free product observed in the monitored wells. In general, there appears to be a weak correlation between increased product recovery level and thickness with decreased water table elevation in this area.

## **2.7 COMPARISON OF PRODUCT RECOVERY TO ENDPOINT CRITERIA**

Free product recovery information obtained from September 2006 through September 2014 was used to determine whether product recovery activities have been effective. The monthly volume of product recovered has been decreasing since September 2006 (Figure 2-5). Monthly average free product recovery has been below 5 gallons since November 2006. The

6-month moving average for the reporting period ranged from 0.56 gallons in March 2013 to 1.55 gallons in September 2013 (Table 2-4). Therefore, the technically practical endpoint of less than five gallons per monthly recovery state in the ROD has been met at this site.

However, the practicable endpoint for the recovery trenches has not met the remedial objectives; therefore, free product recovery will continue. In three of the six recovery sumps, product was observed at greater than the ROD endpoint of 0.01 during at least one sampling event throughout the reporting period.

**Table 2-1.** Historical Free Product Recovery Data, SWMU 62, New Housing Fuel Leak Area

Date	Gallons Recovered								
CY 1989	70,000	Jan-06	---	Jan-07	0.49	Jan-08	0.47	Jan-09	0.36
CY 1990	12,000	Feb-06	---	Feb-07	0.26	Feb-08	1.66	Feb-09	0.13
CY 1991	6,500	Mar-06	---	Mar-07	1.73	Mar-08	0.58	Mar-09	4.09
CY 1992	3,000	Apr-06	---	Apr-07	1.42	Apr-08	1.09	Apr-09	0.33
CY 1993	---	May-06	---	May-07	1.36	May-08	0.24	May-09	0.14
CY 1994	26,000	Jun-06	---	Jun-07	1.39	Jun-08	0.53	Jun-09	0.97
CY 1995	11,000	Jul-06	---	Jul-07	1.81	Jul-08	0.33	Jul-09	0.68
CY 1996	13,400	Aug-06	---	Aug-07	2.09	Aug-08	0.36	Aug-09	0.43
CY 1997	9,500	Sep-06	15.75	Sep-07	2.21	Sep-08	0.68	Sep-09	0.81
CY 1998	1,600	Oct-06	5.59	Oct-07	1.58	Oct-08	0	Oct-09	0.29
CY 1999	500	Nov-06	4.63	Nov-07	0.9	Nov-08	0.11	Nov-09	0.51
CY 2000 - 2005	---	Dec-06	3.88	Dec-07	0.72	Dec-08	0.24	Dec-09	0.43
<b>Total</b>	<b>153,500</b>	<b>2006 Total</b>	<b>29.85</b>	<b>2007 Total</b>	<b>15.95</b>	<b>2008 Total</b>	<b>6.29</b>	<b>2009 Total</b>	<b>9.73</b>
Jan-10	0.58	Jan-11	NM	Jan-12	NM	Jan-13	NM	Jan-14	NM
Feb-10	0.92	Feb-11	1.5	Feb-12	NM	Feb-13	NM	Feb-14	NM
Mar-10	0.3	Mar-11	1.48	Mar-12	NM	Mar-13	NM	Mar-14	NM
Apr-10	0.21	Apr-11	NM	Apr-12	1.41	Apr-13	2.53	Apr-14	2.20
May-10	0.5	May-11	1.82	May-12	NM	May-13	NM	May-14	NM
Jun-10	1.77	Jun-11	0.88	Jun-12	1.47	Jun-13	2.32	Jun-14	2.04
Jul-10	0.82	Jul-11	0.39	Jul-12	0.45	Jul-13	2.22	Jul-14	1.90
Aug-10	1.9	Aug-11	2.33	Aug-12	NM	Aug-13	NM	Aug-14	NM
Sep-10	2.63	Sep-11	2.35	Sep-12	0.8	Sep-13	2.22	Sep-14	1.74
Oct-10	2.2	Oct-11	1.88	Oct-12	1.12	Oct-13	2.51		
Nov-10	1.91	Nov-11	NM	Nov-12	NM	Nov-13	NM		
Dec-10	1.69	Dec-11	0.63	Dec-12	2.23	Dec-13	2.02		
<b>2010 Total</b>	<b>15.43</b>	<b>2011 Total</b>	<b>13.26</b>	<b>2012 Total</b>	<b>7.48</b>	<b>2013 Total</b>	<b>13.82</b>	<b>2014 Total</b>	<b>7.88</b>

*Notes:*

Gallons recovered for years between 1989-1999 include purge water

CY – contract year

NM – not measured

Source: URS Group (2005), TtEC ( 2005), and current report

**Table 2-2.** Corrected Groundwater Elevation Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-13 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
03-101	26.01	26.00	3.93	NM	2.19	NM	NM	NM	4.72	NM	4.42	4.29	NM	3.45	2.19	4.72	3.83
03-102	17.27	18.50	3.45	NM	3.67	NM	NM	NM	4.34	NM	3.86	3.96	NM	3.07	3.07	4.34	3.73
HMW-303-3	31.64	31.20	4.54	NM	4.80	NM	NM	NM	5.25	NM	5.00	4.57	NM	3.86	3.86	5.25	4.67
HMW-303-11	30.35	32.50	4.18	NM	4.47	NM	NM	NM	4.96	NM	4.67	4.54	NM	3.69	3.69	4.96	4.42
MW-15	20.96	22.00	3.56	NM	3.80	NM	NM	NM	4.39	NM	4.00	4.03	NM	3.14	3.14	4.39	3.82
MW-303-8	27.20	30.00	5.21	NM	5.61	NM	NM	NM	5.87	NM	5.81	5.16	NM	4.42	4.42	5.87	5.35
MW-303-12	25.64	35.50	5.01	NM	5.39	NM	NM	NM	5.70	NM	5.58	4.96	NM	4.25	4.25	5.70	5.15
RW-303-4	26.31	38.00	4.95	NM	5.35	NM	NM	NM	5.68	NM	5.53	4.92	NM	4.23	4.23	5.68	5.11
RW-303-15	31.26	34.10	4.13	NM	4.40	NM	NM	NM	4.92	NM	4.60	4.44	NM	3.61	3.61	4.92	4.35
<b>Sumps</b>																	
SWMU62-R1	6.52	10.30	-0.36	NM	-0.28	NM	NM	NM	0.26	NM	-0.19	0.65	NM	-0.56	-0.56	0.65	-0.08
SWMU62-R2	6.80	10.34	0.11	NM	0.19	NM	NM	NM	0.82	NM	0.31	1.21	NM	-0.11	-0.11	1.21	0.42
SWMU62-R3	7.47	10.48	1.04	NM	1.14	NM	NM	NM	1.76	NM	1.24	2.23	NM	0.81	0.81	2.23	1.37
SWMU62-R4	8.04	10.19	1.82	NM	1.92	NM	NM	NM	2.56	NM	2.02	3.02	NM	1.59	1.59	3.02	2.15
SWMU62-R5	8.97	9.30	3.00	NM	3.08	NM	NM	NM	3.74	NM	3.19	4.20	NM	2.76	2.76	4.20	3.33
SWMU62-R6	9.52	9.90	3.14	NM	3.25	NM	NM	NM	3.90	NM	3.33	4.35	NM	2.88	2.88	4.35	3.48
<b>Average Elevation</b>	NA	NA	3.18	NM	3.26	NM	NM	NM	3.92	NM	3.56	3.77	NM	2.74	NA	NA	NA

Notes:  
 Groundwater elevations were corrected for free product if present.  
 bgs – below ground surface  
 ft – feet  
 MLLW – mean lower low water  
 NA – not applicable  
 NM – not measured

**Table 2-3.** Product Thickness Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Oct-13 (feet)	Nov-13 (feet)	Dec-13 (feet)	Jan-14 (feet)	Feb-14 (feet)	Mar-14 (feet)	Apr-14 (feet)	May-14 (feet)	Jun-14 (feet)	Jul-14 (feet)	Aug-14 (feet)	Sep-14 (feet)	Minimum Product Thickness (feet)	Maximum Product Thickness (feet)	Average Product Thickness (feet)	Total Months Product Found
<b>03-101</b>	<b>0.51</b>	NM	<b>0.10</b>	NM	NM	NM	<b>0.01</b>	NM	0	0	NM	<b>0.03</b>	0	<b>0.51</b>	<b>0.11</b>	4
<b>03-102</b>	0	NM	<b>0.04</b>	NM	NM	NM	<b>0.24</b>	NM	<b>0.12</b>	<b>0.07</b>	NM	0	0	<b>0.24</b>	<b>0.08</b>	4
HMW-303-3	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>HMW-303-11</b>	0	NM	0	NM	NM	NM	<b>0.02</b>	NM	0	0	NM	<b>0.02</b>	0	<b>0.02</b>	<b>0.01</b>	2
MW-15	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>MW-303-8</b>	<b>0.07</b>	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	<b>0.07</b>	<b>0.01</b>	1
MW-303-12	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-4	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>RW-303-15</b>	0	NM	<b>0.08</b>	NM	NM	NM	0	NM	<b>0.21</b>	0	NM	0	0	<b>0.21</b>	<b>0.05</b>	2
<b>Sumps</b>																
SWMU62-R1	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R2	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>SWMU62-R3</b>	<b>0.14</b>	NM	<b>0.10</b>	NM	NM	NM	<b>0.13</b>	NM	<b>0.09</b>	<b>0.10</b>	NM	<b>0.18</b>	<b>0.09</b>	<b>0.18</b>	<b>0.12</b>	6
<b>SWMU62-R4</b>	<b>0.08</b>	NM	<b>0.07</b>	NM	NM	NM	<b>0.14</b>	NM	<b>0.09</b>	<b>0.03</b>	NM	<b>0.08</b>	<b>0.03</b>	<b>0.14</b>	<b>0.08</b>	6
<b>SWMU62-R5</b>	0	NM	<b>0.01</b>	NM	NM	NM	0	NM	0	0	NM	<b>0.02</b>	0	<b>0.02</b>	<b>0.01</b>	1
SWMU62-R6	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>Average Product Thickness</b>	<b>0.06</b>	NM	<b>0.03</b>	NM	NM	NM	<b>0.04</b>	NM	<b>0.04</b>	<b>0.01</b>	NM	<b>0.02</b>	NA	NA	NA	NA

*Notes:*

**Bolded well IDs** indicate monitoring wells that had product observed during the reporting period.

NA – not applicable

NM – not measured

**Table 2-4.** Recovered Product Volume Summary from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area

Monitoring Well	Oct-13 (gallons)	Nov-13 (gallons)	Dec-13 (gallons)	Jan-14 (gallons)	Feb-14 (gallons)	Mar-14 (gallons)	Apr-14 (gallons)	May-14 (gallon)	Jun-14 (gallon)	Jul-14 (gallons)	Aug-14 (gallons)	Sep-14 (gallons)	Minimum Volume of Recovered Product (gallons)	Maximum Volume of Recovered Product (gallons)	Average Volume of Recovered Product (gallons)	Total Volume of Recovered Product (gallons)
<b>03-101</b>	<b>0.29</b>	NM	<b>0.12</b>	NM	NM	NM	0	NM	0	0	NM	0	0	<b>0.29</b>	<b>0.07</b>	<b>0.41</b>
<b>03-102</b>	0	NM	0	NM	NM	NM	<b>0.13</b>	NM	<b>0.04</b>	0	NM	0	0	<b>0.13</b>	<b>0.03</b>	<b>0.16</b>
HMW-303-3	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
HMW-303-11	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-15	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-303-8	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
MW-303-12	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
RW-303-4	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>RW-303-15</b>	0	NM	0	NM	NM	NM	0	NM	<b>0.09</b>	0	NM	0	0	<b>0.09</b>	<b>0.02</b>	<b>0.09</b>
<b>Sumps</b>																
SWMU62-R1	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R2	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>SWMU62-R3</b>	<b>1.11</b>	NM	<b>0.95</b>	NM	NM	NM	<b>0.97</b>	NM	<b>0.96</b>	<b>0.95</b>	NM	<b>0.95</b>	<b>0.95</b>	<b>1.11</b>	<b>0.98</b>	<b>5.89</b>
<b>SWMU62-R4</b>	<b>1.11</b>	NM	<b>0.95</b>	NM	NM	NM	<b>1.10</b>	NM	<b>0.96</b>	<b>0.95</b>	NM	<b>0.79</b>	<b>0.79</b>	<b>1.11</b>	<b>0.98</b>	<b>5.86</b>
SWMU62-R5	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
SWMU62-R6	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>Total Volume of Recovered Product (gallons)</b>	<b>2.51</b>	NM	<b>2.02</b>	NM	NM	NM	<b>2.20</b>	NM	<b>2.04</b>	<b>1.90</b>	NM	<b>1.74</b>	NA	NA	NA	<b>12.41</b>
<b>6-Month Moving Average</b>	<b>1.55</b>	<b>1.55</b>	<b>1.49</b>	<b>1.12</b>	<b>1.12</b>	<b>0.75</b>	<b>0.70</b>	<b>0.70</b>	<b>0.71</b>	<b>1.02</b>	<b>1.02</b>	<b>1.31</b>	NA	NA	NA	--

Notes:

**Bolded well IDs** indicate monitoring wells that had product recovered during the reporting period.

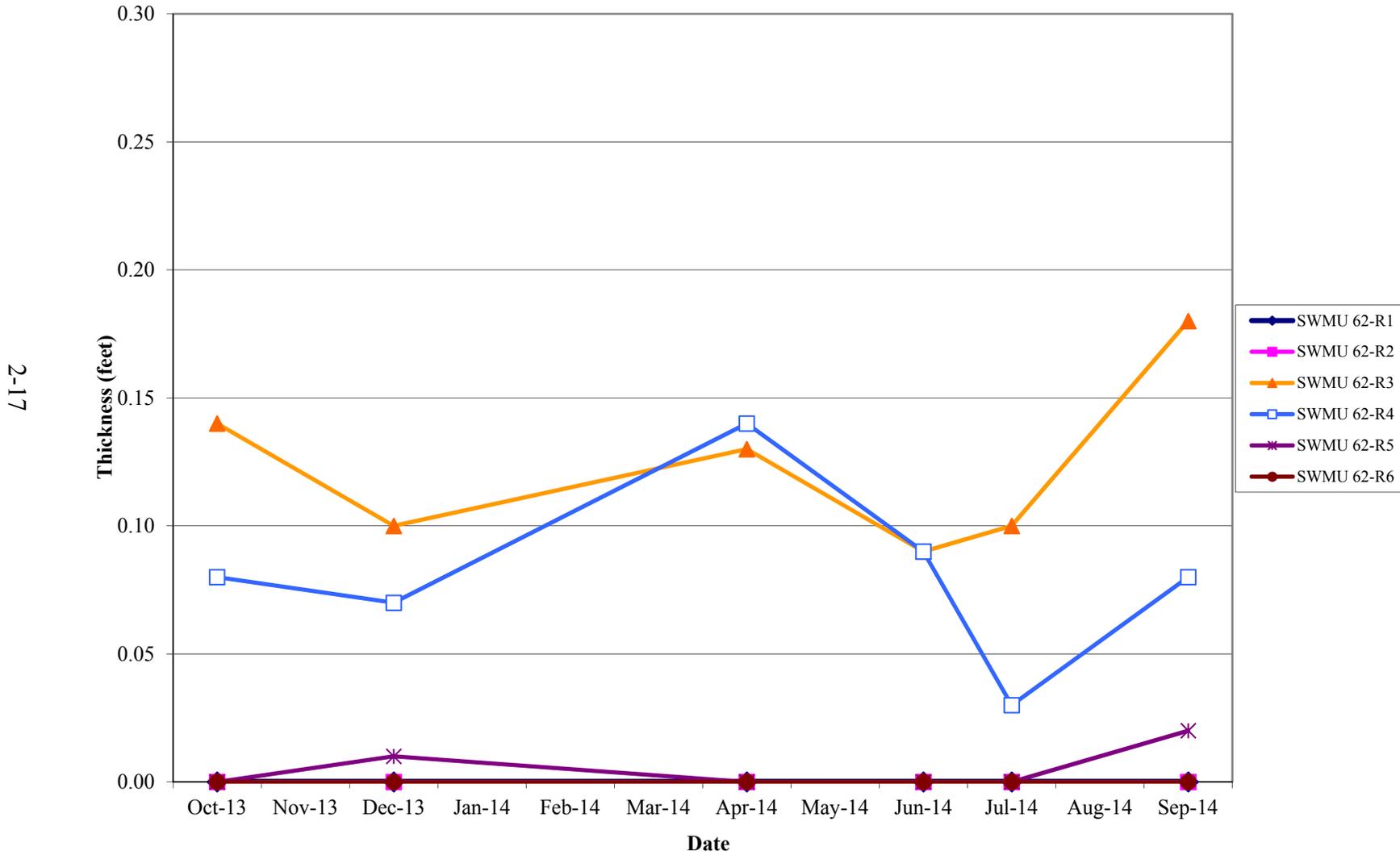
NA – not applicable

NM – not measured

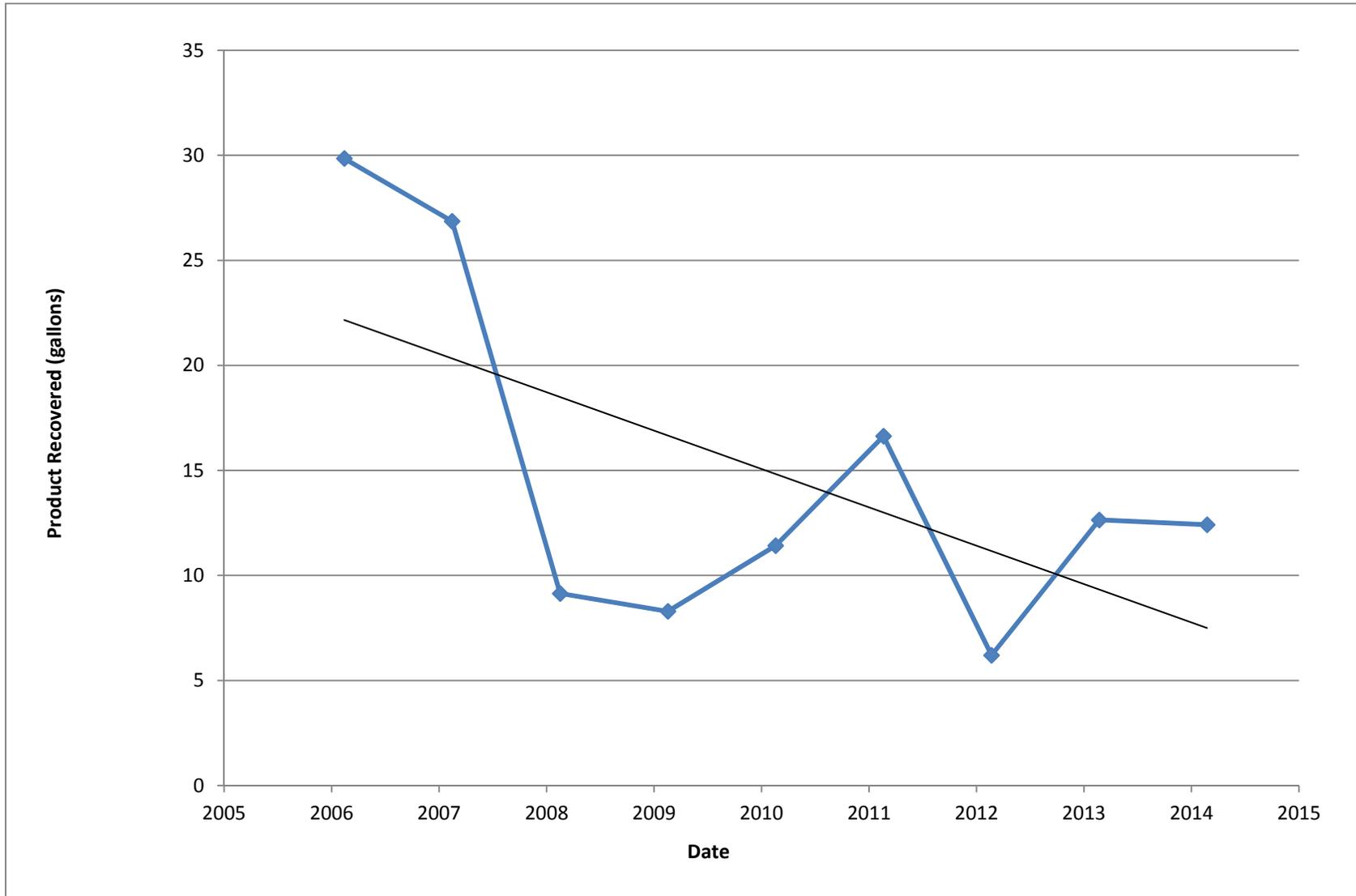




**Figure 2-3.** Free Product Thickness in SWMU 62, New Housing Fuel Leak Area Recovery Sumps

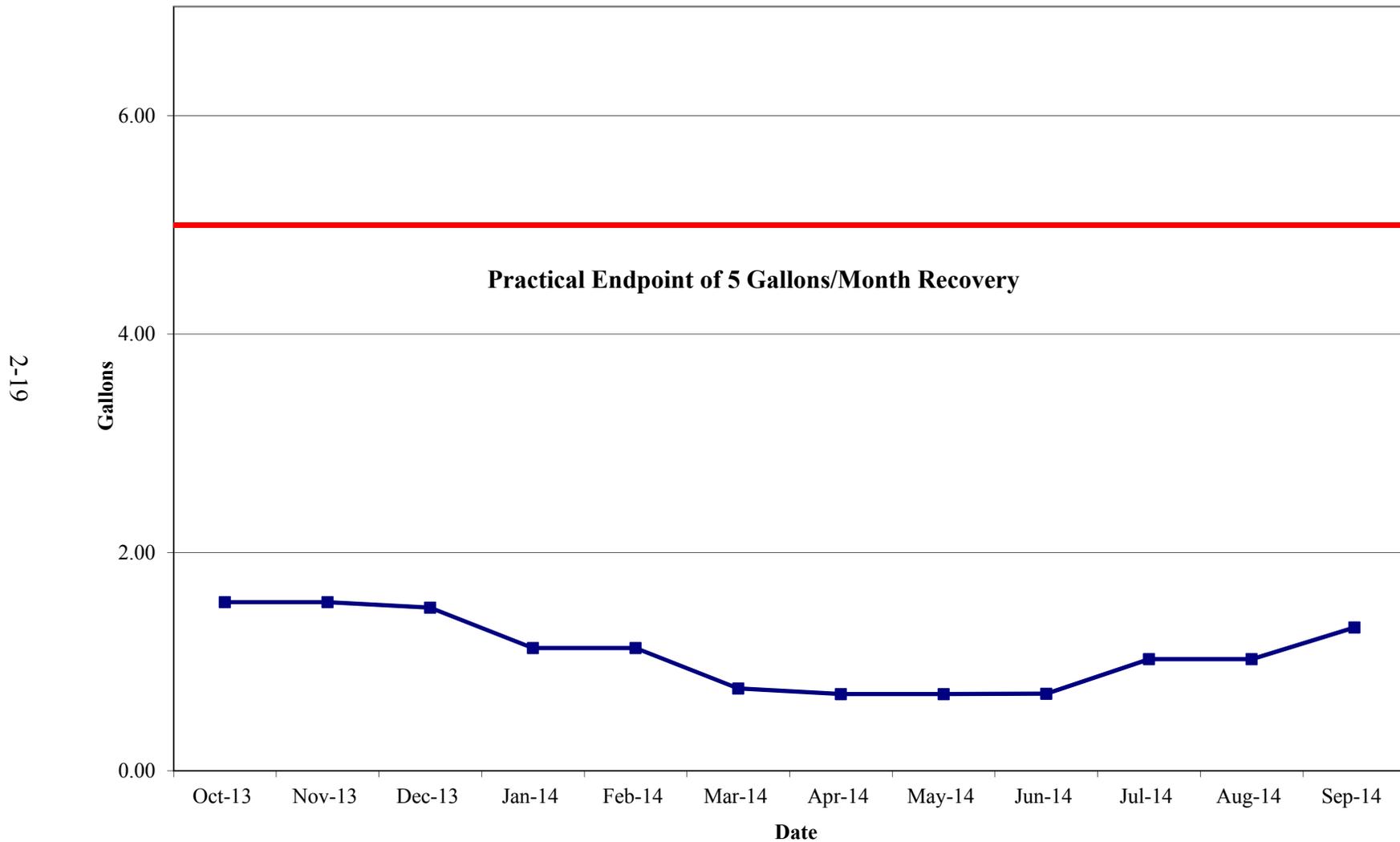


**Figure 2-4.** Historical Product Recovery, October 2006 through September 2014, SWMU 62, New Housing Fuel Leak Area



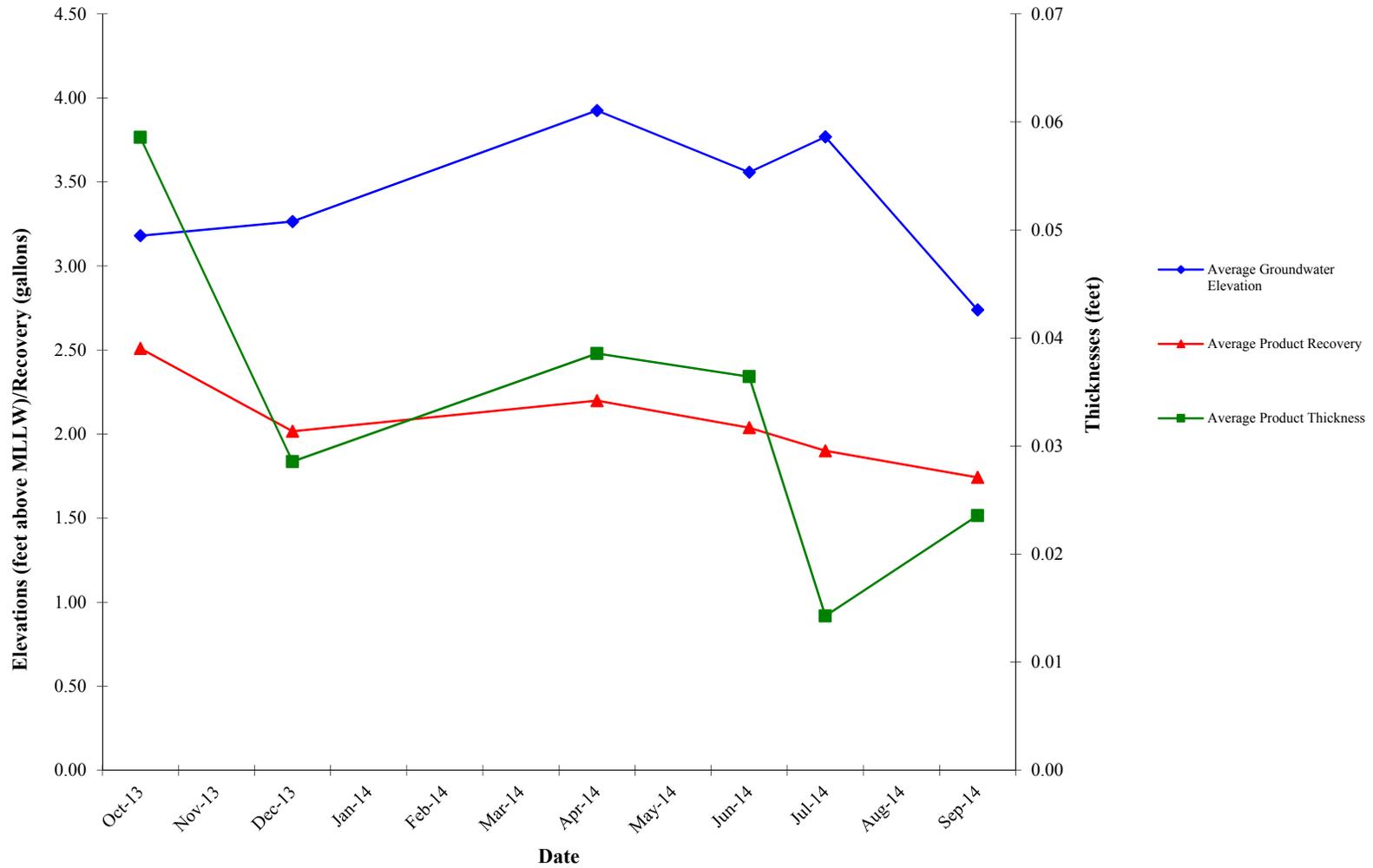
2-18

**Figure 2-5.** Six-Month Moving Average of Product Recovered, SWMU 62, New Housing Fuel Leak Area



2-19

**Figure 2-6.** Comparison of Average Groundwater Elevation, Average Product Thickness, and Total Recovered Product Volume from October 2013 through September 2014, SWMU 62, New Housing Fuel Leak Area



2-20

### **3. AREA 303**

#### **3.1 SITE DESCRIPTION**

Area 303 is located east of the air terminal and west of the high school building in downtown Adak (Figure 3-1). Area 303 overlaps the SWMU 62 Eagle Bay site on the south end. The general topography of the site is relatively flat with surface drainage directed to the west. The ground surface of Area 303 consists of the asphalt-paved Main Road, multiple small gravel-covered lots in developed areas near existing structures, and an extensive area covered with native grasses composing the less disturbed areas. Elevations of the ground surface in this area are generally 26 to 30 feet above MLLW.

Prior to military use of Adak Island during World War II, the western portion of the downtown area was occupied by a back-beach lagoon. The lagoon was separated from Kuluk Bay by a series of sand dunes. Military forces filled the lagoon with sand and rock to construct the airfield. The sand dunes were leveled to create the relatively flat area occupied by downtown Adak today. Area 303 is believed to be situated near the eastern shoreline of the former lagoon.

#### **3.2 GEOLOGY AND GROUNDWATER**

The geology and hydrogeology at the site are characterized by sandy soils derived from stream, wind, and wave action. The subsurface soils have variable permeability and generally consist of sands and gravels with occasional layers of organic silt and clay. The saturated sands typical in the downtown portion of Adak Island have a high water-bearing capacity. The organic silts and clays have low water-bearing capacity and typically cause shallow water in the subsurface to pond above the primary aquifer as small perched groundwater zones.

Groundwater in the primary aquifer beneath the downtown area of Adak, situated west of Main Road, flows generally west toward the East Canal of the airport ditch system (see Figure 2-2). During the 2006 site characterization activities, groundwater in the primary aquifer was measured at depths ranging from 5 feet bgs to as much as 28 feet bgs, depending on the location. The 2014 LTM field measurements and the resulting calculated groundwater surface elevations are presented in Appendix C, Table C-1. The hydraulic gradient is fairly consistent across the site at 0.0027 foot/foot.

Layers of lower permeability material, such as organic silt and clay, are present within the sandy soils at several locations. These layers are believed to represent the position of either the former lagoon bottom, or small lakes that occurred within low-lying areas between the sand dunes that were present in the downtown area prior to military arrival on Adak. These lower permeability layers retard the downward percolation of groundwater, which may result in localized zones of perched groundwater. Perched groundwater has been found in the northeast portion of Area 303 at depth ranging from approximately 2 to 5 feet bgs.

The closest surface water body in the vicinity of Area 303 is the East Canal, which is located near the southwestern boundary of the site.

### **3.3 RELEASE HISTORY**

The following potential sources of the petroleum hydrocarbons present at Area 303 include portions of major fuel distribution pipelines located within Area 303:

- An aviation gasoline pipeline distribution system formerly used to provide fuel to truck-fuel stands along the airfield and transfer fuel from the former Fuel Dock No. 7 to Tank Farm B.
- A diesel pipeline formerly used to transfer fuel from the former Fuel Dock No. 7 to Tank Farm C.
- The JP-5 pipelines, including the Main Road Pipeline, formerly used to transfer fuel from the Fuels Facility to Steam Plant No. 4 and various aboveground storage tanks that stored fuel for distribution to individual housing units at SWMU 62.

None of these pipelines are currently active, and all pipelines within the vicinity of Area 303 have been decommissioned (URS 2011). Based on the results of the 2006 remedial investigation and the 2009 pipeline integrity testing performed as part of pipeline decommissioning, the source of gasoline-range hydrocarbons was likely the aviation gasoline pipeline distribution system. The diesel and JP-5 pipelines are not considered potential sources, because these pipelines were used to transport heavier petroleum products.

### **3.4 REMEDIAL ACTIONS**

The selected remedy for Area 303 is monitored natural attenuation, institutional controls, and free product recovery. Institutional controls, including excavation notification and a groundwater use restriction, will remain in effect to protect human health and the environment until groundwater cleanup levels in 18 Alaska Administrative Code (AAC) 75.345, Table C, have been achieved for gasoline and diesel products. Passive free product recovery will be used to reduce the risk of exposure to free product and of free

product migrating to East Canal surface water. Four recovery wells (MW-303-38 through -41) and six monitoring wells (MW-303-42 through -47) were installed in this area in 2012 to better define the extent of petroleum-impacted groundwater (URS 2013).

### **3.5 GROUNDWATER ELEVATIONS AND PRODUCT THICKNESSES**

At Area 303, monitoring wells were measured for groundwater elevations and the presence of free product beginning in June 2013. Seventeen wells were monitored on a monthly basis from October 2013 through January 2014. This was reduced to three wells during February and March 2014. Based on recommendations in the March 2014 Monthly Technical Report (Sealaska 2014), these three wells were continued to be monitored on a six-event per year schedule consistent with the SWMU 62 schedule. Monthly and average groundwater elevations for each well from October 2013 through September 2014 are presented in Table 3-1.

No free product was observed in any of the monitoring wells, and no product was recovered, during the October 2013 through September 2014 free product recovery event.

**Table 3-1.** Corrected Groundwater Elevation Summary from October 2013 through September 2014, Area 303

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-14 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
03-012	9.27	9.0	1.81	1.87	1.90	2.19	NM	1.81	2.19	1.94							
03-107	31.30	30.5	4.36	4.96	4.71	4.86	NM	4.36	4.96	4.72							
04-211	28.45	30.0	5.21	6.03	5.81	5.82	NM	5.21	6.03	5.72							
MRP-MW2	26.99	25.9	6.28	7.21	7.03	6.96	NM	6.28	7.21	6.87							
MW-303-28	32.83	34.5	5.15	5.99	5.71	5.74	5.70	5.54	5.94	NM	5.92	5.43	NM	4.66	4.66	5.99	5.58
MW-303-30	31.20	32.5	4.18	4.75	4.51	4.72	NM	4.18	4.75	4.54							
MW-303-31	31.82	33.0	4.83	5.56	5.31	5.41	NM	4.83	5.56	5.28							
MW-303-32	29.16	28.5	5.55	6.48	6.24	6.23	NM	5.55	6.48	6.13							
MW-303-33	27.18	27.5	5.12	8.37	5.63	5.75	NM	5.12	8.37	6.22							
MW-303-37	16.23	17.5	3.53	3.91	3.71	4.09	NM	3.53	4.09	3.81							
MW-303-38	27.68	27.0	3.04	3.70	3.45	3.57	NM	3.04	3.70	3.44							
MW-303-39	23.43	26.0	2.54	3.08	2.84	3.10	2.90	2.76	3.35	NM	3.02	2.91	NM	2.08	2.08	3.35	2.86
MW-303-40	17.68	14.0	11.59	12.10	11.73	11.86	NM	11.59	12.10	11.82							
MW-303-41	30.73	25.0	10.84	12.16	12.32	11.54	NM	10.84	12.32	11.71							
MW-303-42	32.13	30.0	4.11	5.05	4.77	4.75	4.75	4.55	4.92	NM	4.94	4.34	NM	3.55	3.55	5.05	4.57
MW-303-43	32.50	30.0	4.46	5.48	5.22	5.14	NM	4.46	5.48	5.08							
MW-303-44	32.91	30.0	4.33	5.29	4.99	4.93	NM	4.33	5.29	4.89							
<b>Average Elevation</b>	NA	NA	5.11	NM	5.56	NM	NM	NM	4.64	NM	4.47	4.17	NM	3.37	NA	NA	NA

*Notes:*

Groundwater elevations were corrected for free product if present.

bgs – below ground surface

ft – feet

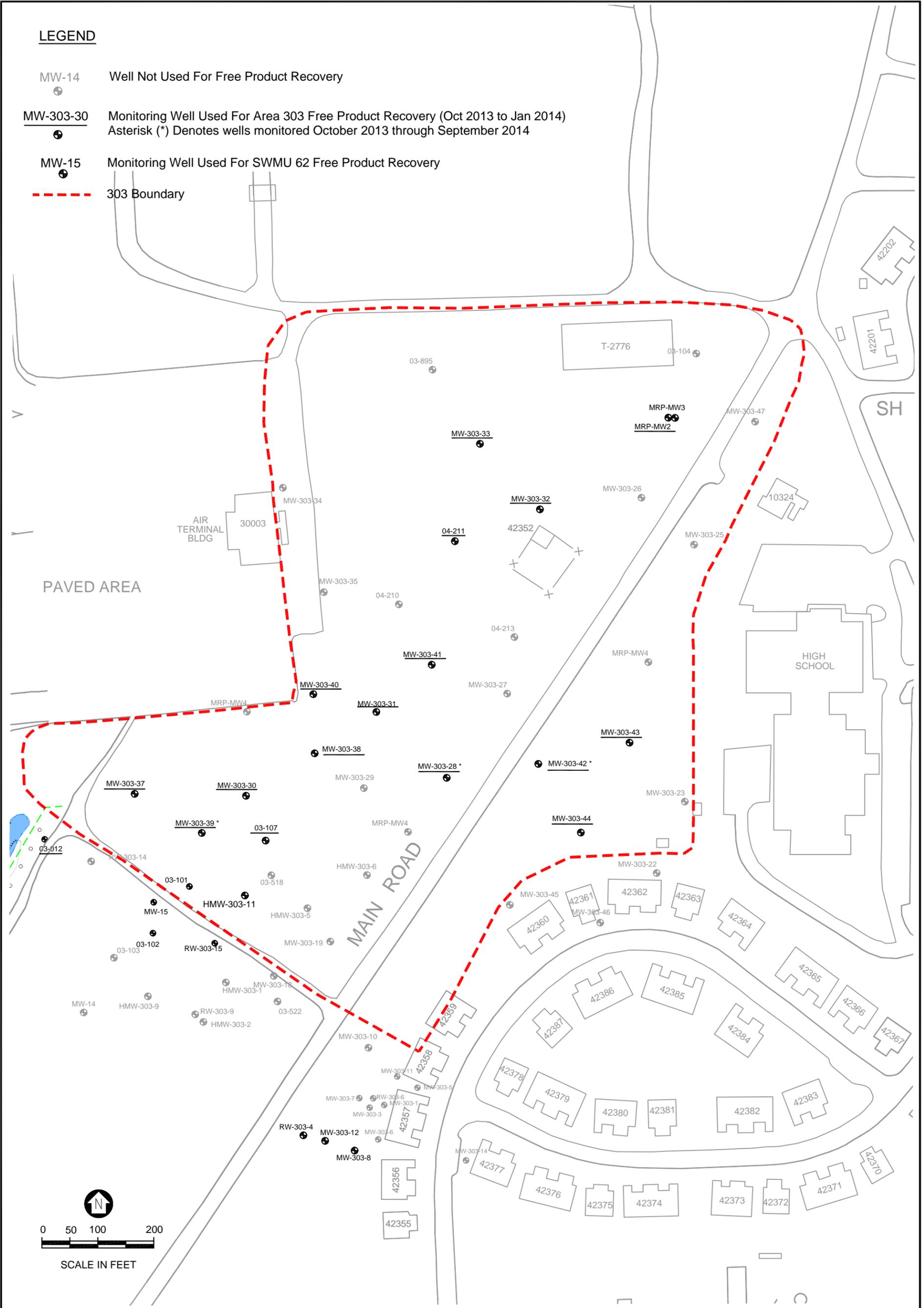
MLLW – mean lower low water

NA – not applicable

NM – not measured

**LEGEND**

- MW-14 Well Not Used For Free Product Recovery
- MW-303-30 Monitoring Well Used For Area 303 Free Product Recovery (Oct 2013 to Jan 2014)  
Asterisk (\*) Denotes wells monitored October 2013 through September 2014
- MW-15 Monitoring Well Used For SWMU 62 Free Product Recovery
- 303 Boundary



## 4. ADDITIONAL SITES

### 4.1 SITE DESCRIPTIONS

In 2006, specific wells at several additional sites were identified for free product recovery based on September 2006 LTM field observations. In May of 2007, during comment resolution for the 2006 Annual Groundwater Monitoring Report, ADEC and the Navy agreed to resume free product recovery at these wells. Free product activities were conducted at 23 additional wells located at the following 11 sites:

- GCI (General Communication, Inc.) Compound
- NMCB Expanded Area
- North Pacific (NORPAC) Hill Seep Area
- SA 78, Old Transportation Building
- SA 80, Steam Plant 4
- SA 82, P-80/P-81 Buildings
- SA 88, P-70 Energy Generator
- South of Runway 18-36 Area
- SWMU 58/SA 73, Heating Plant 6
- SWMU 62, New Housing Fuel Leak Area
- Tanker Shed

In October 2008, free product activities were discontinued at the NMCB Expanded Area because practical endpoints for monthly volume of product recovery had been achieved (SES-TECH 2009). In November 2009, ADEC granted conditional closure at SA 82, P-80/P-81 Buildings, so free product activities ceased. In May of 2010, during comment resolution for the 2009 Annual Groundwater Monitoring Report, ADEC and the Navy agreed to resume free product recovery at select NMCB Expanded Area wells for surface water protection due to the observation of free product on the groundwater. It was additionally agreed to discontinue free product recovery activities at GCI Compound; SA 78, Old Transportation Building; and Tanker Shed sites because no or very small quantities of free product were recovered during the previous monitoring year October 2008 to September 2009 (SES-TECH 2010). In May 2011, during comment resolution for the 2010 Annual Groundwater Monitoring Report, ADEC agreed to grant conditional closure at NORPAC Hill Seep Area and SA 88, P-70 Energy Generator, because the practical endpoint criteria specified in the OU A ROD add been achieved.

For the 2012/2013 reporting period, SWMU 58/SA 73, Heating Plant 6, was eliminated from the free product recovery program as approved by ADEC.

In 2010, four additional monitoring wells were installed at SWMU 60, Tank Farm A, downgradient of the site. Free product monitoring at two of these wells was initiated in April 2012.

Former Power Plant, Building T-1451, was added to the monitoring program beginning in June 2013, following the removal action conducted there in 2012 and installation of nine monitoring wells (URS 2013).

Free product recovery activities occurred at the following four sites during the sampling period October 2013 through September 2014:

- NMCB Expanded Area
- SA 80, Steam Plant 4
- SWMU 60, Tank Farm A
- Former Power Plant, Building T-1451

Product recovery was conducted during the 2013/2014 reporting period to fulfill surface water protection criteria under the ROD at NMCB Expanded Area, SWMU 60, Tank Farm A, and Former Power, Plant T-1451. Product recovery was conducted at SA 80, Steam Plant 4, during the reporting period because of the observance of free product on groundwater and increasing trends in petroleum concentrations in downgradient wells.

During product recovery activities at the additional sites, monitoring wells were measured for groundwater elevations and the presence of free product. The designated wells were monitored on a monthly basis from October 2013 through January 2014. Based on recommendations in the March 2014 Monthly Technical Report (Sealaska 2014), these wells were then continued on a six-event per year schedule consistent with the SWMU 62 schedule. The groundwater elevations for each well from October 2013 through September 2014 are presented in Table 4-1. Groundwater elevations were corrected for the presence of free product, where observed, by using the equation presented in Section 2.5. Free product thickness measurements, including minimum, maximum, and average are presented in Table 4-2.

Free product recovery at the additional sites has been conducted through a combination of hand bailing, passive canisters, and sorbent socks installed in site wells. Table 4-3 lists the average and monthly volume of product recovered from each well. Each site is discussed in more detail below.

The total volume of recovered product from all four sites for the 12 months of product recovery was 11.36 gallons and the maximum volume recovered in one month was 1.57 gallons in April 2014.

#### **4.1.1 NMCB Expanded Area**

The NMCB Expanded Area consists of lowlands between Seawall Road and Sweeper Cove, just east of the South of Runway 18-36 Area (Figure 4-1). Topography is flat, low-lying land, with elevations generally less than 15 feet above MLLW. Groundwater forms a regional unconfined aquifer with a tidally-influenced water table that is encountered approximately 5 to 10 feet bgs beneath the site (commonly referred to as the downtown aquifer). South of Seawall Road, the groundwater flow direction is to the south, toward Sweeper Cove. North of Seawall Road, the groundwater flow direction is generally to the northwest, toward East Canal. Groundwater at NMCB Expanded Area is not considered to be a potential future drinking water source due to the potential for salt water intrusion, as per Alaska regulations (18 AAC 75.345[b][2]).

The Navy and ADEC selected the remedial alternatives of institutional controls, free product recovery, and monitored natural attenuation (MNA) in 2005 under the State-Adak Environmental Restoration Agreement (SAERA). In 2008, free product recovery was discontinued because endpoint criteria were met. However during annual LTM activities, surface water protection criteria were observed to be exceeded based on the presence of free product in shoreline wells. Exceedances included the continued observance of free product and endpoint exceedances in shoreline wells, endpoint exceedances in shoreline sediment, and stable but not decreasing concentrations of petroleum constituents in groundwater. Therefore, monthly product recovery activities were re-started at this site in June 2010.

Product monitoring and recovery was conducted at six NMCB wells. Measurable product was encountered in five of the wells, and a total of 1.40 gallons of product was recovered from two of the wells (02-300 and NMCB-07). Three of the wells with measurable product (02-815, 02-818, and NMCB-10) yielded no product recovery.

#### **4.1.2 SA 80, Steam Plant 4**

The SA 80, Steam Plant 4, site is located in the northern downtown area between the Main Road and Runway 18-36 taxiway (Figure 4-2). Topography is relatively flat, low-lying land, with elevations between 25 and 30 feet above MLLW. Groundwater forms a regional unconfined aquifer with a water table that is encountered approximately 15 to 20 feet bgs beneath the site (commonly referred to as the downtown aquifer). The groundwater flow

direction is to the west, toward the East Canal. A shallow perched aquifer zone has also been identified to occur in the area of the removed underground storage tanks (URS 2004). The groundwater at this site is not reasonably expected to be a potential future source of drinking water.

Product recovery endpoint for this site are not defined by the ROD; however, product recovery activities have been performed at this site at the request of ADEC because of the continued observance of free product in onsite wells. Product monitoring and recovery was conducted at three SA-80 wells during this period. Measurable product was encountered in each well, and a total of 1.28 gallons of product was recovered from the three wells.

#### **4.1.3 SWMU 60, Tank Farm A**

The SWMU 60 site consists of Tank Farm A, located on an east-facing hill west of the lower reach of South Sweeper Creek (Figure 4-3). The portion of the site subject to this investigation is the lower elevation eastern end adjacent to South Sweeper Creek. Two monitoring wells installed in 2010 encountered floating product upgradient of the oil seep on the west bank of South Sweeper Creek. Boom 10 is maintained at this seep to control the migration of sheen to surface water.

Product monitoring and recovery was conducted at the two SWMU 60 wells (652 and 653) upgradient of the shoreline seep during this period. Measurable product was encountered in one of the wells (653) only in September 2014, and no product was removed from either well in October 2013 through September 2014.

#### **4.1.4 Former Power Plant, Building T-1451**

Former Power Plant, Building T-1451, is located along Main Road near the south end of Runway 18-36 near downtown Adak (Figure 4-4). Former Power Plant, Building T-1451, is bounded by Main Road to the West, Public Works Road to the north, and vacant land to the east and south.

The Former Power Plant site consists of the former power plant building (currently the city shop building) on a level gravel lot at an elevation of approximately 20 feet above MLLW and an area dominated by native grasses which slope down to the west towards East Canal.

The ROD-required remedy for Former Power Plant, Building T-1451, is MNA. However in 2012, a removal action was completed to address petroleum in East Canal surface water. Free product recovery was initiated in June 2013 at nine wells as a follow-up to the removal action.

Product recovery endpoints for this site are not defined by the ROD; however, product recovery activities have been performed at this site at the request of ADEC. Nine wells were monitored on a monthly basis from October 2013 through January 2014. Based on recommendations in the March 2014 Monthly Technical Report (Sealaska 2014), three wells (MW-1451-1, MW-1451-6, and MW-1451-7) were continued on a six-event per year schedule consistent with the SWMU 62 schedule. Measurable product was encountered in all three of the wells, and a total of 8.68 gallons of product was recovered, with the majority (8.39 gal) from well MW-1451-7.

#### **4.2 2014 LONG-TERM MONITORING RESULTS**

Several monitoring wells measured during the 2014 LTM event were observed to contain floating product. These wells, not included in the present Free Product Recovery program, are listed in Table 4-4. These wells were monitored during October 2014 and recommendations are provided to continue the monitoring through September 2015.

**Table 4-1.** Corrected Groundwater Elevation Summary from October 2013 through September 2014, Additional Sites

Monitoring Well	Well Elevation (ft above MLLW)	Total Depth of Well (ft bgs)	Oct-13 (ft above MLLW)	Nov-13 (ft above MLLW)	Dec-13 (ft above MLLW)	Jan-14 (ft above MLLW)	Feb-14 (ft above MLLW)	Mar-14 (ft above MLLW)	Apr-14 (ft above MLLW)	May-14 (ft above MLLW)	Jun-14 (ft above MLLW)	Jul-14 (ft above MLLW)	Aug-14 (ft above MLLW)	Sep-14 (ft above MLLW)	Minimum Groundwater Elevation (ft above MLLW)	Maximum Groundwater Elevation (ft above MLLW)	Average Groundwater Elevation (ft above MLLW)
<b>NMCB Expanded Area</b>																	
02-300	11.99	14.0	3.12	NM	2.82	NM	NM	NM	3.68	NM	2.70	2.27	NM	2.07	2.07	3.68	2.78
02-497	9.15	14.0	3.09	NM	2.76	NM	NM	NM	3.77	NM	2.79	2.52	NM	2.30	2.30	3.77	2.87
02-815	16.35	17.5	3.10	NM	2.76	NM	NM	NM	3.97	NM	2.96	2.73	NM	2.36	2.36	3.97	2.98
02-818	11.55	15.0	3.14	NM	2.76	NM	NM	NM	3.85	NM	2.86	2.72	NM	2.49	2.49	3.85	2.97
NMCB-07	11.85	19.3	3.03	NM	2.70	NM	NM	NM	3.66	NM	2.68	2.40	NM	2.23	2.23	3.66	2.78
NMCB-10	12.95	17.8	2.85	NM	2.57	NM	NM	NM	3.54	NM	2.73	2.28	NM	2.27	2.27	3.54	2.70
<b>SA 80 Steam Plant 4</b>																	
04-155	27.77	34.0	12.93	NM	13.34	NM	NM	NM	14.21	NM	13.47	12.55	NM	12.36	12.36	14.21	13.14
04-157	28.18	25.0	10.23	NM	10.68	NM	NM	NM	11.70	NM	11.02	9.98	NM	8.88	8.88	11.70	10.41
04-158	27.36	30.0	10.17	NM	10.45	NM	NM	NM	12.12	NM	10.57	8.32	NM	8.53	8.53	12.12	10.03
<b>SWMU 60 Tank Farm A</b>																	
652	12.37	15.3	3.73	NM	3.49	NM	NM	NM	4.18	NM	3.29	2.83	NM	3.12	2.83	4.18	3.44
653	15.14	15.3	6.18	NM	4.31	NM	NM	NM	6.74	NM	4.42	3.24	NM	5.10	3.24	6.74	5.00
<b>Former Power Plant, Building T-1451</b>																	
MW-1451-1	6.56	12.0	-0.17	-0.38	-0.12	0.36	0.49	-0.07	0.70	NM	-0.01	1.04	NM	-0.65	-0.65	1.04	0.12
MW-1451-2	6.24	11.5	-0.02	-0.09	0.11	0.56	NM	-0.09	0.56	0.14							
MW-1451-3	5.09	11.0	-0.34	-0.62	-0.30	0.14	NM	-0.62	0.14	-0.28							
MW-1451-4	5.99	11.0	-0.27	-0.47	-0.19	0.25	NM	-0.47	0.25	-0.17							
MW-1451-5	7.50	11.0	0.86	1.01	0.87	1.43	NM	0.86	1.43	1.04							
MW-1451-6	6.15	11.5	1.07	1.20	1.06	1.59	1.20	1.06	1.96	NM	1.21	1.70	NM	0.65	0.65	1.96	1.27
MW-1451-7	7.33	11.0	0.99	1.10	1.01	1.52	1.10	0.99	1.90	NM	1.17	1.69	NM	0.59	0.59	1.90	1.20
MW-1451-8	8.07	13.0	1.64	1.96	1.58	2.12	NM	1.58	2.12	1.82							
MW-1451-9	9.91	13.5	1.59	1.87	1.55	2.06	NM	1.55	2.06	1.76							

Notes:  
 Groundwater elevations were corrected for free product if present.  
 bgs - below ground surface  
 ft - feet  
 MLLW - mean lower low water  
 NM - not measured

**Table 4-2.** Product Thickness Summary from October 2013 through September 2014, Additional Sites

Monitoring Well	Oct-13 (feet)	Nov-13 (feet)	Dec-13 (feet)	Jan-14 (feet)	Feb-14 (feet)	Mar-14 (feet)	Apr-14 (feet)	May-14 (feet)	Jun-14 (feet)	Jul-14 (feet)	Aug-14 (feet)	Sep-14 (feet)	Minimum Product Thickness (ft)	Maximum Product Thickness (ft)	Average Product Thickness (ft)	Total Months Product Found
<i>NMCB Expanded Area</i>																
<b>02-300</b>	<b>0.12</b>	NM	<b>0.03</b>	NM	NM	NM	0	NM	<b>0.06</b>	<b>0.01</b>	NM	<b>0.11</b>	0	<b>0.12</b>	<b>0.06</b>	<b>5</b>
02-497	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>02-815</b>	0	NM	0	NM	NM	NM	<b>0.02</b>	NM	0	0	NM	<b>0.03</b>	0	<b>0.03</b>	<b>0.01</b>	<b>2</b>
<b>02-818</b>	<b>0.06</b>	NM	0	NM	NM	NM	<b>0.01</b>	NM	0	0	NM	0	0	<b>0.06</b>	<b>0.01</b>	<b>2</b>
<b>NMCB-07</b>	<b>0.15</b>	NM	<b>0.08</b>	NM	NM	NM	<b>0.17</b>	NM	<b>0.25</b>	<b>0.20</b>	NM	<b>0.48</b>	<b>0.08</b>	<b>0.48</b>	<b>0.22</b>	<b>6</b>
<b>NMCB-10</b>	<b>0.01</b>	NM	<b>0.02</b>	NM	NM	NM	0	NM	<b>0.01</b>	0	NM	<b>0.03</b>	0	<b>0.03</b>	<b>0.01</b>	<b>4</b>
<i>SA 80 Steam Plant 4</i>																
<b>04-155</b>	<b>0.11</b>	NM	0	NM	NM	NM	<b>0.15</b>	NM	<b>0.02</b>	0	NM	<b>0.03</b>	0	<b>0.15</b>	<b>0.05</b>	<b>4</b>
<b>04-157</b>	<b>0.31</b>	NM	<b>0.73</b>	NM	NM	NM	<b>0.30</b>	NM	<b>0.18</b>	<b>0.01</b>	NM	<b>0.02</b>	<b>0.02</b>	<b>0.73</b>	<b>0.26</b>	<b>6</b>
<b>04-158</b>	<b>0.02</b>	NM	<b>0.17</b>	NM	NM	NM	<b>0.28</b>	NM	<b>0.15</b>	<b>0.04</b>	NM	0	0	<b>0.28</b>	<b>0.11</b>	<b>5</b>
<i>SWMU 60 Tank Farm A</i>																
652	0	NM	0	NM	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>653</b>	0	NM	0	NM	NM	NM	0	NM	0	0	NM	<b>0.05</b>	0	<b>0.05</b>	<b>0.01</b>	0
<i>Former Power Plant, Building T-1451</i>																
<b>MW-1451-1</b>	<b>0.02</b>	0	0	0	0	0	0	NM	0	0	NM	<b>0.80</b>	0	<b>0.80</b>	<b>0.14</b>	<b>2</b>
MW-1451-2	0	0	0	0	NM	0	0	0	0							
MW-1451-3	0	0	0	0	NM	0	0	0	0							
MW-1451-4	0	0	0	0	NM	0	0	0	0							
MW-1451-5	0	0	0	0	NM	0	0	0	0							
<b>MW-1451-6</b>	<b>0.13</b>	<b>0.15</b>	0	<b>0.03</b>	0.00	<b>0.02</b>	0	NM	<b>0.04</b>	0	NM	<b>0.02</b>	0	<b>0.15</b>	<b>0.07</b>	<b>6</b>
<b>MW-1451-7</b>	<b>0.37</b>	<b>0.43</b>	<b>0.34</b>	<b>1.16</b>	<b>0.45</b>	<b>0.41</b>	<b>1.31</b>	NM	<b>0.10</b>	<b>0.22</b>	NM	<b>0.44</b>	<b>0.10</b>	<b>1.31</b>	<b>0.87</b>	<b>10</b>
MW-1451-8	0	0	0	0	NM	0	0	0	0							
MW-1451-9	0	0	0	0	NM	0	0	0	0							

Notes:

**Bolded well IDs** indicate monitoring wells that had product observed during the reporting period.  
 NM - not measured

**Table 4-3.** Recovered Product Volume Summary from October 2013 through September 2014, Additional Sites

Monitoring Well	Oct-13 (gallons)	Nov-13 (gallons)	Dec-13 (gallons)	Jan-14 (gallons)	Feb-14 (gallons)	Mar-14 (gallons)	Apr-14 (gallons)	May-14 (gallons)	Jun-14 (gallons)	Jul-14 (gallons)	Aug-14 (gallons)	Sep-14 (gallons)	Minimum Volume of Recovered Product (gallons)	Maximum Volume of Recovered Product (gallons)	Average Volume of Recovered Product (gallons)	Total volume of Recovered Product (gallons)
<i>NMCB Expanded Area</i>																
<b>02-300</b>	<b>0.03</b>	0	0	0	NM	NM	0	NM	<b>0</b>	0	NM	<b>0.02</b>	0	<b>0.03</b>	<b>0.01</b>	<b>0.05</b>
02-497	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
02-815	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
02-818	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>NMCB-07</b>	<b>0.09</b>	0	<b>0.40</b>	0	NM	NM	<b>0.06</b>	NM	<b>0.17</b>	<b>0.10</b>	NM	<b>0.53</b>	0	<b>0.53</b>	<b>0.23</b>	<b>1.35</b>
NMCB-10	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>Total Volume of Recovered Product (gallons)</b>	<b>0.12</b>	0	<b>0.40</b>	0	NM	NM	<b>0.06</b>	NM	<b>0.17</b>	<b>0.10</b>	NM	<b>0.55</b>	NA	NA	NA	<b>1.40</b>
<i>SA 80 Steam Plant 4</i>																
<b>04-155</b>	<b>0.06</b>	0	0	0	NM	NM	<b>0.08</b>	NM	0	0	NM	0	0	<b>0.08</b>	<b>0.02</b>	<b>0.13</b>
<b>04-157</b>	<b>0.16</b>	0	<b>0.43</b>	0	NM	NM	<b>0.15</b>	NM	<b>0.11</b>	0	NM	0	0	<b>0.43</b>	<b>0.14</b>	<b>0.84</b>
<b>04-158</b>	0	0	<b>0.11</b>	0	NM	NM	<b>0.11</b>	NM	<b>0.08</b>	0	NM	0	0	<b>0.11</b>	<b>0.05</b>	<b>0.30</b>
<b>Total Volume of Recovered Product (gallons)</b>	<b>0.22</b>	0	<b>0.54</b>	0	NM	NM	<b>0.34</b>	NM	<b>0.19</b>	0	NM	0	NA	NA	NA	<b>1.28</b>
<i>SWMU 60 Tank Farm A</i>																
652	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
653	0	0	0	0	NM	NM	0	NM	0	0	NM	0	0	0	0	0
<b>Total Volume of Recovered Product (gallons)</b>	0	0	0	0	NM	NM	0	NM	0	0	NM	0	NA	NA	NA	NA
<i>Former Power Plant, Building T-1451</i>																
<b>MW-1451-1</b>	0	0	0	0	0	0	0	NM	0	0	NM	<b>0.18</b>	0	<b>0.18</b>	<b>0.03</b>	<b>0.18</b>
MW-1451-2	0	0	0	0	NM	0	0	0	0	0						
MW-1451-3	0	0	0	0	NM	0	0	0	0	0						
MW-1451-4	0	0	0	0	NM	0	0	0	0	0						
MW-1451-5	0	0	0	0	NM	0	0	0	0	0						
<b>MW-1451-6</b>	<b>0.05</b>	<b>0.06</b>	0	0	0	0	0	NM	0	0	NM	0	0	<b>0.06</b>	<b>0.02</b>	<b>0.11</b>
<b>MW-1451-7</b>	<b>0.78</b>	<b>0.36</b>	<b>0.51</b>	<b>0.96</b>	<b>1.13</b>	<b>1.11</b>	<b>1.57</b>	NM	<b>1.00</b>	<b>0.34</b>	NM	<b>0.62</b>	0.34	<b>1.57</b>	<b>1.40</b>	<b>8.39</b>
MW-1451-8	0	0	0	0	NM	NM	NM	NM	0	0	NM	0	0	0	0	0
MW-1451-9	0	0	0	0	NM	NM	NM	NM	0	0	NM	0	0	0	0	0
<b>Total Volume of Recovered Product (gallons)</b>	<b>0.83</b>	<b>0.42</b>	<b>0.51</b>	<b>0.96</b>	<b>1.13</b>	<b>1.11</b>	<b>1.57</b>	NM	<b>1.00</b>	<b>0.34</b>	NM	<b>0.80</b>	NA	NA	NA	<b>8.68</b>
<b>Total Volume of Recovered Product (gallons)</b>	<b>1.17</b>	<b>0.42</b>	<b>1.45</b>	<b>0.96</b>	<b>1.13</b>	<b>1.11</b>	<b>1.97</b>	NM	<b>1.36</b>	<b>0.44</b>	NM	<b>1.35</b>	NA	NA	NA	<b>11.36</b>

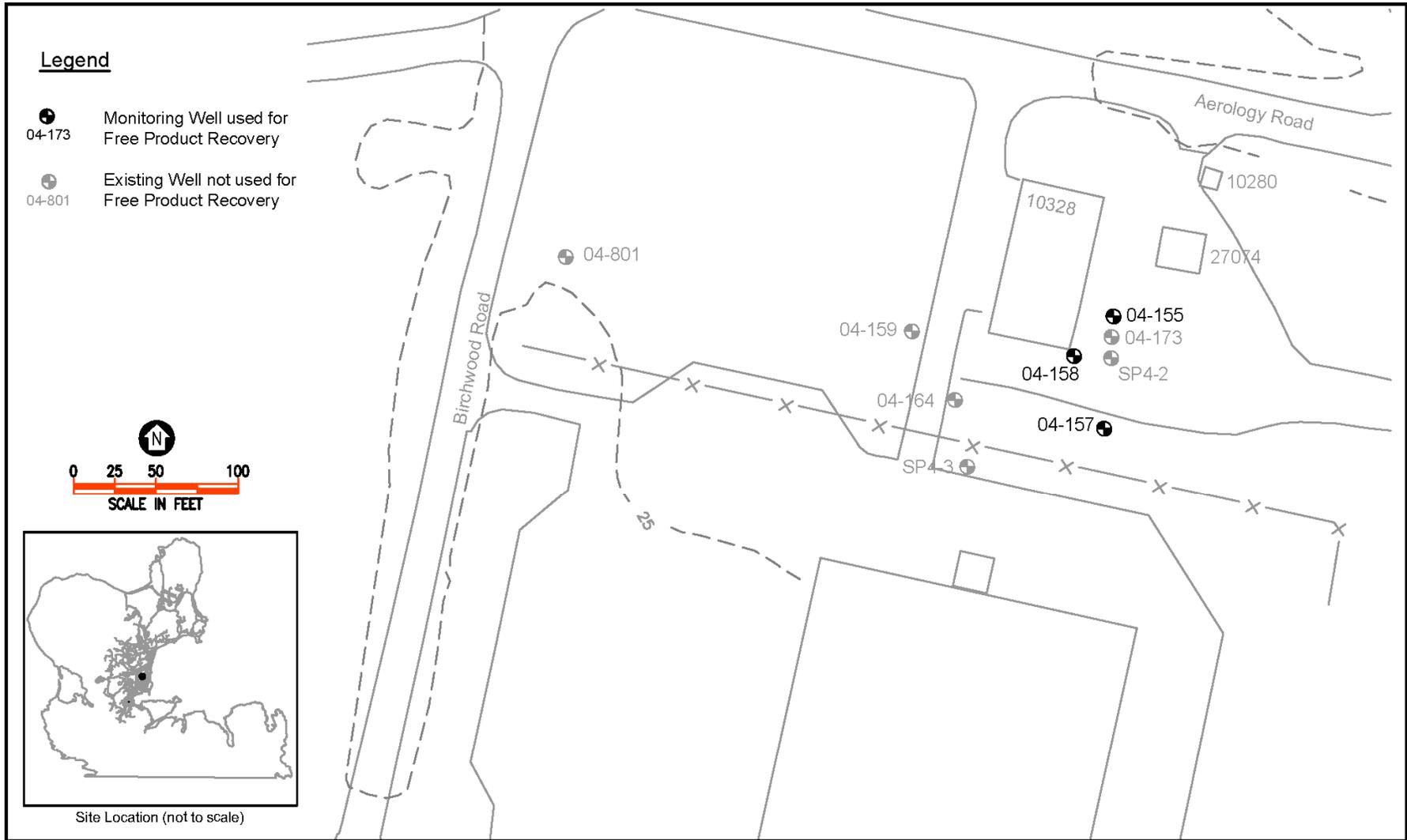
Notes:  
**Bolded well IDs** indicate monitoring wells that had product observed during the reporting period.  
 NM - not measured

**Table 4-4.** Wells Added to Free Product Recovery after Long-Term Monitoring of September 2014

<b>Site</b>	<b>Well ID</b>	<b>Casing Elevation (ft MLLW)</b>	<b>Depth to Water (ft BTOC)</b>	<b>Groundwater Surface Elevation (ft MLLW)</b>	<b>Measured Product Thickness (ft)</b>
NMCB Area	NMCB-08	8.52	6.99	2.37	1.02
South of Runway 18/36	E-216	18.45	15.78	2.92	0.31
South of Runway 18/36	RW-18/36-04	16.29	13.58	2.73	0.03
SWMU 62 (Eagle Bay)	RW-303-16	11.02	7.91	3.61	0.61

*Notes:*  
 BTOC – below top of casing  
 ft – feet  
 MLLW – mean lower low water



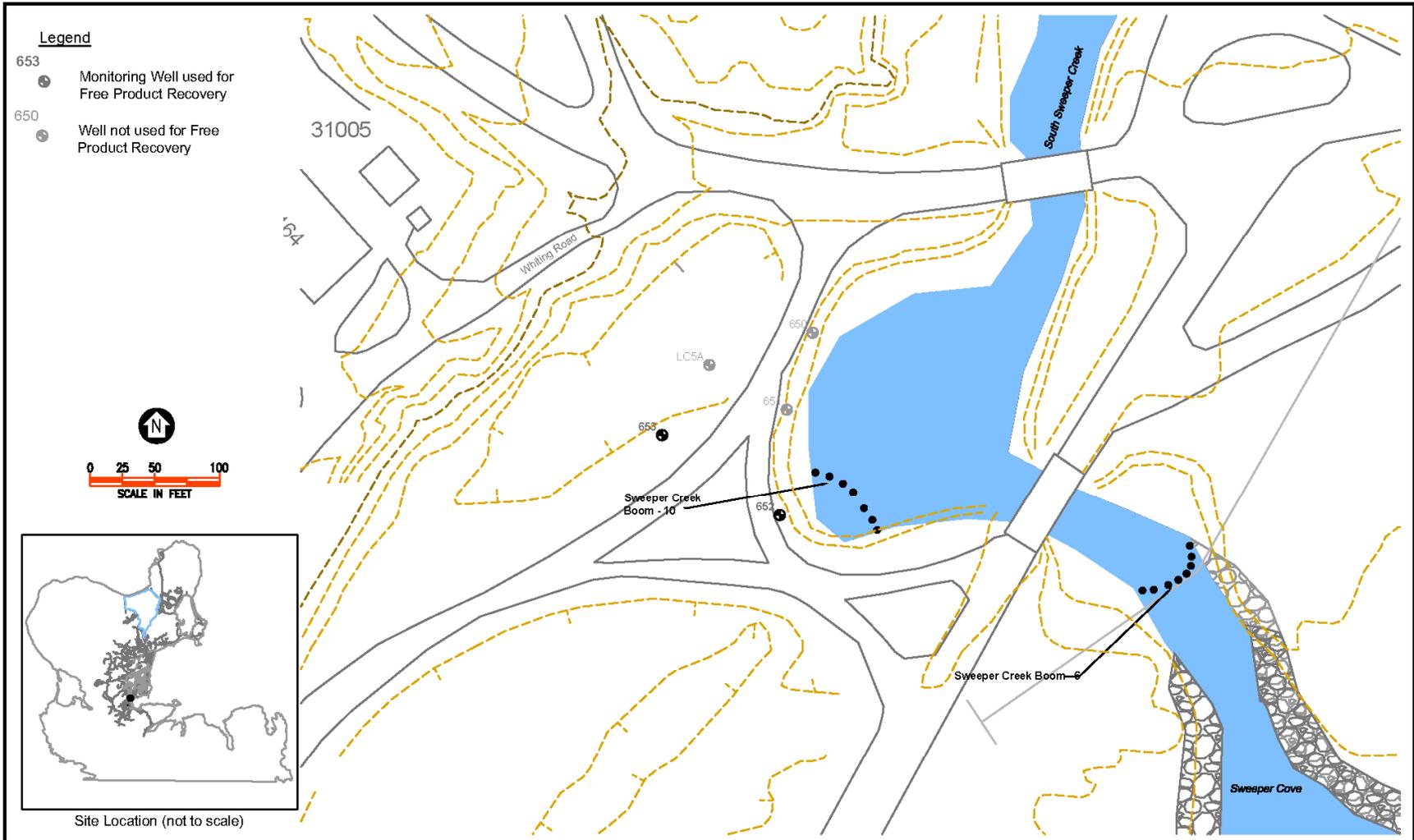


4-13

<p><b>U.S. NAVY</b></p>	<p><b>SEALASKA</b></p>	<p><b>Figure 4-2</b>  <b>Site Features - SA 80, Steam Plant 4</b></p>	<p>Task Order 77                  Remedial Action                  Summary Report                  Adak, AK</p>
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P:\SEALASKA\ADAK\T077\SUM RPT\FIG 4-2 SA 80.DWG  
 PLOT/UPDATE: OCT 10, 2014

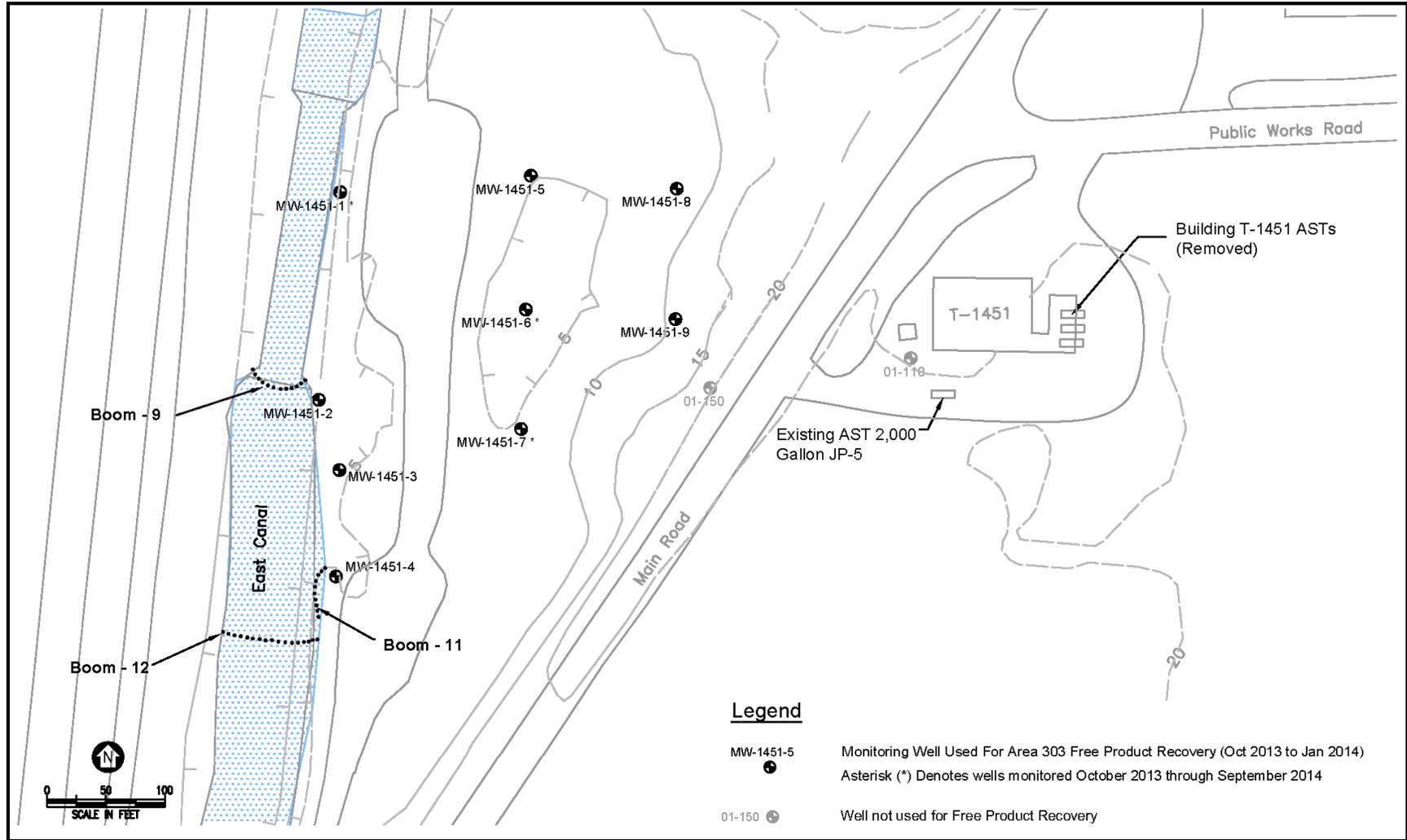
4-14



<p><b>U.S. NAVY</b></p>	<p><b>SEALASKA</b></p>	<p><b>Figure 4-3                  Site Features                  SWMU 60, Tank Farm A</b></p>	<p>Task Order 77                  Remedial Action                  Summary Report</p>
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P:\SEALASKA\ADAK\TO 77\SUM RPT\FIG 4-3 .DWG  
 PLOT/UPDATE: OCT 16, 2014

4-15



<p><b>U.S. NAVY SEALASKA</b></p>	<p align="center"><b>Figure 4-4                  Site Features                  Former Power Plant Building T-1451</b></p>	<p align="center">Task Order 77                  Remedial Action                  Summary Report                  Adak, AK</p>
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P:\SEALASKA\ADAK\TO 77\SUM RPT\FIG 4-4.DWG  
 PLOT/UPDATE: OCT 16, 2014

## 5. BOOM INSPECTION AND MAINTENANCE

During the reporting period, sorbent booms were maintained in the following surface water bodies: East Canal, West Canal, and South Sweeper Creek. The locations of the boom placements are shown in Figures 5-1 and 5-2. Currently, six sorbent booms are located in East Canal: three (Booms 2, 3, and 8) near the SWMU 62 product recovery trench; and three (Booms 9, 11, and 12) downgradient of Former Power Plant, Building T-1451. East Canal Booms 8 and 9 were installed in 2007 at the request of ADEC. In the spring of 2009, Boom 9/12 was lengthened and a third section was added to better prevent sheen migration due to an observed increase in the petroleum seep at this location. Boom 11 was added in November 2009 in response to the discovery of a new shoreline petroleum seep.

A soil removal action was conducted along the East Canal shoreline in 2012 to address the petroleum seep at the Boom 9/12 location. With approval of ADEC, the layout of Boom 9/12 was revised in May 2014. The boom length previously located along the East Canal shoreline south of the adjacent culvert was removed and a new boom length installed at the downstream end of the culvert. No oily sheen or other signs of contamination had been observed along the shoreline since October 2012. The boom section previously located perpendicular to the canal flow just north of Boom 11 was moved to a new position south of Boom 11 to provide additional containment for any oily sheen escaping Boom 11 (Figure 5-1).

Two sorbent booms (Booms 6 and 10) are located in South Sweeper Creek near South of Runway 18-36 Area, and one (Boom 4) was located in West Canal at the pump station. The maintenance of Boom 4 was discontinued in April 2014 per the recommendations presented in the March 2014 Monthly Technical Report (Sealaska 2014). Boom 10 was added during October 2009 in response to the observance of an oil shoreline seep downgradient of SWMU 60, Tank Farm A site.

The purposes of the floating booms are to:

- Adsorb petroleum directly at the identified shoreline seeps (Booms 8, 10, and 11),
- Prevent migration of sheen and oil to the extent practicable from shoreline seeps downstream in East Canal (Booms 3, 9, and 12),
- Prevent sheen from shoreline seeps in East Canal from migrating upstream (Boom 2),

- Prevent sheen from migrating from shoreline seeps into Sweeper Cove (Boom 10), and
- Prevent potential sheen from South Sweeper Creek from entering Sweeper Cove (Boom 6).

Booms were inspected monthly for effective placement, product saturation, and overall condition and effectiveness. Sections of booms were replaced if required (i.e., saturated with product, waterlogged, or damaged). Booms were also repositioned or repaired if they became unattached from the shoreline or twisted because of weather or tide events. The observation and location of any observed sheen or seep at each boom location were documented on field forms and with photographs (Appendices A and B, respectively). Table 5-1 summarizes the inspection and maintenance of the booms for the reporting period.

Boom locations were inspected for evidence of contamination, including sheen on surface water, iron staining, oily soil or sediment, stressed vegetation, and pooled product. Sheen was observed at least once during the reporting period at Booms 3, and 8 through 12. Sheen was not observed at Booms 2, 4, or 6 during any monthly inspection. Boom 4 has since been removed as stated above.

Sheen, oil saturated soils, stressed vegetation, and pooled product along the shoreline typically occurred at the petroleum shoreline seep in East Canal downgradient of the SWMU 62 product recovery trench. Booms deployed to control sheen at this seep include locations 2, 3, and 8 (see Figure 4-1). Sheen was observed during all 12 monthly inspections at Boom 8, located along the shoreline and during 10 monthly maintenance events at Boom 3, which is downstream of Boom 8. Pooled product was removed by hand using sorbent pads at Boom 8 during two monthly maintenance events. Booms 2 and 3 appear to have effectively prevented sheen that escapes from Boom 8 from migrating further downstream in East Canal or upstream during flood events.

Similar to the seep at SWMU 62, the petroleum seep on the shoreline of East Canal downgradient from Former Power Plant, Building T-1451, has previously been characterized by sheen, oil saturated soils, stressed vegetation, and pooled product along the shoreline. To control sheen at this seep, Boom 9/12 was placed across the culvert, along the shoreline, and spanning the East Canal (see Figure 5-1).

In June and July 2012, a removal action was conducted downgradient from Former Power Plant, Building T-1451, in the area of Boom 9/12 to remove sources of petroleum contamination in the soil and seeps along the shoreline on East Canal. The shoreline was excavated, replaced with clean fill amended with Oxygen-Releasing Compound, and re-contoured.

A smaller shoreline petroleum seep is located in East Canal just downstream (south) of the Former Power Plant removal action (see Figure 5-1). At this seep, sheen, oily sediments, and stressed vegetation were observed during all 12 monthly inspections of Boom 11, which is placed along the shoreline.

Booms 9/12 were reconfigured in May 2014, with a designated Boom 9 located downstream of the East Canal culvert and Boom 12 located downstream of Boom 11 (Figure 5-1). Both booms cross East Canal to contain seepage from Boom 11. Sheen was observed behind Boom 12 during three monthly maintenance visits following its placement downstream of Boom 11.

Sheen was not observed at Boom 6 (see Figure 5-2) in South Sweeper Creek during the period of performance. However, sheen, or oil-stained sediment, was observed during all 12 monthly inspections at Boom 10 in South Sweeper Creek lagoon downgradient of SWMU 60, Tank Farm A site.

The booms placed in East Canal have effectively controlled the migration of sheen on surface water, as shown by the field forms (Appendix A) and the observance of minimal petroleum sheen at downstream Boom 6 (Table 5-1). Therefore, it is recommended that boom replacement be continued at all locations (2, 3, 6, and 8 through 12) as needed (i.e., as they become saturated, waterlogged, or damaged).

All spent booms and socks, recovered product, used personal protective equipment, and other contaminated material used to conduct task order activities were incinerated in a Smart-Ash burner at the bunker storage unit as per the Operations and Maintenance Plan (Sealaska 2013a) and the Quality Control Plan (Sealaska 2013b).

**Table 5-1. October 2013 through September 2014 Boom Maintenance Summary**

<b>Location</b>	<b>Boom No.</b>	<b>Length (feet)</b>	<b>Boom Purpose</b>	<b>No. of Months Contamination Observed<sup>1</sup></b>	<b>No. of Months Boom Maintenance Required</b>	<b>Total No. of 10-Foot Long Sections of Boom Replaced</b>
East Canal (SWMU 62 Recovery Trench)	2	20	Prevent sheen migration upstream of SWMU 62 shoreline seep	0	5	4
East Canal (SWMU 62 Recovery Trench)	3	70	Prevent sheen migration downstream of SWMU 62 shoreline seep	10	1	8
West Canal Culvert	4	30	Prevent sheen migration from East Canal into West Canal (removed in April 2014)	0	2	0
South Sweeper Creek Main Road Bridge	6	60	Prevent sheen migration to Sweeper Cove	0	2	9
East Canal (SWMU 62 Recovery Trench)	8	120	Adsorb sheen and oil at SWMU 62 shoreline seep	12	3	16
East Canal (Building T-1451) <sup>2</sup>	9	50	Prevent sheen migration downstream of SWMU 62 shoreline seep	0	4 <sup>3</sup>	18 <sup>3</sup>
South Sweeper Creek Lagoon, SWMU 60 Seep	10	90	Adsorb sheen and oil at SWMU 60 shoreline seep	12	1	12
East Canal Shoreline Seep, 85 feet downstream of Boom 9	11	40	Adsorb sheen and oil at Building T-1451 shoreline seep	12	3	9
East Canal (Building T-1451) <sup>2</sup>	12	80	Prevent sheen migration downstream of Building T-1451 shoreline seep	3	--	--

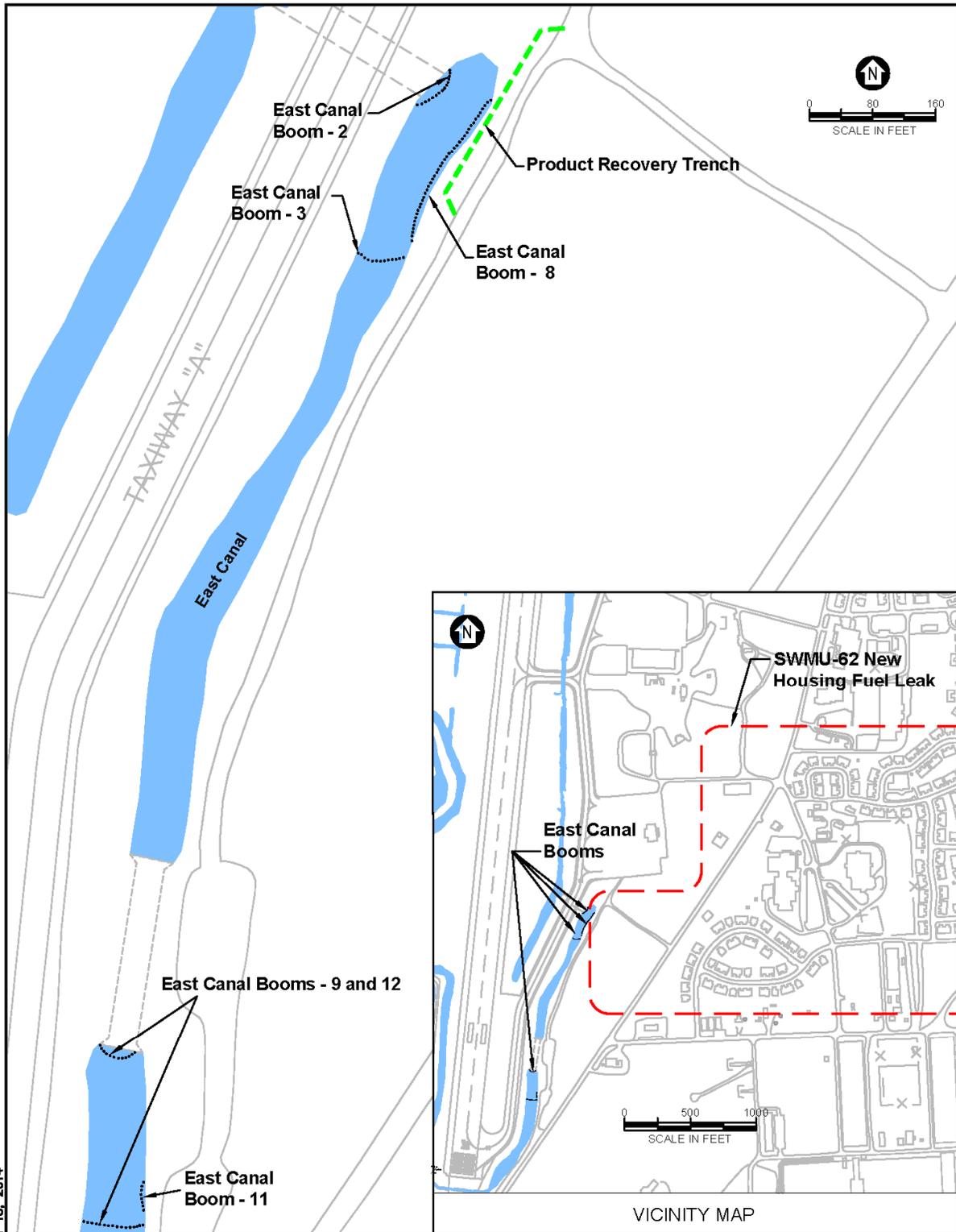
*Note:*

<sup>1</sup> Contamination observed includes any of the following: sheen on surface water, oily sediment or soil, stressed vegetation, or pooled product.

<sup>2</sup> Booms 9 and 12 were formerly listed as Boom 9/12. With repositioning in May 2014, the booms have been relabeled to avoid confusion.

<sup>3</sup> Totals include both Booms 9 and 12.

S-4

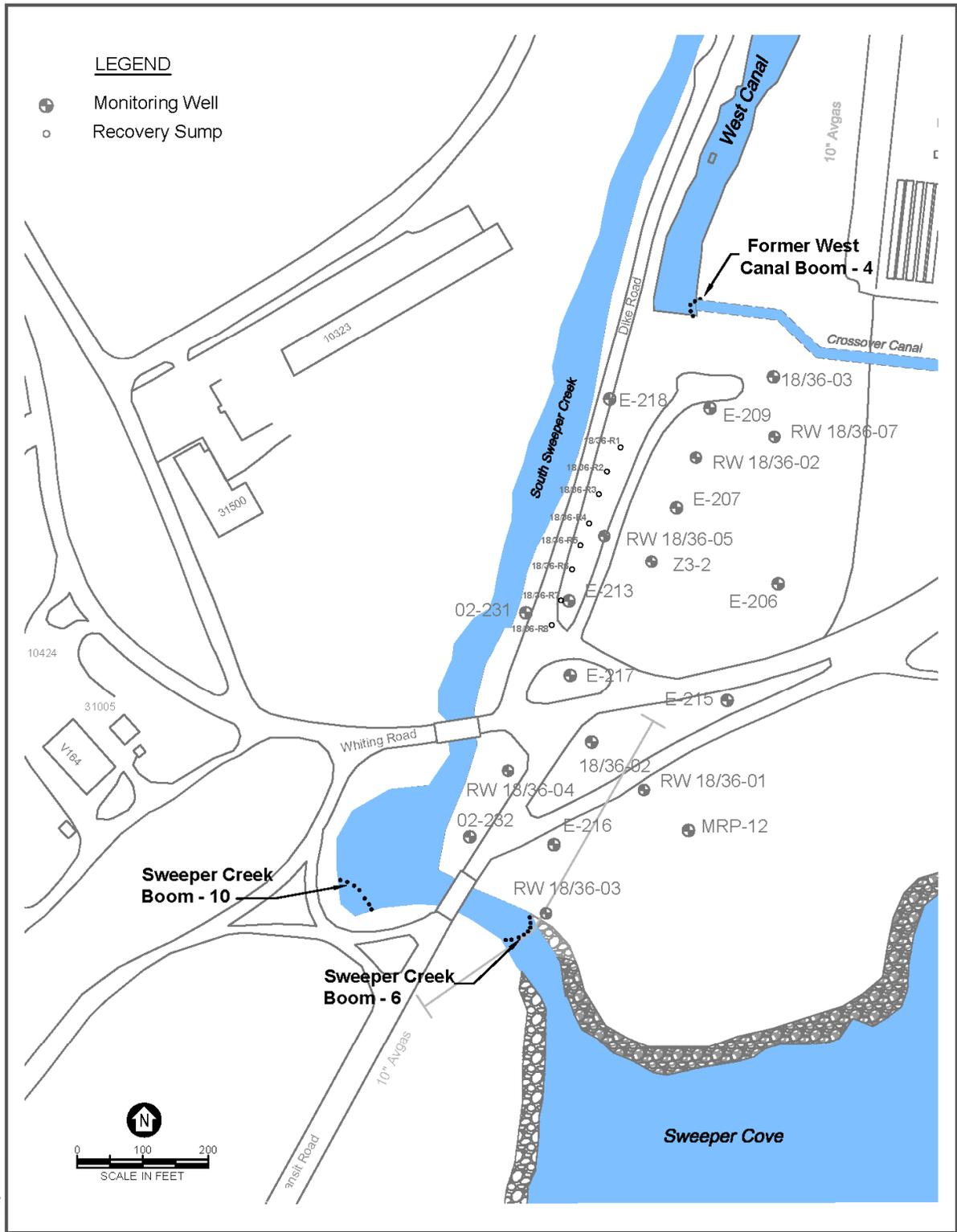


P:\SEALASKA\ADAK\TO 77\SUMM RPT\FIG 5-1.DWG  
 PLOT/UPDATE: OCT 13, 2014

**U.S.NAVY SEALASKA**

**Figure 5-1  
 East Canal Boom Locations**

Task Order 77  
 Remedial Action  
 Summary Report  
 Adak, Alaska



P:\SEALASKA\ADAK\TO\_77\SUM RPT\FIG 5-2  
 PLOT/UPDATE  
 OCT 10, 2014

<p><b>U.S. NAVY</b></p>	<p><b>SEALASKA</b></p>	<p><b>Figure 5-2</b>  <b>West Canal and South Sweeper Creek</b>  <b>Boom Locations</b></p>	<p>Task Order 77                  Remedial Action                  Summary Report                  Adak, Alaska</p>
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## **6. CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 FREE PRODUCT RECOVERY CONCLUSIONS**

Free product recovery and monitoring was conducted from October 2013 through September 2014 on Adak Island, Alaska at SWMU 62, New Housing Fuel Leak Area; Area 303; and four additional petroleum sites.

As detailed in Section 2.0, the SWMU 62 site has achieved the OU A ROD practical endpoint for a passive recovery system. The monthly volume of recovered product, averaged over the most recent 6 months (6-month moving average), was less than 5 gallons per month for a period of 12 months of product recovery. The overall historic free product recovery rate appears to be decreasing.

Free product is present at levels greater than 0.01 feet in one or more of the recovery sumps located in the recovery trench at SWMU 62, New Housing Fuel Leak Area. Therefore, this site has not met the requirements as stated in the final decision document and product monitoring and recovery site visits are still warranted at this area. Free product was detected at least once in eight of the fifteen wells and sumps monitored, and was recovered from five of the fifteen wells/sumps monitored during the reporting period. The total volume of free product recovered during the October 2013 through September 2014 reporting period was 12.41 gallons.

In most instances during the year, product thickness fell to below 0.1 feet by the end of the recovery event each month, so canister skimmers were removed from wells at the end of the field event. Occasionally, product thickness in wells exceeded 0.1 feet and canister skimmers were left in those wells until the next scheduled field event. This occurred periodically mainly at recovery sumps SWMU62-R3 and SWMU62-R4. The effectiveness of the canister skimmers was assessed by reviewing the maximum volumes recovered during the reporting period versus the capacity of the canister skimmers. In most cases, product volumes recovered did not fill the canister skimmers to more than 75 percent capacity, indicating that they were effective.

For Area 303, seventeen wells were monitored on a monthly basis from October 2013 through January 2014, after which three wells were continued on a six-event per year schedule consistent with the SWMU 62 schedule. No free product was observed in any of the monitoring wells, and no product was recovered, during the October 2013 through September 2014 reporting period.

At the additional petroleum sites, a total of 11.36 gallons of free product was recovered: at NMCB Expanded Area (1.40 gallons); SA 80, Steam Plant 4 (1.28 gallons); and Former Power Plant, Building T-1451 (8.68 gallons). No free product was recovered at SWMU 60, Tank Farm A, during the 12-month reporting period.

Review of the reporting period data indicates that the rates of product recovery and product thickness vary over the 12-month monitoring period. At the monitoring wells that have not had measurable product over the last 12 months, the cessation of free product recovery activities at these locations (excluding recovery sumps) is warranted. To ensure that free product does not migrate and that groundwater flows do not significantly change in the future, annual monitoring for free product will be conducted for the entire set of wells under the Adak LTM Program, scheduled for August/September 2015.

## **6.2 BOOM OPERATION AND MAINTENANCE CONCLUSIONS**

Booms were placed and maintained at nine locations in East Canal and South Sweeper Creek to keep petroleum sheen from migrating away from seeps and to prevent the contamination from migrating to other downstream surface water bodies. Booms were maintained and inspected on a monthly basis throughout the reporting period. Petroleum sheen was observed and contained in South Sweeper Creek frequently at Boom 10, but never observed downstream at Boom 6. Sheen was typically observed monthly at boom locations in East Canal, particularly at Booms 8 and 11 positioned along the shoreline seeps, but Booms 3 and 12 controlled the downstream migration of the sheen. Booms located in East Canal are regularly replaced due to the quantity of petroleum flowing from shoreline seeps here. The Navy will continue to monitor the seeps along the shoreline of East Canal downgradient of SWMU 62 and will implement remedial action as necessary.

## **6.3 RECOMMENDATIONS**

Based on the above conclusions, the following recommendations are made for future free product recovery activities and for boom maintenance:

### **6.3.1 SWMU 62, New Housing Fuel Leak Area**

- Because of the continued observance of free product, continue to conduct periodic monitoring and free product recovery activities at all six recovery sumps and the following five wells: 03-101, 03-102, HMW-303-11, MW-303-8, and RW-303-15.
- Because product was not observed on groundwater during October 2013 through September 2014, it is recommended that product recovery be discontinued at wells HMW-303-03, MW-15, MW 303-12 and RW-303-4.

- During the 2104 LTM field event, 0.61 feet of product was observed in well MW-303-16. It is recommended that free product recovery be performed at this well during the October 2014 through September 2015 reporting period.

### **6.3.2 Area 303**

- Because no free product was observed in any of the monitoring wells, and no product was recovered, during the October 2013 through September 2014 reporting period, free product recovery at the three wells currently monitored should be discontinued.

### **6.3.3 Additional Sites**

- At SWMU 60, Tank Farm A, although no product was recovered from the two wells monitored, measureable product was detected during one of the six monitoring events. It is recommended that monitoring continue for at least one additional reporting period (one year) due to the continued presence of the downgradient seep on Sweeper Creek (Boom 10).
- Continue free product recovery at all currently monitored wells at SA 80, Steam Plant 4 and NMCB Expanded Area, during the October 2014 through September 2015 reporting period.
- During the 2104 LTM field event, 1.02 feet of product was observed in well NMCB-08 at NMCB Expanded Area site. It is recommended that free product recovery be initiated at this well and continued during the October 2014 through September 2015 reporting period.
- Product was not observed in NMCB Expanded Area well 02-497 between October 2013 and September 2014; therefore it is recommended that product recovery activities be discontinued at this well.
- At Former Power Plant, Building T-1451, continue free product recovery at the three currently monitored wells during the October 2014 through September 2015 reporting period.
- At South of Runway 18/36, monitoring during the 2014 LTM field event observed 0.31 feet of product in well E-216 and 0.03 feet of product in well RW-18/36-04. It is recommended that free product recovery be initiated at these wells and continued during the October 2014 through September 2015 reporting period.

#### **6.3.4 Boom Maintenance**

- Continue periodic inspection and maintenance activities for all current booms located in East Canal and South Sweeper Creek.
- High water events have continued to occur frequently in East Canal. During the high water periods, monitoring of the seeps and boom maintenance are often difficult. The pumps used to moderate the water levels in the canals are operated by Alaska Department of Transportation (ADOT) to prevent water from flowing over the airport runways. The Navy should continue to work with ADOT to determine an appropriate schedule for dewatering the canals that will less impact the free product migration and potential release of product sheen to the canal.

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**APPENDIX A**  
**FIELD FORMS**  
**(Provided on compact disc)**



## Boom Inspection Form

Task Order ~~58~~ 77

<b>Boom Location: 2</b>	<b>Time/Date:</b> <span style="font-size: 1.2em;">1325/10-8-13</span>
<b>Description of Boom Before Maintenance:</b> <span style="font-size: 1.2em; font-family: cursive;">SATISFACTORY</span>	<b>Photograph (s) Time/Date Stamp:</b> <span style="font-size: 1.2em;">1325/10-8-13</span>
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:

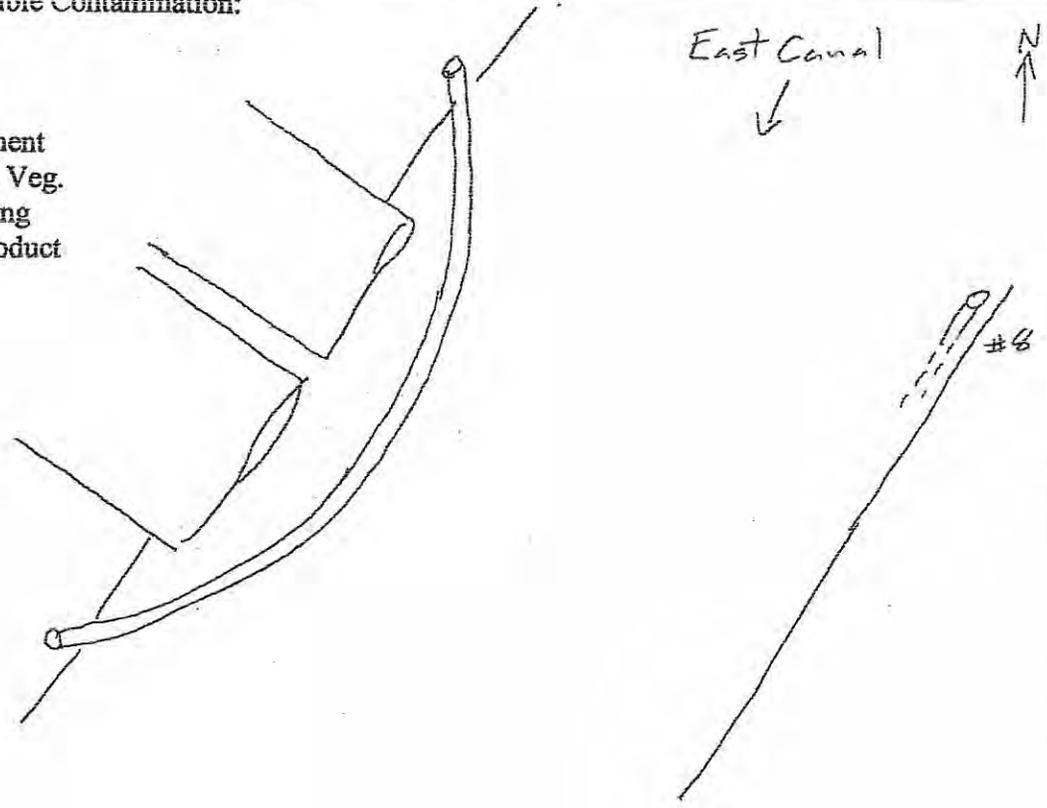
**Visual Observations**

Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?
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**Location of Visible Contamination:**

Legend

- //// Sheen
- \\ \\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- Pooled Product



<b>Inspector:</b> <span style="font-size: 1.2em; font-family: cursive;">JOHN HIGGSTONE</span>	<b>Signature:</b> <span style="font-size: 1.2em; font-family: cursive;">John Higgle</span>
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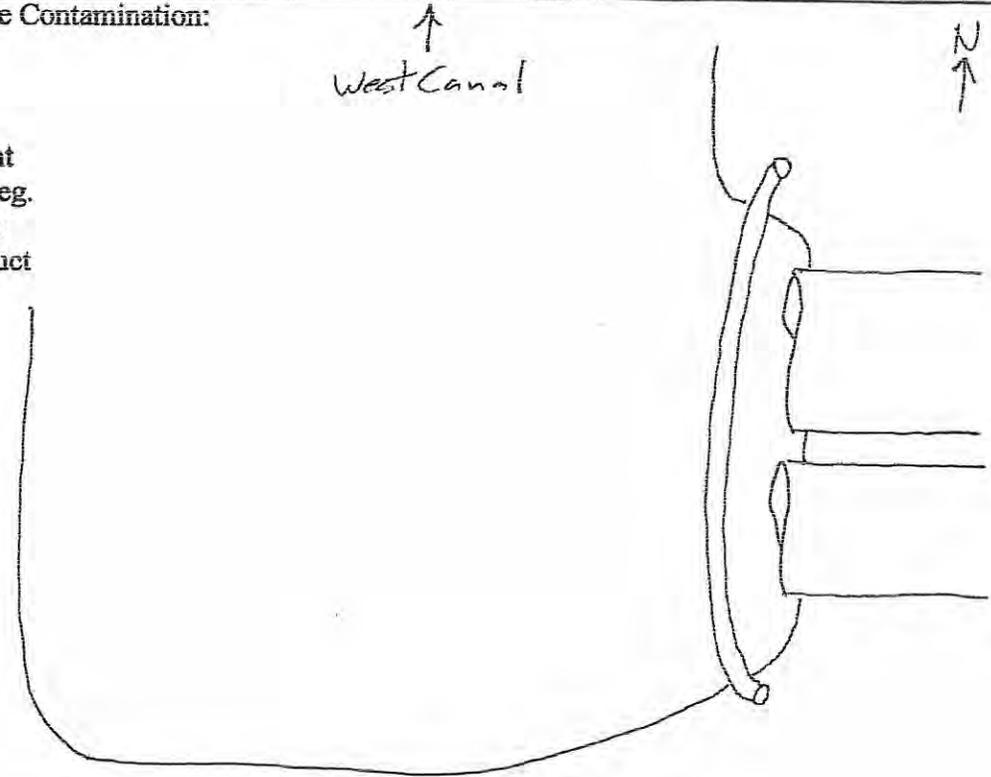
### Boom Inspection Form

Task Order ~~80~~ 77

<b>Boom Location: 3</b>	<b>Time/Date:</b> 1326/10-8-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1326/10-8-13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N): Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b> <div style="display: flex; justify-content: space-between;"> <div data-bbox="219 940 487 1144"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>rrr Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="324 882 1461 1638"> <p style="text-align: center;">East Canal</p> <p style="text-align: right;">N ↑</p> </div> </div>	
<b>Inspector:</b> JOHN HIGHTSTONE	<b>Signature:</b> 

### Boom Inspection Form

Task Order 89 77

<b>Boom Location:</b> 4	<b>Time/Date:</b> 1342 / 10-8-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1342 / 10-8-13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N) (N) Iron Staining (Y/N) (N) Oily Sediment/Soil (Y/N) (N) Distressed Vegetation (Y/N) (N)	
Sheen Present on Water (Y/N) (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div data-bbox="219 936 487 1155"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="487 936 1502 1732">  </div> </div>	
<b>Inspector:</b> JOHN HIGASTONE	<b>Signature:</b> <i>John Higastone</i>

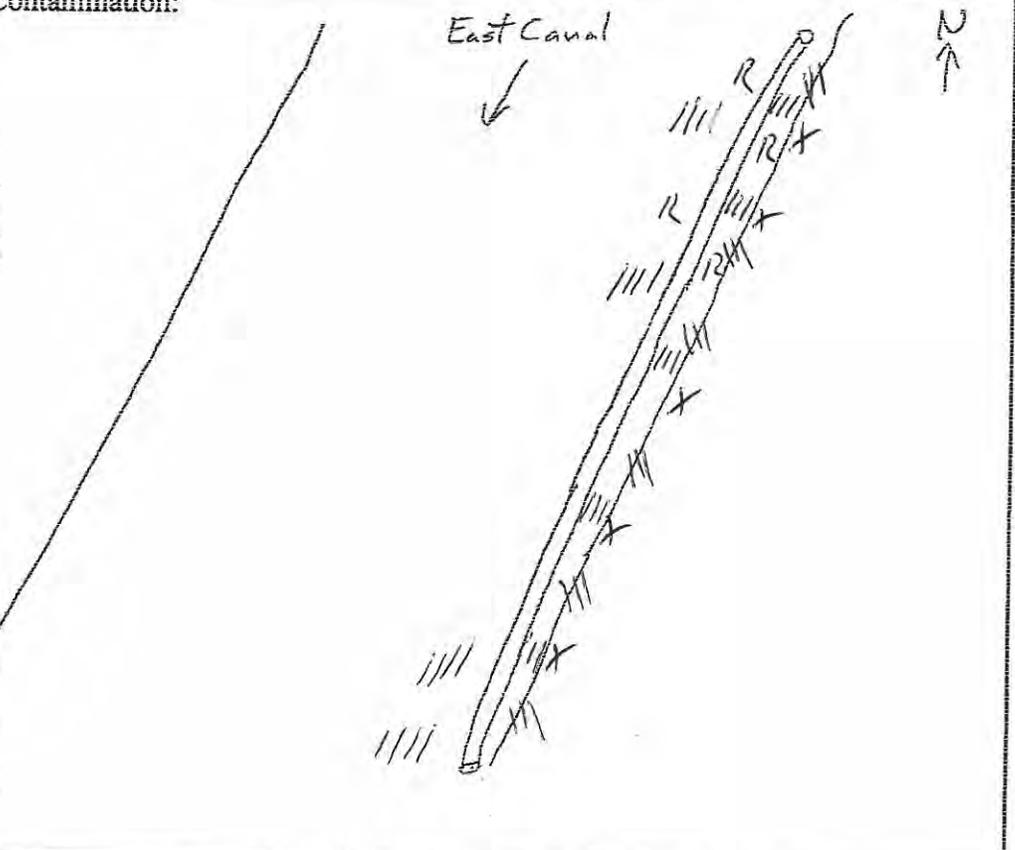
### Boom Inspection Form

Task Order ~~80~~ 77

Boom Location: 6	Time/Date: 1348 / 10-8-13
Description of Boom Before Maintenance: UNSATISFACTORY	Photograph (s) Time/Date Stamp: 1348 / 10-8-13
Boom Repaired (Y/N): Description: REATTACHED NORTH END OF BOOM ONTO STAKE	Boom Replaced (Y/N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N): Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;"> <p>South Swapper Creek</p> </div> </div>	
Inspector: JOHN HIGHSTONE	Signature: [Handwritten Signature]

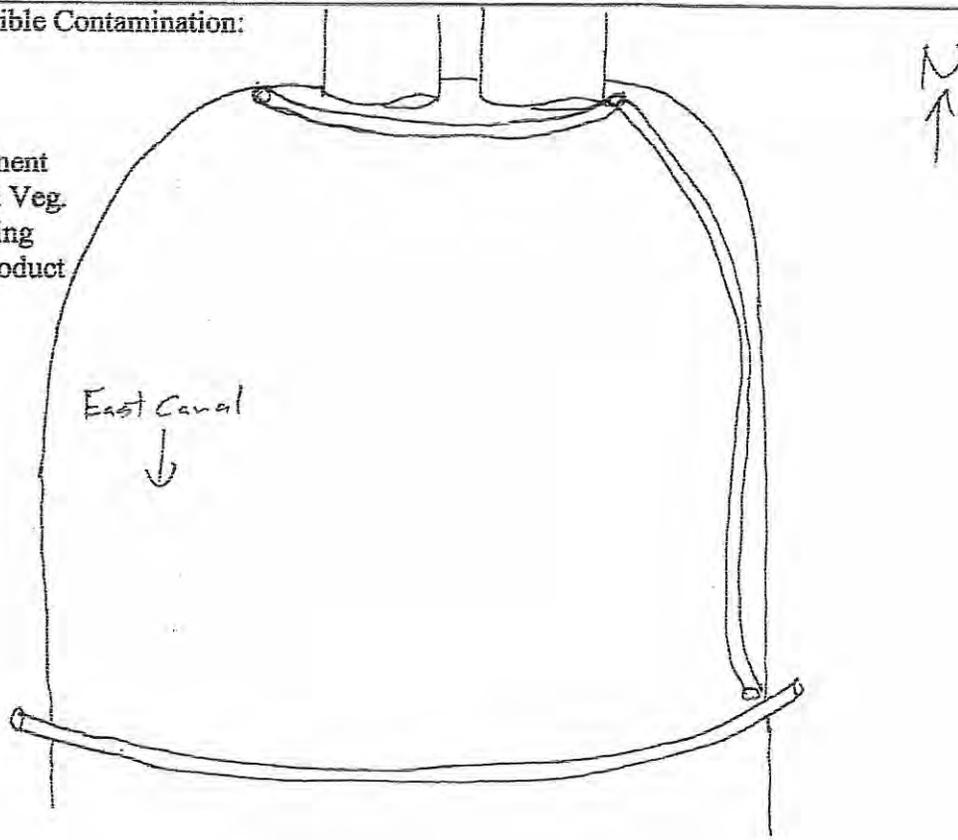
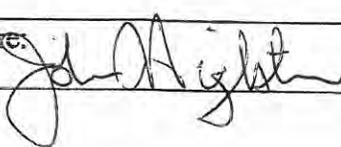
### Boom Inspection Form

Task Order ~~80~~ 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 1326/10-8-13
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1326/10-8-13
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N): Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div data-bbox="219 934 487 1144" style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>     Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="487 882 1502 1732" style="width: 70%;">  </div> </div>	
<b>Inspector:</b> JOHN MICHSTONE	<b>Signature:</b> <i>John Michstone</i>

### Boom Inspection Form

Task Order ~~80~~ 77

<b>Boom Location:</b> 9/12	<b>Time/Date:</b> 1331/10-8-13
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1331/10-8-13
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGBSTONE	<b>Signature:</b> 

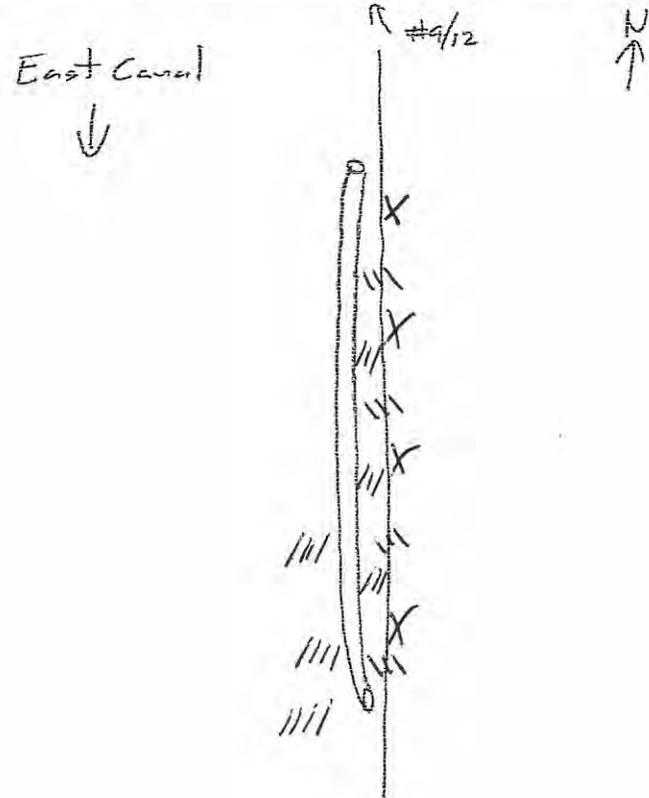
### Boom Inspection Form

Task Order ~~00~~ 77

Boom Location: 10	Time/Date: 1345/10-8-13
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 1345/10-8-13
Boom Repaired (Y/N): Description:	Boom Replaced (Y/N) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y/N):          Iron Staining (Y/N):          Oily Sediment/Soil (Y/N):          Distressed Vegetation (Y/N):</p> <p>Sheen Present on Water (Y/N):          Is the Boom Containing the Sheen? (Y/N)          Pooled Product (Y/N):          If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>//// Sheen</li> <li>     Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>● Pooled Product</li> </ul> <p>The map shows a curved boom structure. 'South Swapper Creek' is labeled with an arrow pointing to a section of the boom. 'Main Rd Bridge' is labeled with an arrow pointing to a straight section of the boom. Contamination markers are present: '////' (sheen) and '    ' (oily sediment) are marked along the boom. 'xxx' (distressed vegetation) is marked near the creek. A north arrow is drawn in the upper right corner of the map area.</p>	
Inspector: JOHN HIGGSTONE	Signature: [Handwritten Signature]

## Boom Inspection Form

Task Order ~~66~~ 77

<b>Boom Location:</b> 11	<b>Time/Date:</b> 1333 / 10-8-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1333 / 10-8-13
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;"> <p>East Canal</p> <p>↓</p> </div> 
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>



### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 2	<b>Time/Date:</b> 1222 / 11-9-13
<b>Description of Boom Before Maintenance:</b>  UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1222 / 11-9-13
<b>Boom Repaired (Y/N):</b> Description: MOVE BACK INTO POSITION OFF SHORELINE DUE TO HIGH WINDS	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> <b>Visible Contamination (Y/N):</b> <b>Iron Staining (Y/N):</b> <b>Oily Sediment/Soil (Y/N):</b> <b>Distressed Vegetation (Y/N):</b> <b>Sheen Present on Water (Y/N):</b> <b>Is the Boom Containing the Sheen? (Y/N)</b> <b>Pooled Product (Y/N):</b> <b>If yes, was product removed with sorbent pads?</b>	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHTSTONE	<b>Signature:</b> John A. Hightstone

Sealaska Environmental Services, LLC  
Poulsbo, Washington



### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 3	<b>Time/Date:</b> 1224 / 11-9-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1224 / 11-9-13
<b>Boom Repaired (Y/N):</b> (Y) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> <b>Visible Contamination (Y/N):</b> (Y) <b>Iron Staining (Y/N):</b> (N) <b>Oily Sediment/Soil (Y/N):</b> (N) <b>Distressed Vegetation (Y/N):</b> (N)	
<b>Sheen Present on Water (Y/N):</b> (Y) <b>Is the Boom Containing the Sheen? (Y/N):</b> (Y) <b>Pooled Product (Y/N):</b> (N) <b>If yes, was product removed with sorbent pads?</b>	
<b>Location of Visible Contamination:</b> 	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John A. Highstone</i>

Sealaska Environmental Services, LLC  
Poulsbo, Washington



### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 4	<b>Time/Date:</b> 1241 / 11-9-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1241 / 11-9-13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N): Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p><u>Legend</u></p> <p>/// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>• Pooled Product</p> </div> <div style="width: 55%;"> <p style="text-align: center;">↑ West Canal</p> </div> </div>	
<b>Inspector:</b> JOHN HIGGINS	<b>Signature:</b> John Higgins



### Boom Inspection Form

Task Order 77

<b>Boom Location: 6</b>	<b>Time/Date:</b> 1249 / 11-9-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1249 / 11-9-13
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> <b>Visible Contamination (Y/N):</b> <b>Iron Staining (Y/N):</b> <b>Oily Sediment/Soil (Y/N):</b> <b>Distressed Vegetation (Y/N):</b> <b>Sheen Present on Water (Y/N):</b> <b>Is the Boom Containing the Sheen? (Y/N)</b> <b>Pooled Product (Y/N)</b> <b>If yes, was product removed with sorbent pads?</b>	
<b>Location of Visible Contamination:</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;"> <p>South Swager Creek</p> </div> </div>	
<b>Inspector:</b> John Highstone	<b>Signature:</b> <i>John Highstone</i>

Sealaska Environmental Services, LLC  
Poulsbo, Washington



### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 12 <sup>23</sup> /11-9-13
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 12 <sup>23</sup> /11-9-13
<b>Boom Repaired (Y/N):</b> Description: MOVED BACK INTO POSITION OFF SHORELINE DUE TO HIGH WINDS	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> <b>Visible Contamination (Y/N):</b> Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
<b>Sheen Present on Water (Y/N):</b> Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads? YES - SOAKED 2 PAD	
<b>Location of Visible Contamination:</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 65%;"> </div> </div>	
<b>Inspector:</b> JONN HIGGINS	<b>Signature:</b> <i>[Handwritten Signature]</i>

Sealaska Environmental Services, LLC  
Poulsbo, Washington



### Boom Inspection Form

Task Order 77

Boom Location: 9/12	Time/Date: 12 <sup>30</sup> /11-9-13								
Description of Boom Before Maintenance: UNSTABLE FACTORY	Photograph (s) Time/Date Stamp: 12 <sup>30</sup> /11-9-13								
Boom Repaired (Y/N): Description: MOVE BACK INTO POSITION OFF SHORELINE DUE TO HIGH WINDS	Boom Replaced (Y/N)/ Number of Sections: Description:								
<p><b>Visual Observations</b></p> <table border="0"> <tr> <td>Visible Contamination (Y/N):</td> <td>Sheen Present on Water (Y/N):</td> </tr> <tr> <td>Iron Staining (Y/N):</td> <td>Is the Boom Containing the Sheen? (Y/N)</td> </tr> <tr> <td>Oily Sediment/Soil (Y/N):</td> <td>Pooled Product (Y/N):</td> </tr> <tr> <td>Distressed Vegetation (Y/N):</td> <td>If yes, was product removed with sorbent pads?</td> </tr> </table>		Visible Contamination (Y/N):	Sheen Present on Water (Y/N):	Iron Staining (Y/N):	Is the Boom Containing the Sheen? (Y/N)	Oily Sediment/Soil (Y/N):	Pooled Product (Y/N):	Distressed Vegetation (Y/N):	If yes, was product removed with sorbent pads?
Visible Contamination (Y/N):	Sheen Present on Water (Y/N):								
Iron Staining (Y/N):	Is the Boom Containing the Sheen? (Y/N)								
Oily Sediment/Soil (Y/N):	Pooled Product (Y/N):								
Distressed Vegetation (Y/N):	If yes, was product removed with sorbent pads?								
<p>Location of Visible Contamination:</p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>//// Sheen</li> <li>\\\\\\ Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>• Pooled Product</li> </ul> </div> <div style="flex: 2; text-align: center;"> </div> </div>									
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>								

Sealaska Environmental Services, LLC  
Poulsbo, Washington



### Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	Time/Date: 1247/11-9-13
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 1247/11-9-13
Boom Repaired (Y/N): Description:	Boom Replaced (Y/N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <b>Legend</b> //// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
Inspector: JOHN HIGGSTONE	Signature: John H. Higgstone

Sealaska Environmental Services, LLC  
 Poulsbo, Washington



### Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 12 <sup>32</sup> / 11-9-13
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 12 <sup>32</sup> / 11-9-13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b>	
Visible Contamination (Y/N): (Y)	Sheen Present on Water (Y/N): (Y)
Iron Staining (Y/N): (N)	Is the Boom Containing the Sheen? (Y/N): (Y)
Oily Sediment/Soil (Y/N): (Y)	Pooled Product (Y/N): (N)
Distressed Vegetation (Y/N): (Y)	If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p>	<p>East Canal</p> <p>↓</p> <p>↑ #9/12</p> <p>↑ N</p>
<b>Inspector:</b> JOHN HIGGSTONE	<b>Signature:</b> John Higstone

Sealaska Environmental Services, LLC  
Poulsbo, Washington



## Boom Inspection Form

Task Order 8077

<b>Boom Location:</b> 2	<b>Time/Date:</b> 1202/12/7/13		
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1202 - 12/7/13		
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>		
<p><b>Visual Observations</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;">                 Visible Contamination (Y/N): (N)                  Iron Staining (Y/N): (N)                  Oily Sediment/Soil (Y/N): (N)                  Distressed Vegetation (Y/N): (N)             </td> <td style="width: 50%; border: none; vertical-align: top;">                 Sheen Present on Water (Y/N): (N)                  Is the Boom Containing the Sheen? (Y/N)                  Pooled Product (Y/N): (N)                  If yes, was product removed with sorbent pads?             </td> </tr> </table>		Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?
Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?		
<p><b>Location of Visible Contamination:</b></p> <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>			
<b>Inspector:</b> JOHN HIGHTSTONE	<b>Signature:</b> <i>John Hightstone</i>		



## Boom Inspection Form

Task Order ~~60~~ 77

<b>Boom Location: 3</b>	Time/Date: <i>Job 12/1201-12/7/13</i>
Description of Boom Before Maintenance:  <div style="text-align: center; font-size: 1.2em;"><i>SATISFACTORY</i></div>	Photograph (s) Time/Date Stamp:  <div style="text-align: center; font-size: 1.2em;"><i>1201-12/7/13</i></div>
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N)/ Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N): Iron Staining (Y <input checked="" type="radio"/> N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N): Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N) Pooled Product (Y <input checked="" type="radio"/> N) If yes, was product removed with sorbent pads?	
Location of Visible Contamination:	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;"> <i>East Canal</i>  </div>
Inspector: <i>JOHN HIGHTSTONE</i>	Signature: <i>John Hightstone</i>



## Boom Inspection Form

Task Order ~~60~~ 77

<b>Boom Location:</b> 4	<b>Time/Date:</b> 1215-12/7/13
<b>Description of Boom Before Maintenance:</b>  UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1215-12/7/13
<b>Boom Repaired (Y/N):</b> Description: REPOSITION INTO PLACE AND RECLIP ONE BOOM CLIP	<b>Boom Replaced (Y/N) Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N) <input checked="" type="radio"/> N Iron Staining (Y/N) <input checked="" type="radio"/> N Oily Sediment/Soil (Y/N) <input checked="" type="radio"/> N Distressed Vegetation (Y/N) <input checked="" type="radio"/> N  Sheen Present on Water (Y/N) <input checked="" type="radio"/> N Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) <input checked="" type="radio"/> N If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;"> <p>↑ West Canal</p> </div> </div>	
<b>Inspector:</b> JOHN HIGHESTONE	<b>Signature:</b> 

→ (1) DIKE PUMP ON AND OPERATING





## Boom Inspection Form

Task Order ~~60~~ 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 1201-12/7/13
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1201-12/7/13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>     Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 50%;"> <p style="text-align: center;">East Canal</p> </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 



## Boom Inspection Form

Task Order **60 77**

<b>Boom Location:</b> 9/12	<b>Time/Date:</b> 1157-12/7/13
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1157-12/7/13
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> John Highstone



## Boom Inspection Form

Task Order 60 77

<b>Boom Location:</b> 10	<b>Time/Date:</b> 1216-12/7/13		
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1216-12/7/13		
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) <b>Number of Sections:</b> <b>Description:</b>		
<p><b>Visual Observations</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>Visible Contamination (Y/N):</p> <p>Iron Staining (Y/N):</p> <p>Oily Sediment/Soil (Y/N):</p> <p>Distressed Vegetation (Y/N):</p> </td> <td style="width: 50%; border: none;"> <p>Sheen Present on Water (Y/N):</p> <p>Is the Boom Containing the Sheen? (Y/N)</p> <p>Pooled Product (Y/N):</p> <p>If yes, was product removed with sorbent pads?</p> </td> </tr> </table>		<p>Visible Contamination (Y/N):</p> <p>Iron Staining (Y/N):</p> <p>Oily Sediment/Soil (Y/N):</p> <p>Distressed Vegetation (Y/N):</p>	<p>Sheen Present on Water (Y/N):</p> <p>Is the Boom Containing the Sheen? (Y/N)</p> <p>Pooled Product (Y/N):</p> <p>If yes, was product removed with sorbent pads?</p>
<p>Visible Contamination (Y/N):</p> <p>Iron Staining (Y/N):</p> <p>Oily Sediment/Soil (Y/N):</p> <p>Distressed Vegetation (Y/N):</p>	<p>Sheen Present on Water (Y/N):</p> <p>Is the Boom Containing the Sheen? (Y/N)</p> <p>Pooled Product (Y/N):</p> <p>If yes, was product removed with sorbent pads?</p>		
<p><b>Location of Visible Contamination:</b></p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div>			
<b>Inspector:</b> JOHN HIGGINS	<b>Signature:</b> <i>John Higgins</i>		



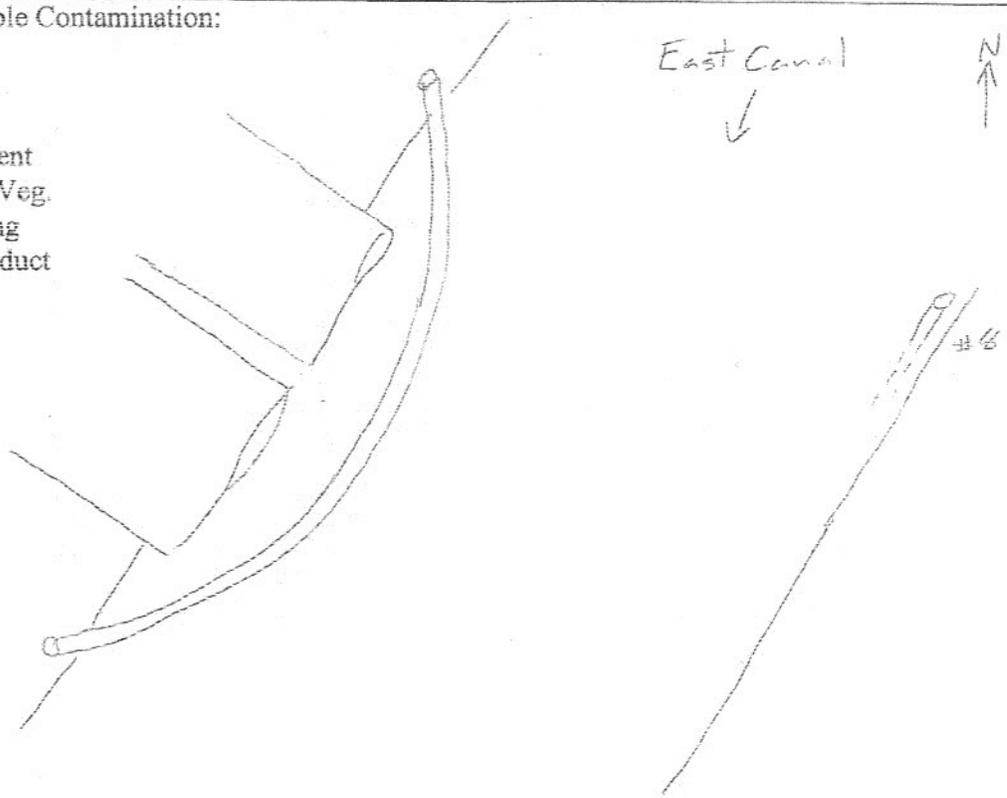
## Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 1155 - 12/7/13
<b>Description of Boom Before Maintenance:</b> (1) BOOM SECTION MISSING - VANDALS? <b>UNSATISFACTORY</b>	<b>Photograph (s) Time/Date Stamp:</b>  1155 - 12/7/13
<b>Boom Repaired (Y/N):</b> Description: (1) MIDDLE BOOM SECTION MISSING, POSSIBLE DELIBERATE TAMPERING DUE TO (4) CLIPS HAVING TO BE DISCONNECTED.	<b>Boom Replaced (Y/N) / Number of Sections: (1)</b> Description: INSTALLED (1) NEW AND PUT BACK INTO POSITION.
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> Iron Staining (Y (N)) Oily Sediment/Soil (Y (N)) Distressed Vegetation (Y (N))	<b>Sheen Present on Water (Y/N):</b> Is the Boom Containing the Sheen? (Y (N)) Pooled Product (Y (N)) If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;"> <p>SEE ABOVE</p> <p>East Canal</p> <p>↓</p> </div> <div style="text-align: right; margin-top: 20px;"> <p>#9/12</p> <p>N ↑</p> </div>
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>

## Boom Inspection Form

Task Order 77

Boom Location: 2	Time/Date: 1247 / 1-10-2014
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1247 / 1-10-2014
Boom Repaired (Y/N) <input checked="" type="radio"/> N Description:	Boom Replaced (Y/N) <input checked="" type="radio"/> N Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y/N) <input checked="" type="radio"/> N          Iron Staining (Y/N) <input checked="" type="radio"/> N          Oily Sediment/Soil (Y/N) <input checked="" type="radio"/> N          Distressed Vegetation (Y/N) <input checked="" type="radio"/> N</p> <p>Sheen Present on Water (Y/N) <input checked="" type="radio"/> N          Is the Boom Containing the Sheen? (Y/N)          Pooled Product (Y/N) <input checked="" type="radio"/> N          If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><b>Legend</b>          /// Sheen          \\\ Oily Sediment          xxx Distressed Veg.          RRR Iron Staining          ● Pooled Product</p> 	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



## Boom Inspection Form

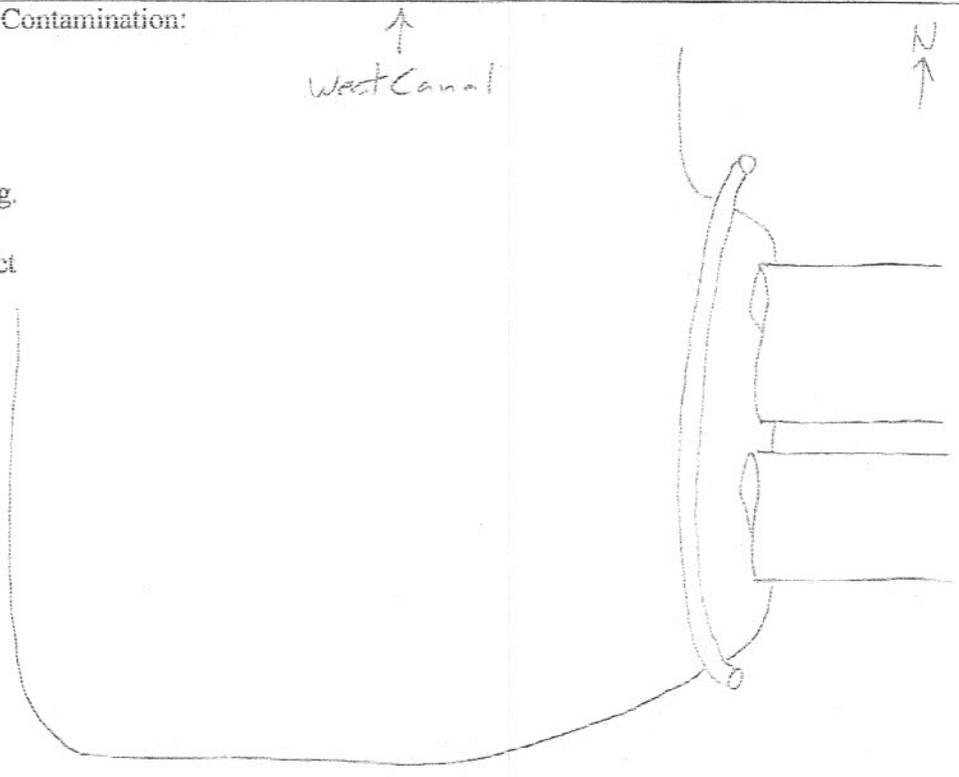
Task Order 77

<b>Boom Location: 3</b>	<b>Time/Date:</b> 1245 / 1-10-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1245 / 1-10-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGASTONE	<b>Signature:</b> <i>John Higastone</i>



## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 4	<b>Time/Date:</b> 1251 / 1-10-14
<b>Description of Boom Before Maintenance:</b>  <div style="text-align: center; font-size: 1.2em; font-weight: bold;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b>  <div style="text-align: center; font-size: 1.2em; font-weight: bold;">1251 / 1-10-14</div>
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;">           ↑            West Canal         </div> <div style="text-align: right; margin-top: 20px;">           N            ↑         </div> 
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> John Highstone



# Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1254 / 1-10-14								
Description of Boom Before Maintenance:  SATISFACTORY	Photograph (s) Time/Date Stamp:  1254 / 1-10-14								
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:								
<p><b>Visual Observations</b></p> <table border="0"> <tr> <td>Visible Contamination (Y <input checked="" type="radio"/> N):</td> <td>Sheen Present on Water (Y <input checked="" type="radio"/> N):</td> </tr> <tr> <td>Iron Staining (Y <input checked="" type="radio"/> N):</td> <td>Is the Boom Containing the Sheen? (Y / N)</td> </tr> <tr> <td>Oily Sediment/Soil (Y <input checked="" type="radio"/> N):</td> <td>Pooled Product (Y <input checked="" type="radio"/> N)</td> </tr> <tr> <td>Distressed Vegetation (Y <input checked="" type="radio"/> N):</td> <td>If yes, was product removed with sorbent pads?</td> </tr> </table>		Visible Contamination (Y <input checked="" type="radio"/> N):	Sheen Present on Water (Y <input checked="" type="radio"/> N):	Iron Staining (Y <input checked="" type="radio"/> N):	Is the Boom Containing the Sheen? (Y / N)	Oily Sediment/Soil (Y <input checked="" type="radio"/> N):	Pooled Product (Y <input checked="" type="radio"/> N)	Distressed Vegetation (Y <input checked="" type="radio"/> N):	If yes, was product removed with sorbent pads?
Visible Contamination (Y <input checked="" type="radio"/> N):	Sheen Present on Water (Y <input checked="" type="radio"/> N):								
Iron Staining (Y <input checked="" type="radio"/> N):	Is the Boom Containing the Sheen? (Y / N)								
Oily Sediment/Soil (Y <input checked="" type="radio"/> N):	Pooled Product (Y <input checked="" type="radio"/> N)								
Distressed Vegetation (Y <input checked="" type="radio"/> N):	If yes, was product removed with sorbent pads?								
<p>Location of Visible Contamination:</p> <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>//// Sheen</li> <li>\\\\\\ Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>● Pooled Product</li> </ul>									
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>								



# Boom Inspection Form

Task Order 77

Boom Location: <b>8</b>	Time/Date: <b>1246 / 1-10-14</b>
Description of Boom Before Maintenance:  <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp:  <b>1246 / 1-10-14</b>
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y <input checked="" type="radio"/> N):</p> <p>Iron Staining (Y <input checked="" type="radio"/> N):</p> <p>Oily Sediment/Soil (Y <input checked="" type="radio"/> N):</p> <p>Distressed Vegetation (Y <input checked="" type="radio"/> N):</p> <p>Sheen Present on Water (Y <input checked="" type="radio"/> N):</p> <p>Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N)</p> <p>Pooled Product (Y <input checked="" type="radio"/> N):</p> <p>If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> <p>The diagram shows a long, narrow boom structure. Along its length, there are several 'R' symbols, '//' symbols, and 'x' symbols. An arrow labeled 'East Canal' points to the top of the boom. At the bottom left, there is a symbol labeled '#3'. At the top right, there is an arrow pointing upwards.</p> </div> </div>	
Inspector: <b>JOHN MICHSTONE</b>	Signature: <i>John Michstone</i>



## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 9/12	<b>Time/Date:</b> 1241 / 1-10-14
<b>Description of Boom Before Maintenance:</b>  <div style="font-size: 1.2em; font-weight: bold; text-align: center;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b>  <div style="font-size: 1.2em; font-weight: bold; text-align: center;">1241 / 1-10-14</div>
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>



# Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 10	<b>Time/Date:</b> 1253 / 1-10-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1253 / 1-10-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) <i>gh</i> Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N) Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N): (N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product  	
<b>Inspector:</b>	<b>Signature:</b>



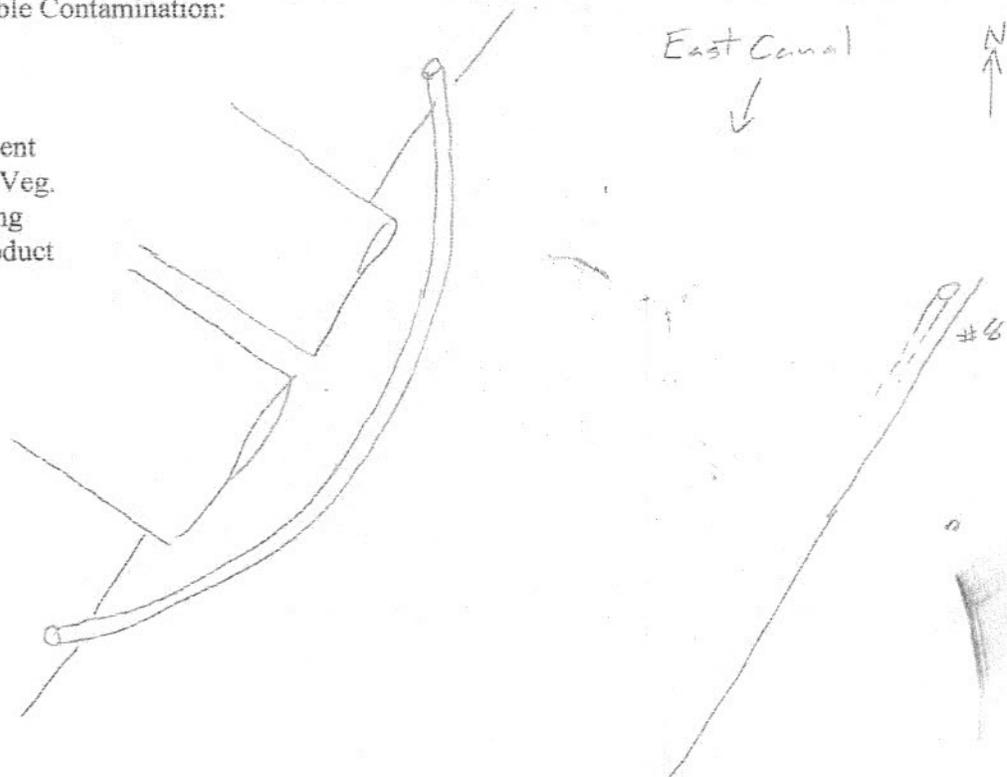
## Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 12 <sup>39</sup> /1-10-14
<b>Description of Boom Before Maintenance:</b>  <div style="font-size: 1.5em; font-weight: bold; text-align: center;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b>  <div style="font-size: 1.5em; font-weight: bold; text-align: center;">12<sup>39</sup>/1-10-14</div>
<b>Boom Repaired (Y <input checked="" type="radio"/> N <input type="radio"/>):</b> Description:	<b>Boom Replaced (Y <input type="radio"/> N <input checked="" type="radio"/>):</b> / Number of Sections: Description:
<b>Visual Observations</b>	
Visible Contamination (Y <input checked="" type="radio"/> N <input type="radio"/> ) Iron Staining (Y <input type="radio"/> N <input checked="" type="radio"/> Oily Sediment/Soil (Y <input type="radio"/> N <input checked="" type="radio"/> Distressed Vegetation (Y <input type="radio"/> N <input checked="" type="radio"/>	Sheen Present on Water (Y <input type="radio"/> N <input checked="" type="radio"/> Is the Boom Containing the Sheen? (Y <input type="radio"/> N <input checked="" type="radio"/> Pooled Product (Y <input type="radio"/> N <input checked="" type="radio"/> If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;">           East Canal            ↓         </div>
<b>Inspector:</b> JOHN HIGBSTONE	<b>Signature:</b> <i>John Highbstone</i>

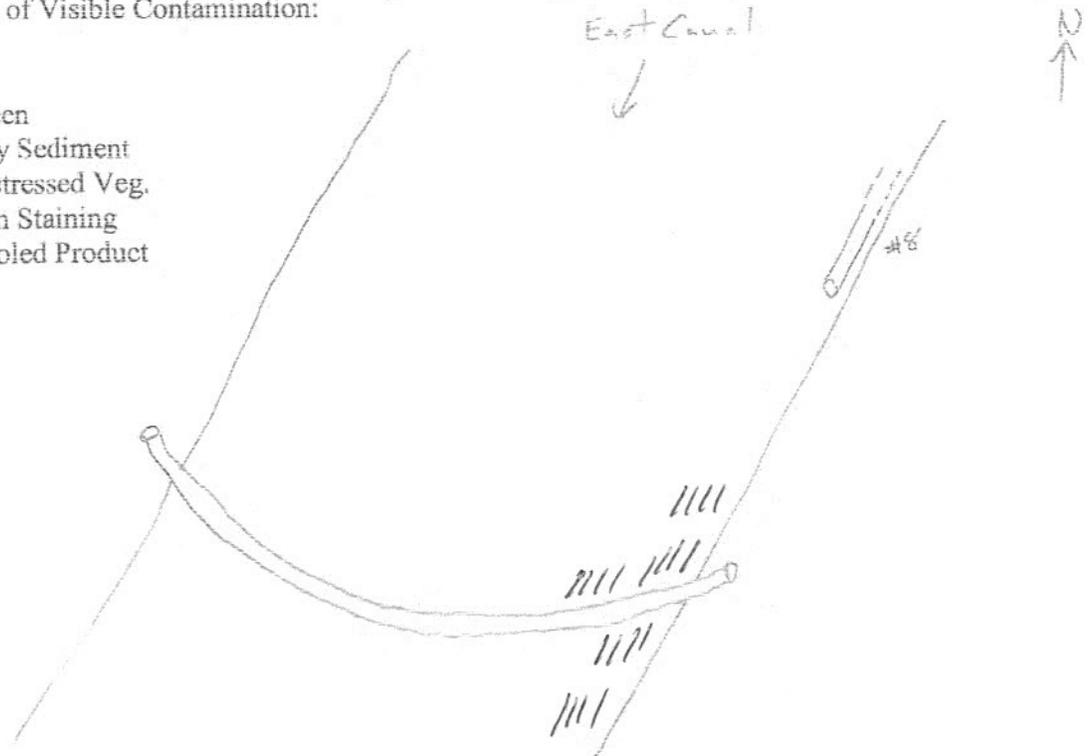
## Boom Inspection Form

Task Order 77

<b>Boom Location: 2</b>	Time/Date: 1340 / 2-7-14
Description of Boom Before Maintenance: <div style="font-size: 1.2em; font-family: cursive;">SATISFACTORY</div>	Photograph (s) Time/Date Stamp: <div style="font-size: 1.2em; font-family: cursive;">1340 / 2-7-14</div>
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N): Iron Staining (Y / N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N): Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y <input checked="" type="radio"/> N) If yes, was product removed with sorbent pads?	
Location of Visible Contamination:	
<u>Legend</u> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
Inspector: <div style="font-family: cursive; font-size: 1.2em;">JOHN HIGHSTONE</div>	Signature: <div style="font-family: cursive; font-size: 1.2em;">John Highstone</div>

## Boom Inspection Form

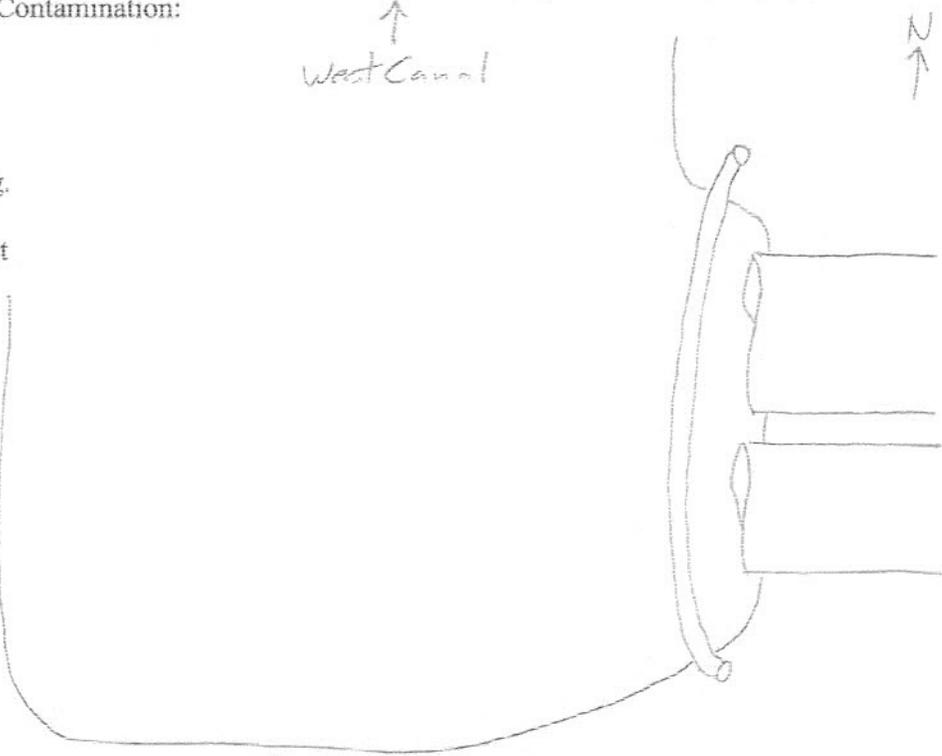
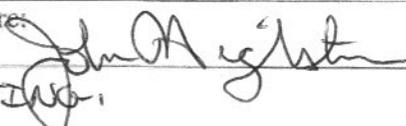
Task Order 77

<b>Boom Location:</b> 3	<b>Time/Date:</b> 1338 / 2-7-14
<b>Description of Boom Before Maintenance:</b> <div style="font-size: 1.5em; font-weight: bold; text-align: center;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b> <div style="font-size: 1.5em; text-align: center;">1338 / 2-7-14</div>
<b>Boom Repaired (Y/N)</b> (Y) (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (Y) (N) <b>Description:</b>
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> (Y) (N): <b>Iron Staining (Y/N):</b> (Y) (N) <b>Oily Sediment/Soil (Y/N):</b> (Y) (N) <b>Distressed Vegetation (Y/N):</b> (Y) (N)	<b>Sheen Present on Water (Y/N):</b> (Y) (N): <b>Is the Boom Containing the Sheen? (Y/N):</b> (Y) (N) <b>Pooled Product (Y/N):</b> (Y) (N) <b>If yes, was product removed with sorbent pads?</b>
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;">East Canal</div> 
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>

\* SOME SHEEN ESCAPING PAST BOOM DUE TO WINDS AND HIGH WATER LEVELS.

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 4	<b>Time/Date:</b> 1346 / 2-7-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1346 / 2-7-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 55%; text-align: center;"> <p>↑ West Canal</p>  </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 

\* (1) DIKE PUMP ON AND OPERATING.



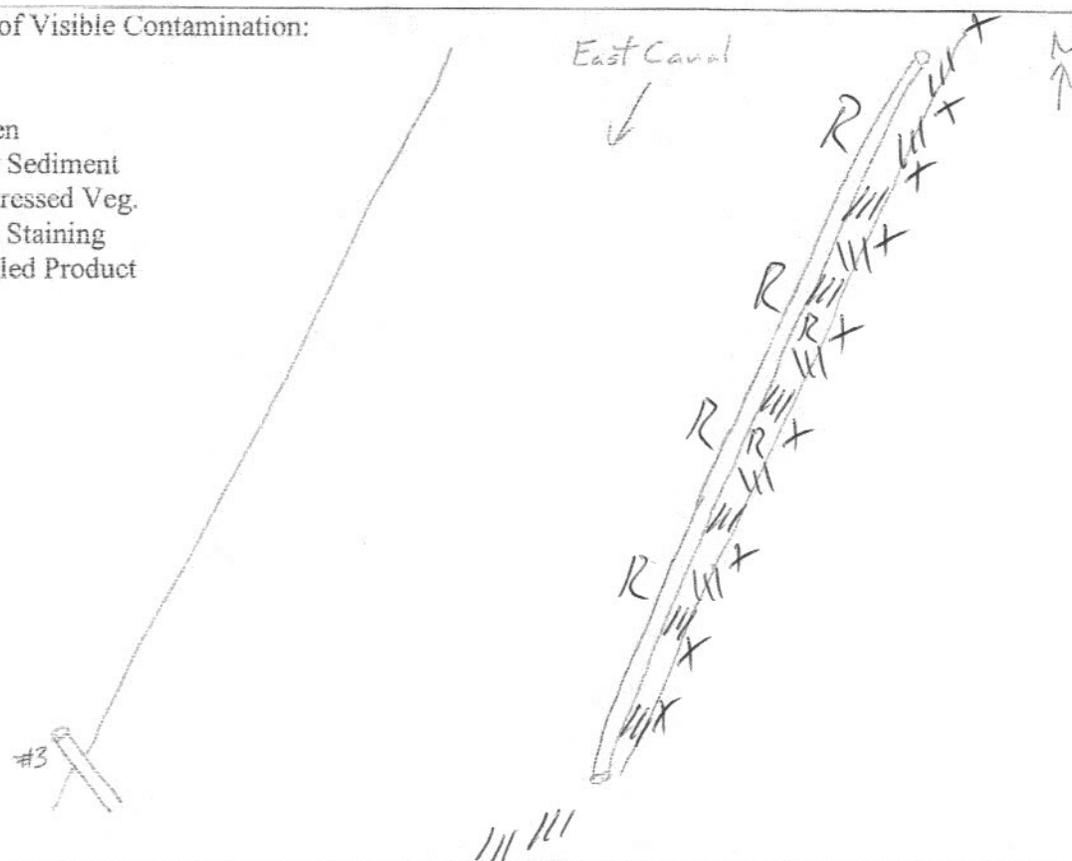
# Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1350 / 2-7-14
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 1350 / 2-7-14
Boom Repaired (Y/N) <input checked="" type="radio"/> N Description:	Boom Replaced (Y/N) <input checked="" type="radio"/> N / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y/N) <input checked="" type="radio"/> N: Iron Staining (Y/N) <input checked="" type="radio"/> N: Oily Sediment/Soil (Y/N) <input checked="" type="radio"/> N: Distressed Vegetation (Y/N) <input checked="" type="radio"/> N: Sheen Present on Water (Y/N) <input checked="" type="radio"/> N: Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) <input checked="" type="radio"/> N: If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>

## Boom Inspection Form

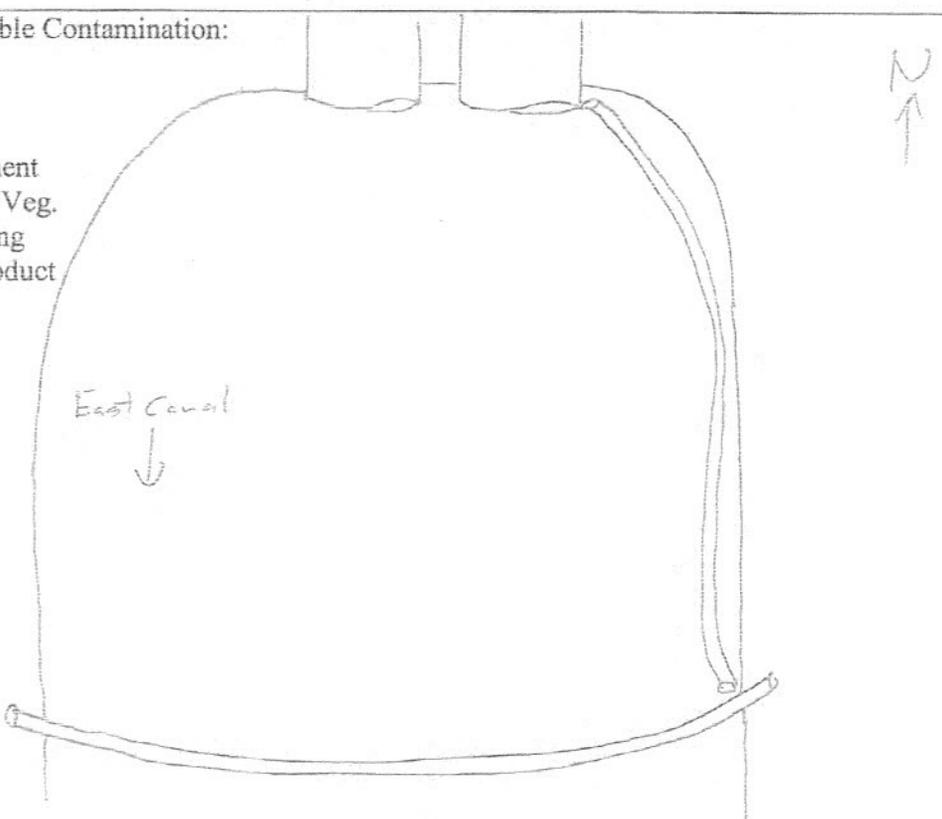
Task Order 77

<b>Boom Location: 8</b>	<b>Time/Date:</b> 1339/2-7-14
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1339/2-7-14
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N):</b> (N) Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 65%;">  </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>

\* SHEEN ESCAPING BOOM DUE TO HIGH WATER LEVELS.

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 9/12	<b>Time/Date:</b> 1333/2-7-14
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1333/2-7-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (N) Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2; text-align: center;">  <p style="margin-left: 100px;">East Canal ↓</p> <p style="margin-right: 100px;">N ↑</p> </div> </div>	
<b>Inspector:</b> JOHN HIGSTONE	<b>Signature:</b> <i>John Hight</i>

## Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	<b>Time/Date:</b> 1348/2-7-14
<b>Description of Boom Before Maintenance:</b>  <div style="font-size: 1.5em; font-weight: bold; text-align: center;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b>  <div style="font-size: 1.5em; text-align: center;">1348/2-7-14</div>
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> (Y) <b>Iron Staining (Y/N):</b> (N) <b>Oily Sediment/Soil (Y/N):</b> (Y) <b>Distressed Vegetation (Y/N):</b> (Y)	<b>Sheen Present on Water (Y/N):</b> (Y) <b>Is the Boom Containing the Sheen? (Y/N):</b> (Y) <b>Pooled Product (Y/N):</b> (N) <b>If yes, was product removed with sorbent pads?</b>
<b>Location of Visible Contamination:</b>	
<div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;">  </div> </div>	
<b>Inspector:</b> JOHN HIGASTONE	<b>Signature:</b> <i>John Higastone</i>



## Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 1331/2-7-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1331/2-7-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N)/ Number of Sections:</b> (N) <b>Description:</b>

**Visual Observations**

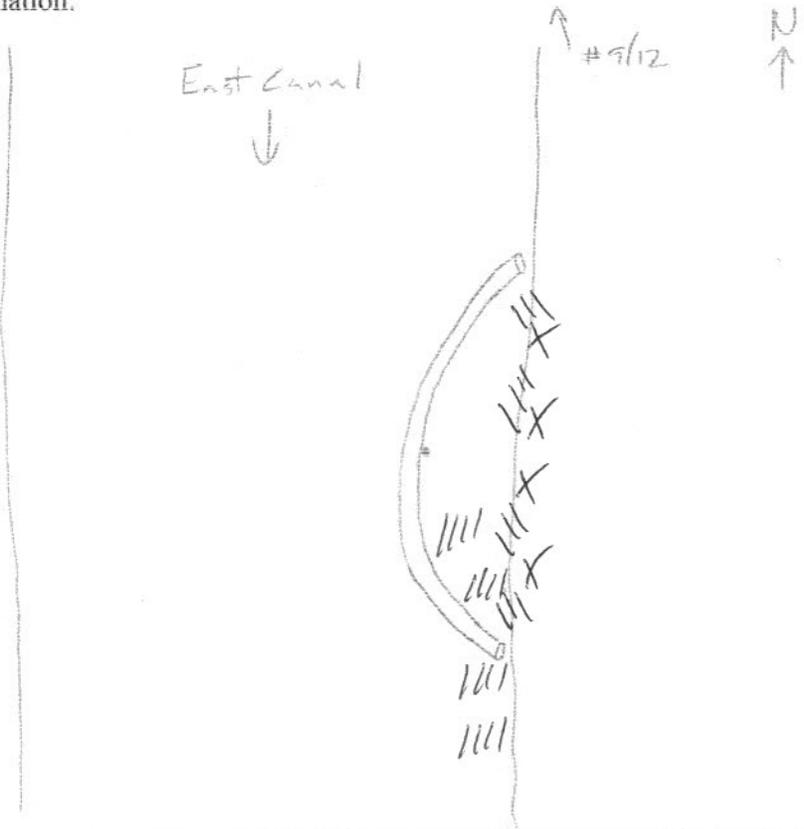
Visible Contamination (Y/N):  
 Iron Staining (Y/N):  
 Oily Sediment/Soil (Y/N):  
 Distressed Vegetation (Y/N):

Sheen Present on Water (Y/N):  
 Is the Boom Containing the Sheen? (Y/N)  
 Pooled Product (Y/N):  
 If yes, was product removed with sorbent pads?

**Location of Visible Contamination:**

Legend

- //// Sheen
- \\\\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- Pooled Product



<b>Inspector:</b> JOHN HIGASTONE	<b>Signature:</b> <i>John Higastone</i>
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\* SHEEN ESCAPING BOOM DUE TO WIND AND HIGH WATER LEVELS



# Boom Inspection Form

Task Order 77

Boom Location: 2	Time/Date: 1536/3-7-14
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1536/3-7-14
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N) Iron Staining (Y <input checked="" type="radio"/> N) Oily Sediment/Soil (Y <input checked="" type="radio"/> N) Distressed Vegetation (Y <input checked="" type="radio"/> N)	
Sheen Present on Water (Y <input checked="" type="radio"/> N) Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N) Pooled Product (Y <input checked="" type="radio"/> N) If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>• Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



# Boom Inspection Form

Task Order 77

Boom Location: 3	Time/Date: 1535 / 3-7-14
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1535 / 3-7-14
Boom Repaired (Y/N) <input checked="" type="radio"/> N Description:	Boom Replaced (Y/N) <input checked="" type="radio"/> N Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination <input checked="" type="radio"/> Y <input checked="" type="radio"/> N: Iron Staining (Y/N) <input checked="" type="radio"/> N Oily Sediment/Soil (Y/N) <input checked="" type="radio"/> N Distressed Vegetation (Y/N) <input checked="" type="radio"/> N Sheen Present on Water <input checked="" type="radio"/> Y <input checked="" type="radio"/> N: Is the Boom Containing the Sheen? (Y/N) <input checked="" type="radio"/> N Pooled Product <input checked="" type="radio"/> Y <input checked="" type="radio"/> N: If yes, was product removed with sorbent pads? <b>NO - WILL BE REMOVED DURING APRIL EVENT</b>	
Location of Visible Contamination: 	
Inspector: <b>John Highstone</b>	Signature: 



# Boom Inspection Form

Task Order 77

Boom Location: 4	Time/Date: 1542/3-7-14
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1542/3-7-14
Boom Repaired (Y/N) <input checked="" type="radio"/> N Description:	Boom Replaced (Y/N) <input checked="" type="radio"/> N / Number of Sections: Description:

### Visual Observations

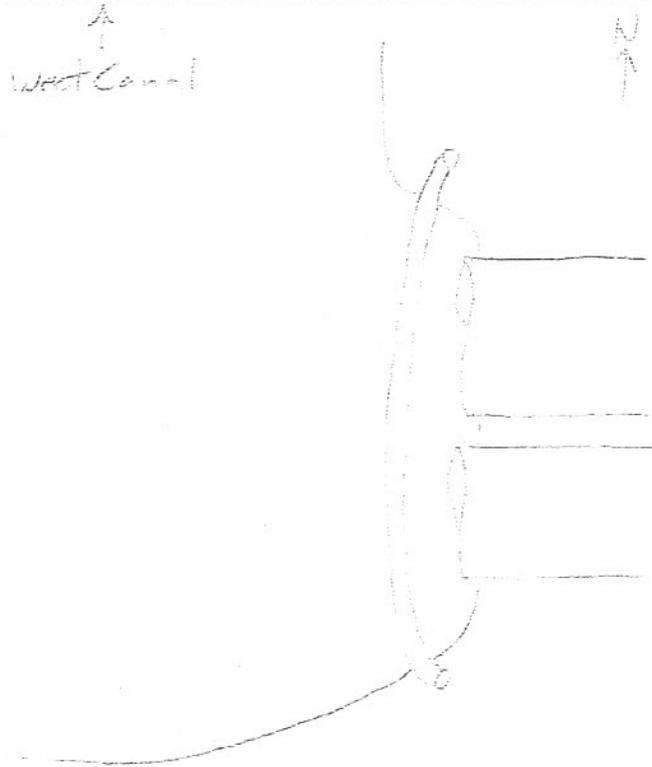
Visible Contamination (Y/N)  N  
 Iron Staining (Y/N)  N  
 Oily Sediment/Soil (Y/N)  N  
 Distressed Vegetation (Y/N)  N

Sheen Present on Water (Y/N)  N  
 Is the Boom Containing the Sheen? (Y/N)  
 Pooled Product (Y/N)  N  
 If yes, was product removed with sorbent pads?

Location of Visible Contamination:

### Legend

- /// Sheen
- \\ \\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- Pooled Product



Inspector: <b>JOHN HIGHTSTONE</b>	Signature: <i>John Hightstone</i>
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(1) DIKE PUMP ON AND OPERATING AT THIS TIME.



# Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1549 / 3-7-14
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1549 / 3-7-14
Boom Repaired (Y <input checked="" type="radio"/> N) Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N) Iron Staining (Y <input checked="" type="radio"/> N) Oily Sediment/Soil (Y <input checked="" type="radio"/> N) Distressed Vegetation (Y <input checked="" type="radio"/> N) Sheen Present on Water (Y <input checked="" type="radio"/> N) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y <input checked="" type="radio"/> N) If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <b>Legend</b> //// Sheen \\ \\ Oily Sediment xxx Distressed Veg. RRR Iron Staining = Pooled Product	
<p>South Swaps Creek</p>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



# Boom Inspection Form

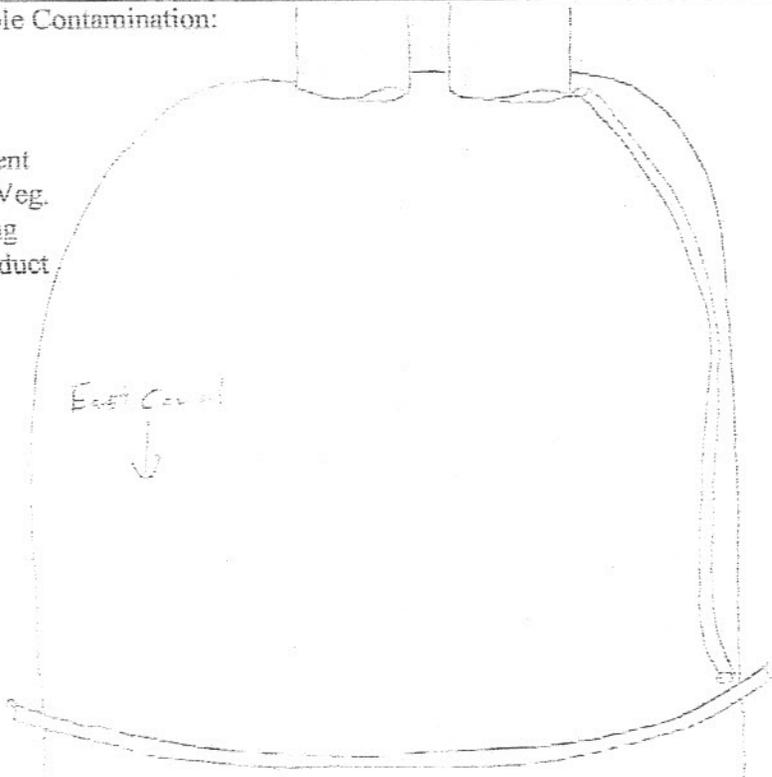
Task Order 77

Boom Location: 3	Time/Date: 1536 / 3-7-14
Description of Boom Before Maintenance:  SATISFACTORY	Photograph (s) Time/Date Stamp:  1536 / 3-7-14
Boom Repaired (Y (N): Description:	Boom Replaced (Y (N)) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y (N):</p> <p>Iron Staining (Y (N):</p> <p>Oily Sediment/Soil (Y (N):</p> <p>Distressed Vegetation (Y (N):</p> <p>Sheen Present on Water (Y (N):</p> <p>Is the Boom Containing the Sheen? (Y (N))</p> <p>Pooled Product (Y (N):</p> <p>If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>• Pooled Product</p>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



### Boom Inspection Form

Task Order 77

Boom Location: 9/12	Time/Date: 1530/3-7-14
Description of Boom Before Maintenance: SATISFACTORY. (2) CLIP UNDONE IN CENTER. WILL BE REPAIRED OR REPLACED IN APRIL EVENT	Photograph (s) Time/Date Stamp: 1530/3-7-14
Boom Repaired (Y (N)) Description:	Boom Replaced (Y (N)) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y (N))</p> <p>Iron Staining (Y (N))</p> <p>Oily Sediment/Soil (Y (N))</p> <p>Distressed Vegetation (Y (N))</p> <p>Sheen Present on Water (Y (N))</p> <p>Is the Boom Containing the Sheen? (Y / N)</p> <p>Pooled Product (Y (N))</p> <p>If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p>Legend</p> <p>/// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> 	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



# Boom Inspection Form

Task Order 77

Boom Location: 10	Time/Date: 1544   3-7-14
Description of Boom Before Maintenance:	Photograph (s) Time/Date Stamp: 1544   3-7-14
SATISFACTORY Boom Repaired (Y (N)) Description:	Boom Replaced (Y (N)) / Number of Sections: Description:

### Visual Observations

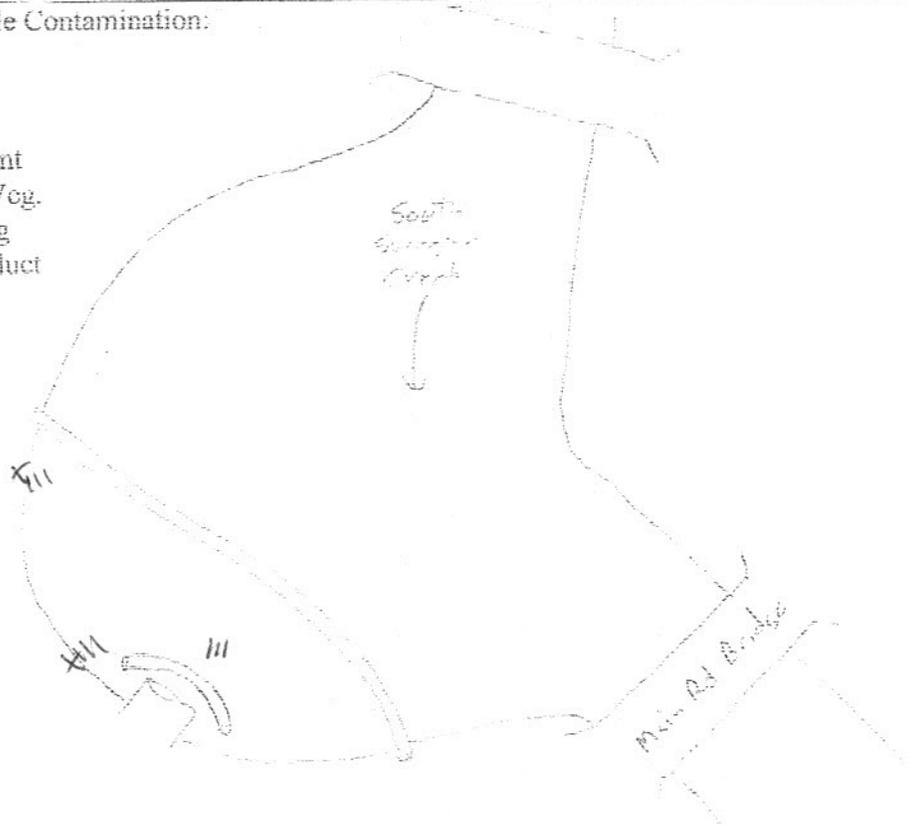
Visible Contamination (Y (N)):  
 Iron Staining (Y (N))  
 Oily Sediment/Soil (Y (N))  
 Distressed Vegetation (Y (N)):

Sheen Present on Water (Y (N)):  
 Is the Boom Containing the Sheen? (Y (N))  
 Pooled Product (Y (N))  
 If yes, was product removed with sorbent pads?

Location of Visible Contamination:

#### Legend

- //// Sheen
- \\ \\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- e Pooled Product



Inspector: JOHN HIGHESTONE

Signature: *John Highestone*



## Boom Inspection Form

Task Order 77

Boom Location: 11	Time/Date: 1529 / 3-7-14		
Description of Boom Before Maintenance:  SATISFACTORY	Photograph (s) Time/Date Stamp:  1529 / 3-7-14		
Boom Repaired (Y <input checked="" type="radio"/> N <input type="radio"/> Description: CENTER STAKE TO BE REPAIRED IN APRIL EVENT	Boom Replaced (Y <input type="radio"/> N <input checked="" type="radio"/> / Number of Sections: Description:		
<p><b>Visual Observations</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">                 Visible Contamination (Y <input checked="" type="radio"/> N <input type="radio"/>                  Iron Staining (Y <input type="radio"/> N <input checked="" type="radio"/>                  Oily Sediment/Soil (Y <input checked="" type="radio"/> N <input type="radio"/>                  Distressed Vegetation (Y <input checked="" type="radio"/> N <input type="radio"/> </td> <td style="width: 50%; border: none;">                 Sheen Present on Water (Y <input checked="" type="radio"/> N <input type="radio"/>                  Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N <input type="radio"/>                  Pooled Product (Y <input type="radio"/> N <input checked="" type="radio"/>                  If yes, was product removed with sorbent pads?             </td> </tr> </table>		Visible Contamination (Y <input checked="" type="radio"/> N <input type="radio"/> Iron Staining (Y <input type="radio"/> N <input checked="" type="radio"/> Oily Sediment/Soil (Y <input checked="" type="radio"/> N <input type="radio"/> Distressed Vegetation (Y <input checked="" type="radio"/> N <input type="radio"/>	Sheen Present on Water (Y <input checked="" type="radio"/> N <input type="radio"/> Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N <input type="radio"/> Pooled Product (Y <input type="radio"/> N <input checked="" type="radio"/> If yes, was product removed with sorbent pads?
Visible Contamination (Y <input checked="" type="radio"/> N <input type="radio"/> Iron Staining (Y <input type="radio"/> N <input checked="" type="radio"/> Oily Sediment/Soil (Y <input checked="" type="radio"/> N <input type="radio"/> Distressed Vegetation (Y <input checked="" type="radio"/> N <input type="radio"/>	Sheen Present on Water (Y <input checked="" type="radio"/> N <input type="radio"/> Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N <input type="radio"/> Pooled Product (Y <input type="radio"/> N <input checked="" type="radio"/> If yes, was product removed with sorbent pads?		
<p>Location of Visible Contamination:</p> <div style="display: flex;"> <div style="flex: 1;"> <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>//// Sheen</li> <li>\\\\ Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>● Pooled Product</li> </ul> </div> <div style="flex: 2; text-align: center;"> </div> </div>			
Inspector: JOHN HIGHSTONE	Signature: 		



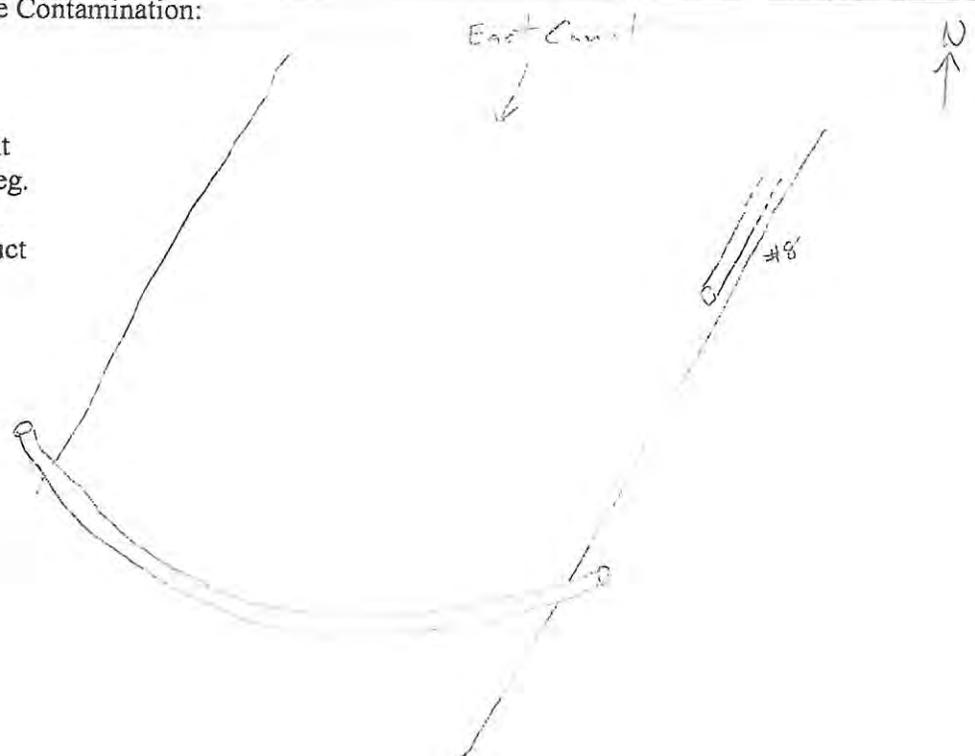
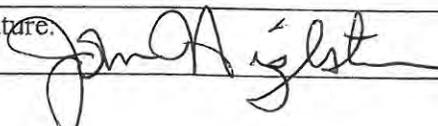
# Boom Inspection Form

Task Order 77

<b>Boom Location: 2</b>	Time/Date: 1022/4-9-14
Description of Boom Before Maintenance: UNSATISFACTORY	Photograph (s) Time/Date Stamp: 1022/4-9-14
Boom Repaired (Y) (N): Description: INSTALLED NEW SECTIONS	Boom Replaced (Y) (N) / Number of Sections: 3 Description: REPLACED ALL SECTIONS FOR YEARLY MAINTENANCE ANNUAL
<b>Visual Observations</b> Visible Contamination (Y) (N) <input checked="" type="radio"/> N Iron Staining (Y) (N) <input checked="" type="radio"/> N Oily Sediment/Soil (Y) (N) <input checked="" type="radio"/> N Distressed Vegetation (Y) (N) <input checked="" type="radio"/> N Sheen Present on Water (Y) (N) <input checked="" type="radio"/> N Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y) (N) <input checked="" type="radio"/> N If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex; justify-content: space-between;"> <div data-bbox="224 945 487 1155"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="422 903 1429 1680"> </div> </div>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>

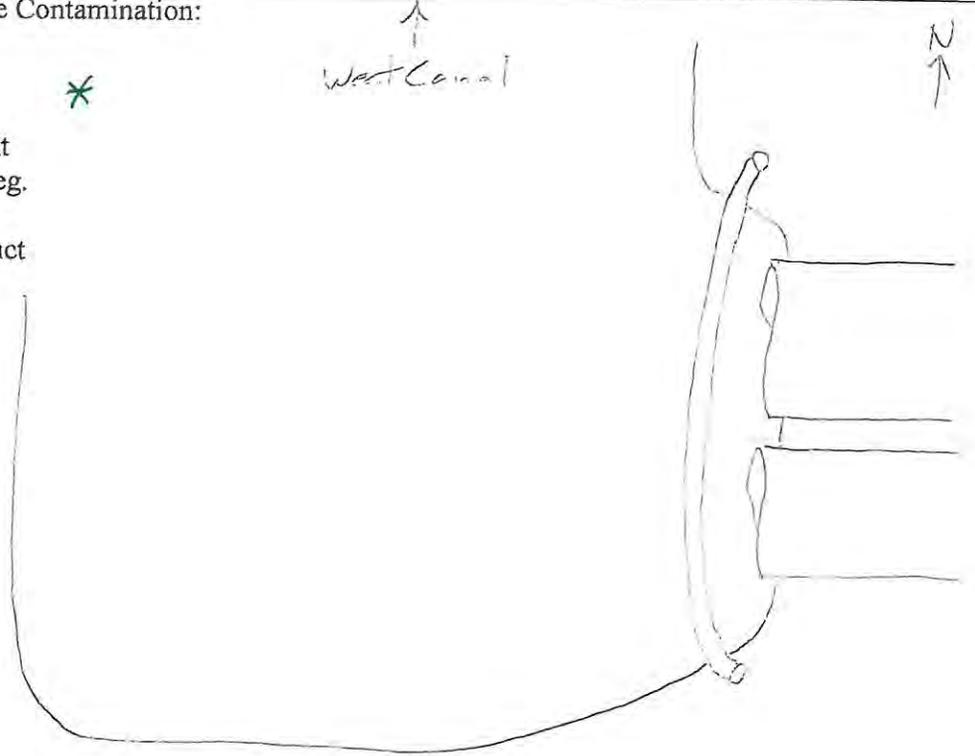
### Boom Inspection Form

Task Order 77

Boom Location: 3	Time/Date: 1021 / 4-9-14
Description of Boom Before Maintenance: UNSATISFACTORY	Photograph (s) Time/Date Stamp: 1021 / 4-9-14
Boom Repaired (Y/N): Description: INSTALLED NEW SECTIONS	Boom Replaced (Y/N) / Number of Sections: 8 Description: REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;">  </div> </div>	
Inspector: JOHN HIGHTSTONE	Signature: 

### Boom Inspection Form

Task Order 77

Boom Location: 4	Time/Date: 10 <sup>33</sup> / 4-9-14
* Description of Boom Before Maintenance: REMOVED (3) SECTIONS PERMANENTLY PER NAVY APPROVAL	Photograph (s) Time/Date Stamp: 10 <sup>33</sup> / 4-9-14
Boom Repaired (Y (N)): Description:	Boom Replaced (Y (N)) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y (N))</p> <p>Iron Staining (Y (N))</p> <p>Oily Sediment/Soil (Y (N))</p> <p>Distressed Vegetation (Y (N))</p> <p>Sheen Present on Water (Y (N))</p> <p>Is the Boom Containing the Sheen? (Y / N)</p> <p>Pooled Product (Y (N))</p> <p>If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p>Legend</p> <ul style="list-style-type: none"> <li>//// Sheen *</li> <li>\\ \\ Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>● Pooled Product</li> </ul> 	
Inspector: JOHN HIGHSTONE	Signature: John Highstone



# Boom Inspection Form

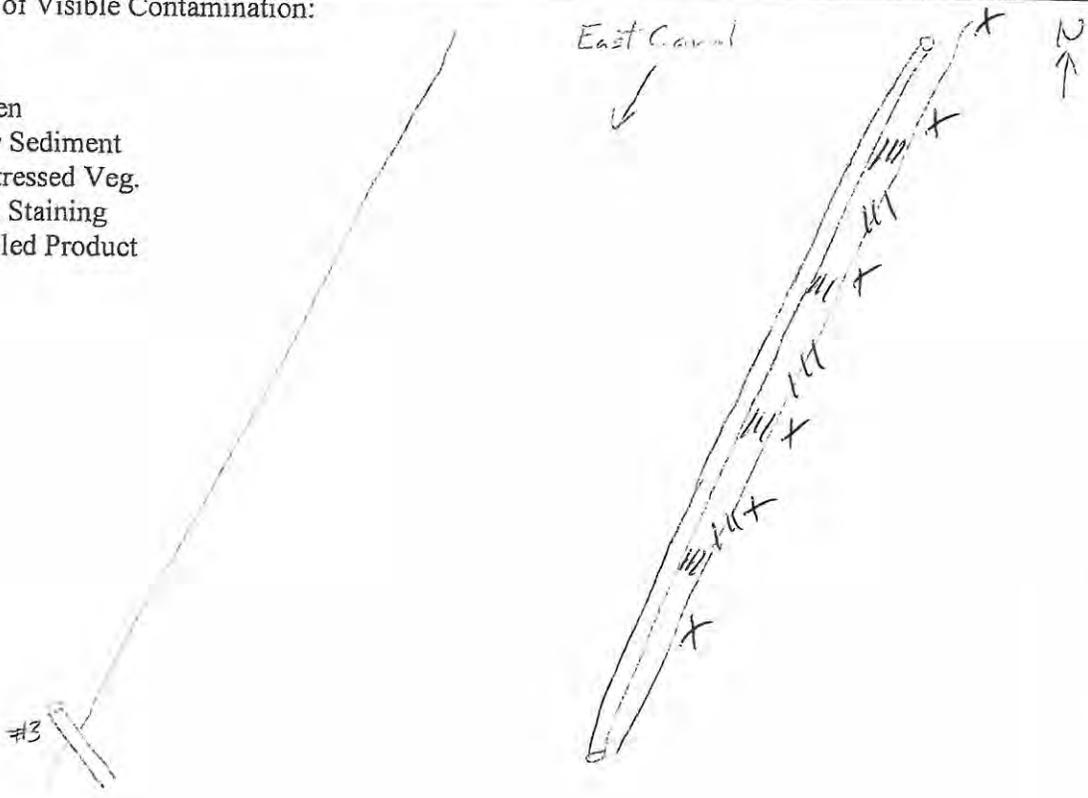
Task Order 77

Boom Location: 6	Time/Date: 1029 / 4-9-14
Description of Boom Before Maintenance: UNSATISFACTORY	Photograph (s) Time/Date Stamp: 1029 / 4-9-14
Boom Repaired (Y) (N): Description: INSTALLED NEW SECTIONS	Boom Replaced (Y) (N) / Number of Sections: 12 Description: REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE
<b>Visual Observations</b> Visible Contamination (Y) (N) <input checked="" type="checkbox"/> (N) Iron Staining (Y) (N) <input checked="" type="checkbox"/> (N) Oily Sediment/Soil (Y) (N) <input checked="" type="checkbox"/> (N) Distressed Vegetation (Y) (N) <input checked="" type="checkbox"/> (N)	
Sheen Present on Water (Y) (N) <input checked="" type="checkbox"/> (N) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y) (N) <input checked="" type="checkbox"/> (N) If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;"> <p>Saint. Swamps Creek</p> </div> </div>	
Inspector: J. HIGHSTONE	Signature: <i>Jan Highstone</i>

9  
4/11/14

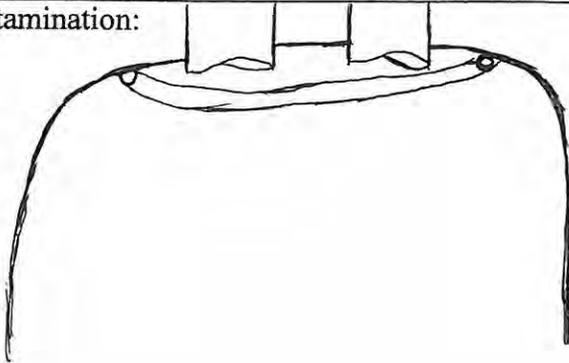
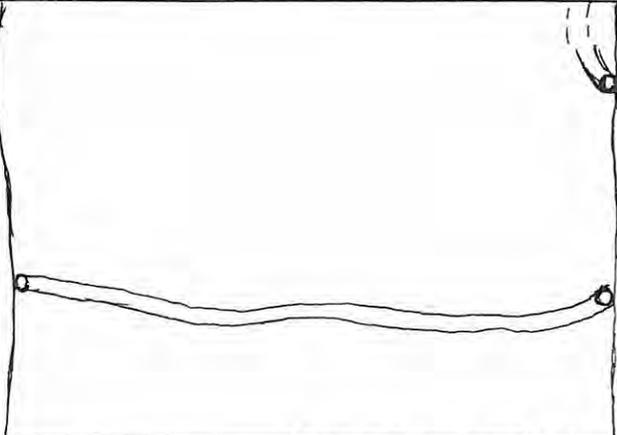
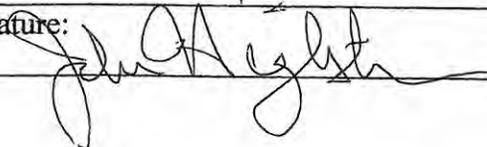
## Boom Inspection Form

Task Order 77

<b>Boom Location: 8</b>	<b>Time/Date:</b> 1021 / 4-9-14
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1021 / 4-9-14
<b>Boom Repaired (Y/N):</b> (Y) <b>Description:</b> INSTALLED NEW SECTIONS	<b>Boom Replaced (Y/N) / Number of Sections:</b> (Y) 12 <b>Description:</b> REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> (Y) <b>Iron Staining (Y/N):</b> (Y) <b>Oily Sediment/Soil (Y/N):</b> (Y) <b>Distressed Vegetation (Y/N):</b> (Y)	<b>Sheen Present on Water (Y/N):</b> (Y) <b>Is the Boom Containing the Sheen? (Y/N)</b> (Y) <b>Pooled Product (Y/N):</b> (N) <b>If yes, was product removed with sorbent pads?</b>
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> J. HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>

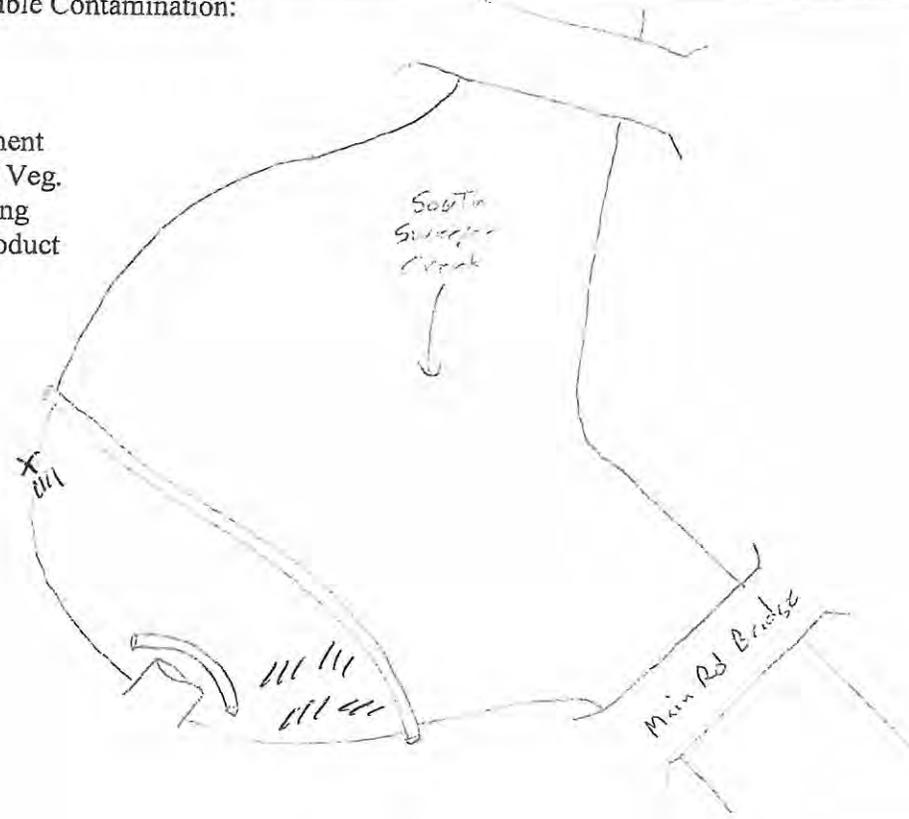
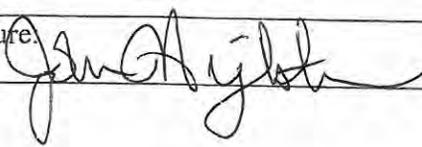
## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 912	<b>Time/Date:</b> 10 <sup>14</sup> 10 <sup>17</sup> / 4-9-14
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 10 <sup>14</sup> /10 <sup>17</sup> / 4-9-14
<b>Boom Repaired (Y/N):</b> Description: MODIFIED LOCATION AND INSTALLED NEW SECTIONS AND RESTAKED	<b>Boom Replaced (Y/N) / Number of Sections:</b> 13 Description: REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE AND MODIFICATION.
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	N ↑
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
	N ↑
<b>Inspector:</b> S. HIGHSTONE	<b>Signature:</b> 

## Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	<b>Time/Date:</b> 1026 / 4-9-14
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1026 / 4-9-14
<b>Boom Repaired (Y/N):</b> (Y) <b>Description:</b> INSTALLED NEW SECTIONS	<b>Boom Replaced (Y/N) / Number of Sections:</b> (Y) / 12 <b>Description:</b> REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> (Y) <b>Iron Staining (Y/N):</b> (N) <b>Oily Sediment/Soil (Y/N):</b> (Y) <b>Distressed Vegetation (Y/N):</b> (Y)	<b>Sheen Present on Water (Y/N):</b> (Y) <b>Is the Boom Containing the Sheen? (Y/N):</b> (Y) <b>Pooled Product (Y/N):</b> (N) <b>If yes, was product removed with sorbent pads?</b>
<b>Location of Visible Contamination:</b>	
<div style="display: flex;"> <div style="flex: 1;"> <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>//// Sheen</li> <li>\\ \\ Oily Sediment</li> <li>xxx Distressed Veg.</li> <li>RRR Iron Staining</li> <li>● Pooled Product</li> </ul> </div> <div style="flex: 2;">  <p style="text-align: center;">Sediment Sweeper Creek</p> <p style="text-align: right;">Main Rd Bridge</p> <p style="text-align: right;">N ↑</p> </div> </div>	
<b>Inspector:</b> J. HIGHSTONE	<b>Signature:</b> 



## Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 10 <sup>14</sup> / 4-9-14
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 10 <sup>14</sup> / 4-9-14
<b>Boom Repaired (Y/N):</b> Description: INSTALLED NEW SECTIONS AND RESTAKED LOCATION	<b>Boom Replaced (Y/N) / Number of Sections:</b> 0 Description: REPLACED ALL SECTIONS FOR ANNUAL MAINTENANCE
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	<b>Sheen Present on Water (Y/N):</b> Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<p style="text-align: center;">East Canal ↓</p> <p style="text-align: right;"># 7/12      N ↑</p>
<b>Inspector:</b> J. HIGHSTONE	<b>Signature:</b> 



# Boom Inspection Form

Task Order 77

<b>Boom Location: 2</b>	<b>Time/Date:</b> 1448   5-7-2014
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1448   5-7-2014
<b>Boom Repaired (Y (N))</b> Description:	<b>Boom Replaced (Y (N)) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y (N)) Iron Staining (Y (N)) Oily Sediment/Soil (Y (N)) Distressed Vegetation (Y (N)) Sheen Present on Water (Y (N)) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y (N)) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div data-bbox="224 961 487 1165"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="435 905 1437 1682"> </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 





## Boom Inspection Form

**Task Order 77**

<b>Boom Location: 6</b>	<b>Time/Date:</b> 1435 / 5-7-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1435 / 5-7-2014
<b>Boom Repaired (Y (N))</b> Description:	<b>Boom Replaced (Y (N)) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y (N)) Iron Staining (Y (N)) Oily Sediment/Soil (Y (N)) Distressed Vegetation (Y (N))	
Sheen Present on Water (Y (N)) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y (N)) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;"> <p>South Swapper Creek</p> </div> </div>	
<b>Inspector:</b> John HIGHSTONE	<b>Signature:</b> John Highstone



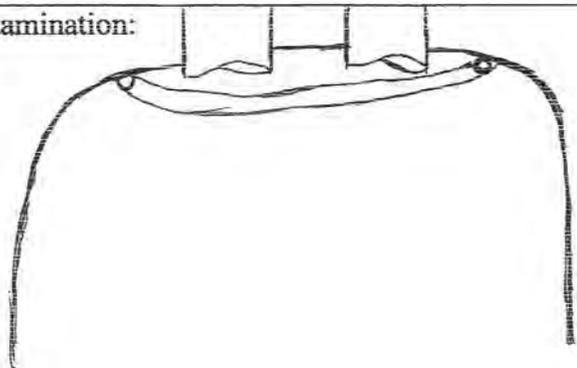
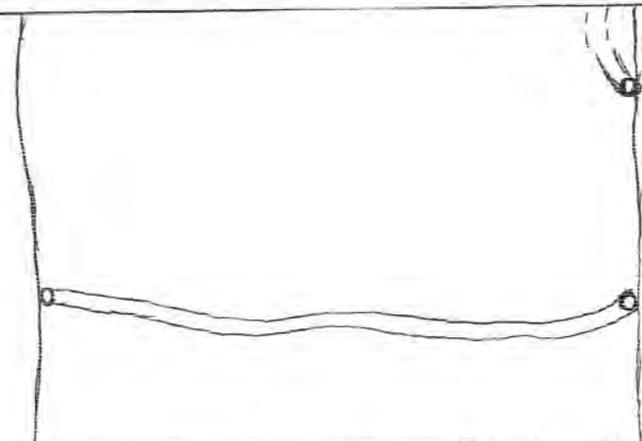
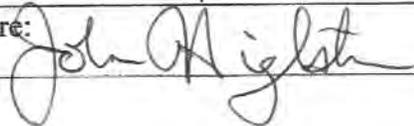
## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 1447 / 5-7-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1447 / 5-7-2014
<b>Boom Repaired (Y (N))</b> Description:	<b>Boom Replaced (Y (N)) / Number of Sections:</b> Description:
<b>Visual Observations</b>	
Visible Contamination (Y (N)):	Sheen Present on Water (Y (N)):
Iron Staining (Y (N)):	Is the Boom Containing the Sheen? (Y (N))
Oily Sediment/Soil (Y (N)):	Pooled Product (Y (N))
Distressed Vegetation (Y (N)):	If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 912	<b>Time/Date:</b> 1438-1441 / 5-7-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1438-1441 / 5-7-2014
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 



## Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	<b>Time/Date:</b> 14 <sup>29</sup> / 5-7-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  14 <sup>29</sup> / 5-7-2014
<b>Boom Repaired (Y <input checked="" type="radio"/> N):</b> Description:	<b>Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N): Iron Staining (Y <input checked="" type="radio"/> N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N): Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N): Pooled Product (Y <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 



## Boom Inspection Form

Task Order 77

<b>Boom Location: 11</b>	<b>Time/Date:</b> 1438 / 5-7-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1438 / 5-7-2014
<b>Boom Repaired (Y/N):</b> (Y) (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (Y) (N) / <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) (N) Iron Staining (Y/N): (Y) (N) Oily Sediment/Soil (Y/N): (Y) (N) Distressed Vegetation (Y/N): (Y) (N)	
Sheen Present on Water (Y/N): (Y) (N) Is the Boom Containing the Sheen? (Y/N): (Y) (N) Pooled Product (Y/N): (Y) (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> John Highstone



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## Boom Inspection Form

Task Order 77

Boom Location: 2	Time/Date: 1133 / 6-4-2014
Description of Boom Before Maintenance: <b>UNSATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1133 / 6-4-2014
Boom Repaired (Y/N): Description: MOVED BACK INTO POSITION OFF SHORELINE	Boom Replaced (Y/N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: JOHN HIGHSTONE	Signature: <i>John Highstone</i>



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## Boom Inspection Form

Task Order 77

<b>Boom Location: 3</b>	<b>Time/Date:</b> 1129 / 6-4-2014
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1129 / 6-4-2014
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
<b>Inspector:</b> JOHN HIGGESTONE	<b>Signature:</b> <i>John Higestone</i>



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## Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1043 / 6-4-2014
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1043 / 6-4-2014
Boom Repaired (Y <input checked="" type="radio"/> N) Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N) Iron Staining (Y <input checked="" type="radio"/> N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N) Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>/// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: JOHN HIGHSIDE	Signature: <i>John Highside</i>



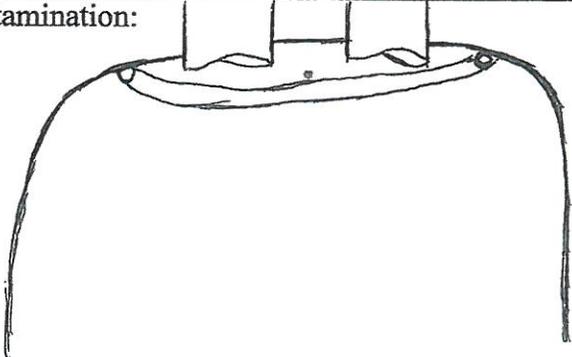
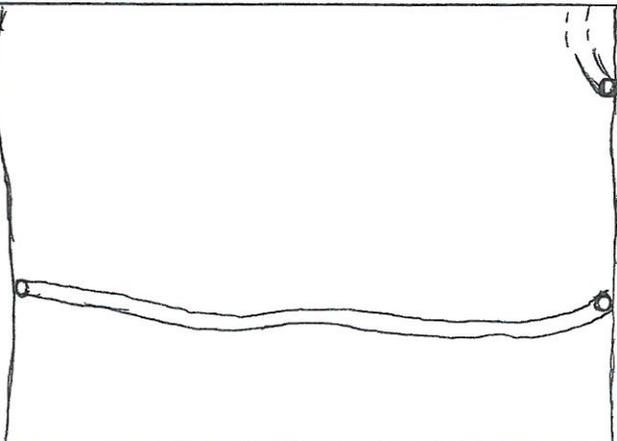
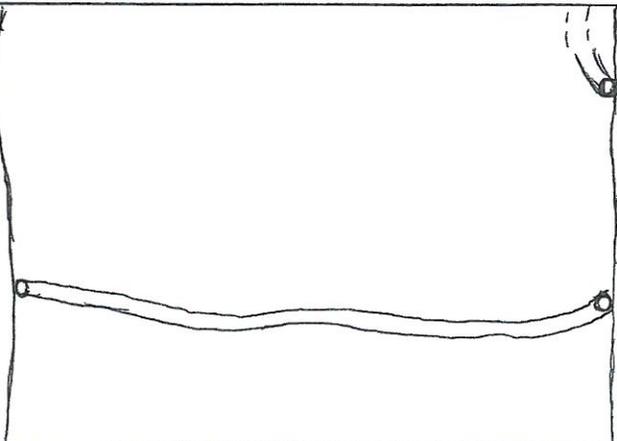
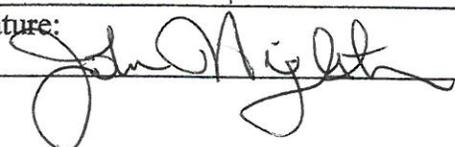
# Boom Inspection Form

Task Order 77

Boom Location: 8	Time/Date: 11/30/6-4-2014
Description of Boom Before Maintenance: <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp: 1130 6-4-2014
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N): Iron Staining (Y <input checked="" type="radio"/> N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N): Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N) Pooled Product (Y <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: JOHN HIGHTSTONE	Signature: John Hightstone

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 912	<b>Time/Date:</b> 1113/1124 / 6-4-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1113/1124 / 6-4-14
<b>Boom Repaired (Y/N):</b> Description: INSTALL STAKE AT NORTH SECTION TO PREVENT CHAFFING ON CULVERTS	<b>Boom Replaced (Y/N)/ Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
	
<b>Inspector:</b> JOHN HIGHTSTONE	<b>Signature:</b> 



## Boom Inspection Form

Task Order 77

Boom Location: 10	Time/Date: 1038/6-4-2014								
Description of Boom Before Maintenance:  <b>SATISFACTORY</b>	Photograph (s) Time/Date Stamp:  1038/6-4-2014								
Boom Repaired (Y <input checked="" type="radio"/> N) Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:								
<p><b>Visual Observations</b></p> <table style="width: 100%;"> <tr> <td style="width: 50%;">Visible Contamination (Y <input checked="" type="radio"/> N):</td> <td style="width: 50%;">Sheen Present on Water (Y <input checked="" type="radio"/> N):</td> </tr> <tr> <td>Iron Staining (Y <input checked="" type="radio"/> N):</td> <td>Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N):</td> </tr> <tr> <td>Oily Sediment/Soil (Y <input checked="" type="radio"/> N):</td> <td>Pooled Product (Y <input checked="" type="radio"/> N):</td> </tr> <tr> <td>Distressed Vegetation (Y <input checked="" type="radio"/> N):</td> <td>If yes, was product removed with sorbent pads?</td> </tr> </table>		Visible Contamination (Y <input checked="" type="radio"/> N):	Sheen Present on Water (Y <input checked="" type="radio"/> N):	Iron Staining (Y <input checked="" type="radio"/> N):	Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N):	Oily Sediment/Soil (Y <input checked="" type="radio"/> N):	Pooled Product (Y <input checked="" type="radio"/> N):	Distressed Vegetation (Y <input checked="" type="radio"/> N):	If yes, was product removed with sorbent pads?
Visible Contamination (Y <input checked="" type="radio"/> N):	Sheen Present on Water (Y <input checked="" type="radio"/> N):								
Iron Staining (Y <input checked="" type="radio"/> N):	Is the Boom Containing the Sheen? (Y <input checked="" type="radio"/> N):								
Oily Sediment/Soil (Y <input checked="" type="radio"/> N):	Pooled Product (Y <input checked="" type="radio"/> N):								
Distressed Vegetation (Y <input checked="" type="radio"/> N):	If yes, was product removed with sorbent pads?								
<p>Location of Visible Contamination:</p> <div style="border: 1px solid black; padding: 10px;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>o Pooled Product</p> </div>									
Inspector: <b>John Highstone</b>	Signature: <i>John Highstone</i>								



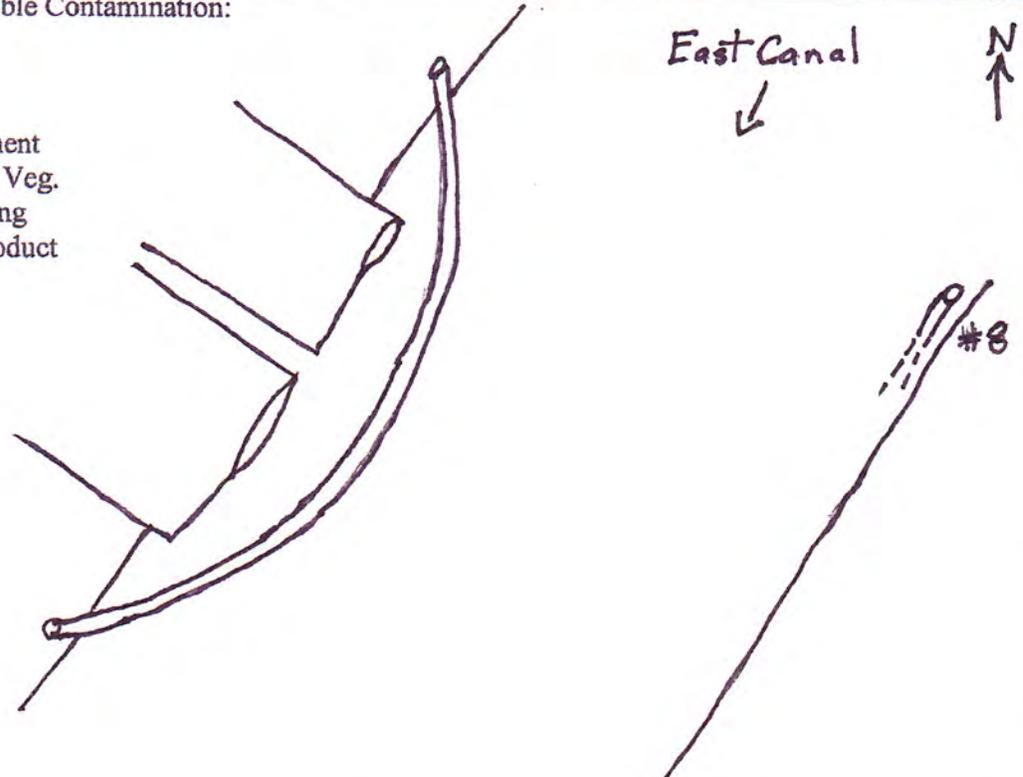
## Boom Inspection Form

Task Order 77

Boom Location: 11	Time/Date: 1114 / 6-4-2014		
Description of Boom Before Maintenance:  SATISFACTORY	Photograph (s) Time/Date Stamp:  1114 / 6-4-2014		
Boom Repaired (Y/N) (N) Description:	Boom Replaced (Y/N) (N) / Number of Sections: Description:		
<p><b>Visual Observations</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">                 Visible Contamination (Y/N) (Y):                  Iron Staining (Y/N) (N):                  Oily Sediment/Soil (Y/N) (Y):                  Distressed Vegetation (Y/N) (Y):             </td> <td style="width: 50%; border: none;">                 Sheen Present on Water (Y/N) (Y):                  Is the Boom Containing the Sheen? (Y/N) (Y):                  Pooled Product (Y/N) (N):                  If yes, was product removed with sorbent pads?             </td> </tr> </table>		Visible Contamination (Y/N) (Y): Iron Staining (Y/N) (N): Oily Sediment/Soil (Y/N) (Y): Distressed Vegetation (Y/N) (Y):	Sheen Present on Water (Y/N) (Y): Is the Boom Containing the Sheen? (Y/N) (Y): Pooled Product (Y/N) (N): If yes, was product removed with sorbent pads?
Visible Contamination (Y/N) (Y): Iron Staining (Y/N) (N): Oily Sediment/Soil (Y/N) (Y): Distressed Vegetation (Y/N) (Y):	Sheen Present on Water (Y/N) (Y): Is the Boom Containing the Sheen? (Y/N) (Y): Pooled Product (Y/N) (N): If yes, was product removed with sorbent pads?		
Location of Visible Contamination:  <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; border: none;"> <p><u>Legend</u></p>                 /// Sheen                  \\\ Oily Sediment                  xxx Distressed Veg.                  RRR Iron Staining                  ● Pooled Product             </td> <td style="width: 70%; border: none; text-align: center;"> </td> </tr> </table>		<p><u>Legend</u></p> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<p><u>Legend</u></p> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product			
Inspector: JOHN HIGLSTONE	Signature: <i>John Higlstone</i>		

## Boom Inspection Form

Task Order 77

<b>Boom Location: 2</b>	<b>Time/Date:</b> 0952 / 7-9-14
<b>Description of Boom Before Maintenance:</b> UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 0952 / 7-9-14
<b>Boom Repaired (Y/N):</b> Description: REATTACH SOUTH END ONTO STAKE DUE TO HIGH WATER LEVELS AND DIKE PUMPS NOT ON REGULARLY	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N): Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
	
<b>Inspector:</b> JOHN HIGGINS	<b>Signature:</b> <i>John Higgins</i>



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### Boom Inspection Form

Task Order 77

<b>Boom Location: 3</b>	<b>Time/Date:</b> <span style="font-size: 1.2em;">0950/7-9-14</span>
<b>Description of Boom Before Maintenance:</b>  <span style="font-size: 1.5em; font-family: cursive;">SATISFACTORY</span>	<b>Photograph (s) Time/Date Stamp:</b>  <span style="font-size: 1.5em;">0950/7-9-14</span>
<b>Boom Repaired (Y/N):</b> (Y) (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (Y) (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) (N) Iron Staining (Y/N): (Y) (N) Oily Sediment/Soil (Y/N): (Y) (N) Distressed Vegetation (Y/N): (Y) (N)	
Sheen Present on Water (Y/N): (Y) (N) Is the Boom Containing the Sheen? (Y/N): (Y) (N) Pooled Product (Y/N): (Y) (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	<div style="text-align: center;"> <b>East Canal</b>        ↓     </div> <div style="text-align: right;">       N        ↑     </div>
<b>Inspector:</b> <span style="font-size: 1.2em; font-family: cursive;">John Highstone</span>	<b>Signature:</b> <span style="font-size: 1.5em; font-family: cursive;">John Highstone</span>



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## Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1004 / 7-9-14
Description of Boom Before Maintenance:  SATISFACTORY	Photograph (s) Time/Date Stamp:  1004 / 7-9-14
Boom Repaired (Y/N): Description:	Boom Replaced (Y/N) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):</p> <p>Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><b>Legend</b>          /// Sheen          \\\ Oily Sediment          xxx Distressed Veg.          RRR Iron Staining          ● Pooled Product</p> <p style="text-align: center;">South Sweeper Cree k</p>	
Inspector: JOHN HIGGSTONE	Signature: John Higgle



SEALASKA ENVIRONMENTAL

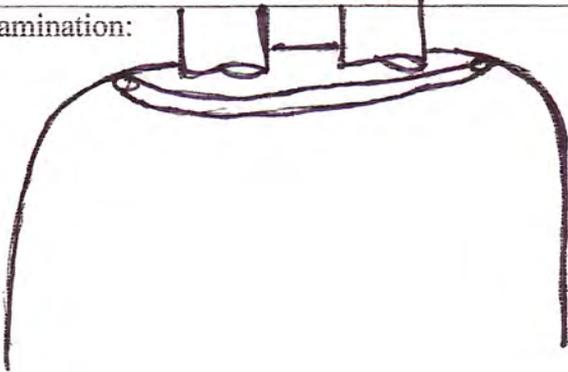
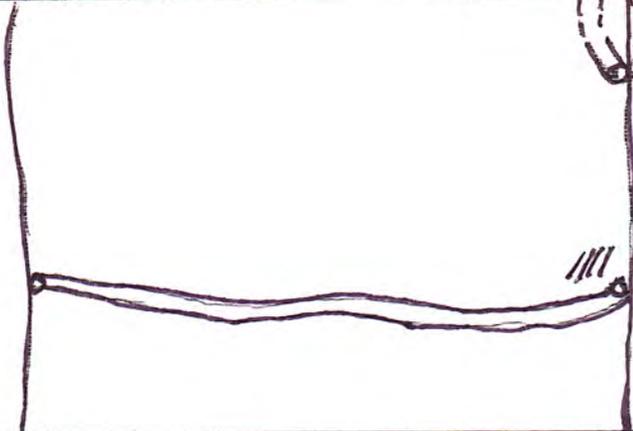
### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 0951 / 7-9-14
<b>Description of Boom Before Maintenance:</b>  UNSATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  0951 / 7-9-14
<b>Boom Repaired (Y/N):</b> Description: REPLACED (4) SECTIONS DUE TO SATURATION	<b>Boom Replaced (Y/N) / Number of Sections:</b> 4 Description: REPLACED (4) SECTIONS DUE TO SATURATION
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N): Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div data-bbox="203 955 487 1176" style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="324 892 1474 1743" style="width: 70%;"> </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> John Highstone

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 912	<b>Time/Date:</b> 0923-0926 / 7-9-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  0923-0926 / 7-9-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) N): Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (Y) N): Is the Boom Containing the Sheen? (Y/N): (Y) N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	N ↑
	
	
<b>Inspector:</b> JOHN HIGASTONE	<b>Signature:</b> <i>John Higastone</i>



## Boom Inspection Form

**Task Order 77**

<b>Boom Location: 10</b>	<b>Time/Date:</b> <div style="text-align: center; font-size: 1.2em;">1001 / 7-9-14</div>
<b>Description of Boom Before Maintenance:</b>  <div style="font-size: 1.5em; font-weight: bold;">SATISFACTORY</div>	<b>Photograph (s) Time/Date Stamp:</b>  <div style="text-align: center; font-size: 1.2em;">1001 / 7-9-14</div>
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> <i>John HIGHSTONE</i>	<b>Signature:</b> <i>John Highstone</i>



# Boom Inspection Form

Task Order 77

Boom Location: 11	Time/Date: 0923 / 7-9-14
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 0923 / 7-9-14
Boom Repaired (Y/N): Description:	Boom Replaced (Y/N) / Number of Sections: Description:

**Visual Observations**

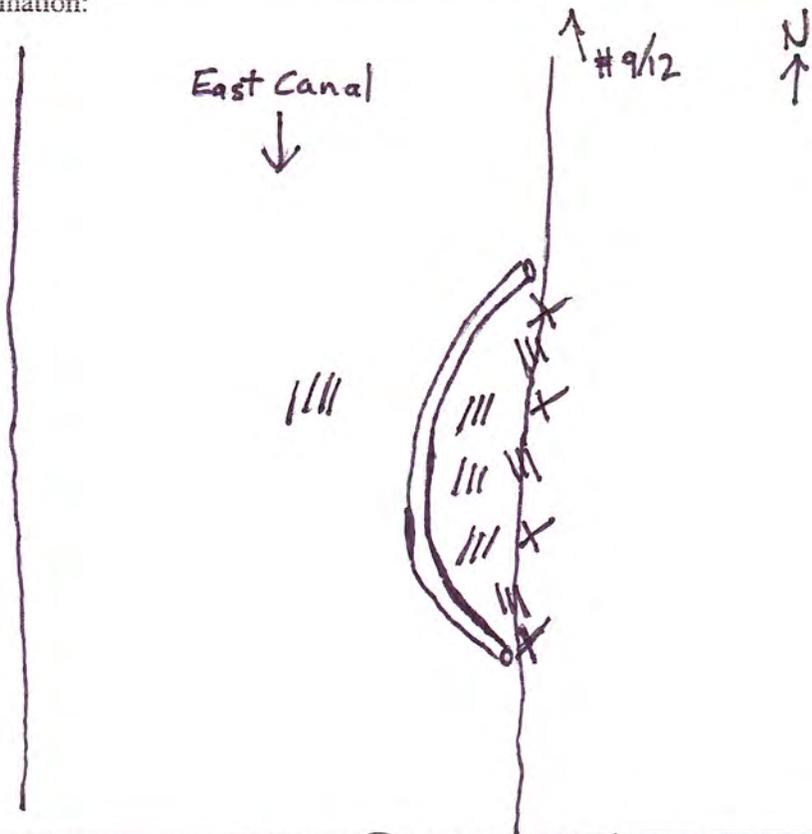
Visible Contamination (Y/N):  
 Iron Staining (Y/N):  
 Oily Sediment/Soil (Y/N):  
 Distressed Vegetation (Y/N):

Sheen Present on Water (Y/N):  
 Is the Boom Containing the Sheen? (Y/N)  
 Pooled Product (Y/N):  
 If yes, was product removed with sorbent pads?

Location of Visible Contamination:

Legend

- //// Sheen
- \\ \\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- Pooled Product



Inspector: JOHN HIGGINS

Signature: John Higgins



# Boom Inspection Form

Task Order 77

Boom Location: 2	Time/Date: 1251 / 8-4-14
Description of Boom Before Maintenance: <b>Satisfactory</b>	Photograph (s) Time/Date Stamp: 1251 / 8-4-14
Boom Repaired (Y / <input checked="" type="radio"/> N) Description:	Boom Replaced (Y / <input checked="" type="radio"/> N) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y / <input checked="" type="radio"/> N):</p> <p>Iron Staining (Y / <input checked="" type="radio"/> N):</p> <p>Oily Sediment/Soil (Y / <input checked="" type="radio"/> N):</p> <p>Distressed Vegetation (Y / <input checked="" type="radio"/> N):</p> <p>Sheen Present on Water (Y / <input checked="" type="radio"/> N):</p> <p>Is the Boom Containing the Sheen? (Y / N)</p> <p>Pooled Product (Y / <input checked="" type="radio"/> N):</p> <p>If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p>	
Inspector: <b>Andy Lewis</b>	Signature: <i>[Signature]</i>



# Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 3	<b>Time/Date:</b> 1242 / 8-4-14
<b>Description of Boom Before Maintenance:</b>  Satisfactory	<b>Photograph (s) Time/Date Stamp:</b>  1242 / 8-4-14
<b>Boom Repaired (Y / <input checked="" type="radio"/> N):</b> <b>Description:</b>	<b>Boom Replaced (Y / <input checked="" type="radio"/> N) / Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y / <input checked="" type="radio"/> N): Iron Staining (Y / <input checked="" type="radio"/> N): Oily Sediment/Soil (Y / <input checked="" type="radio"/> N): Distressed Vegetation (Y / <input checked="" type="radio"/> N):	
Sheen Present on Water (Y / <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y / <input checked="" type="radio"/> N) Pooled Product (Y / <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. rrr Iron Staining ● Pooled Product	
<b>Inspector:</b> Andy Lewis	<b>Signature:</b> 



SEALASKA ENVIRONMENTAL

## Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1226 / 8-4-14
Description of Boom Before Maintenance:  <b>Satisfactory</b>	Photograph (s) Time/Date Stamp:  1226 / 8-4-14
Boom Repaired (Y / <input checked="" type="radio"/> N): Description:	Boom Replaced (Y / <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b>	
Visible Contamination (Y / <input checked="" type="radio"/> N): Iron Staining (Y / <input checked="" type="radio"/> N): Oily Sediment/Soil (Y / <input checked="" type="radio"/> N): Distressed Vegetation (Y / <input checked="" type="radio"/> N):	Sheen Present on Water (Y / <input checked="" type="radio"/> N) Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y / <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?
Location of Visible Contamination:	
<p><u>Legend</u></p> <p>//// Sheen          \\\ Oily Sediment          xxx Distressed Veg.          RRR Iron Staining          e Pooled Product</p> <p style="text-align: center;">South Sweeper Creek</p>	
Inspector: <b>Andy Lewis</b>	Signature: 



SEALASKA ENVIRONMENTAL

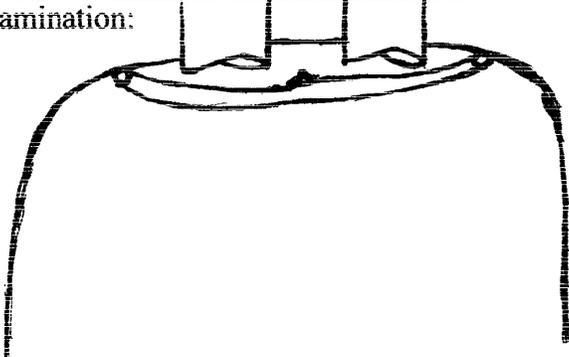
## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 8	<b>Time/Date:</b> 1243 / 8-4-14
<b>Description of Boom Before Maintenance:</b>  Satisfactory	<b>Photograph (s) Time/Date Stamp:</b>  1243 / 8-4-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) / (N) Iron Staining (Y/N): (Y) / (N) Oily Sediment/Soil (Y/N): (Y) / (N) Distressed Vegetation (Y/N): (Y) / (N) Sheen Present on Water (Y/N): (Y) / (N) Is the Boom Containing the Sheen? (Y/N): (N) Pooled Product (Y/N): (Y) / (N) If yes, was product removed with sorbent pads? • YES Removed with one pad.	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> Andy Lewis	<b>Signature:</b> 

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 912	<b>Time/Date:</b> 1235-1239 / 8-4-14
<b>Description of Boom Before Maintenance:</b>  Satisfactory	<b>Photograph (s) Time/Date Stamp:</b>  1235-1239 / 8-4-14
<b>Boom Repaired (Y/N):</b> <input checked="" type="radio"/> N <b>Description:</b>	<b>Boom Replaced (Y/N):</b> <input checked="" type="radio"/> N / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b>	
<b>Visible Contamination (Y/N):</b> <input checked="" type="radio"/> N <b>Iron Staining (Y/N):</b> <input checked="" type="radio"/> N <b>Oily Sediment/Soil (Y/N):</b> <input checked="" type="radio"/> N <b>Distressed Vegetation (Y/N):</b> <input checked="" type="radio"/> N	<b>Sheen Present on Water (Y/N):</b> <input checked="" type="radio"/> N <b>Is the Boom Containing the Sheen? (Y/N):</b> <input checked="" type="radio"/> N <b>Pooled Product (Y/N):</b> <input checked="" type="radio"/> N If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	N ↑
<b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> Andy Lewis	<b>Signature:</b> 



SEALASKA ENVIRONMENTAL

## Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	<b>Time/Date:</b> <span style="font-size: 1.2em;">1223 / 8-4-14</span>
<b>Description of Boom Before Maintenance:</b>  <span style="font-size: 1.5em; font-family: cursive;">Satisfactory</span>	<b>Photograph (s) Time/Date Stamp:</b>  <span style="font-size: 1.5em;">1223 / 8-4-14</span>
<b>Boom Repaired (Y / <input checked="" type="radio"/> N):</b> Description:	<b>Boom Replaced (Y / <input checked="" type="radio"/> N) / Number of Sections:</b> Description:
<b>Visual Observations</b>	
Visible Contamination (Y / <input checked="" type="radio"/> N): Iron Staining (Y / <input checked="" type="radio"/> N): Oily Sediment/Soil (Y / <input checked="" type="radio"/> N): Distressed Vegetation (Y / <input checked="" type="radio"/> N):	Sheen Present on Water (Y / <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y / N) Pooled Product (Y / <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?
<b>Location of Visible Contamination:</b>	
<div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> <p style="text-align: center;">South Sweeper Creek</p> <p style="text-align: right; margin-right: 20px;">N ↑</p> <p style="text-align: right; margin-right: 20px;">MAINTENANCE BRIDGE</p> </div> </div>	
<b>Inspector:</b> <span style="font-size: 1.2em; font-family: cursive;">Andy Lewis</span>	<b>Signature:</b>



SEALASKA ENVIRONMENTAL

### Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 11	<b>Time/Date:</b> 1236 / 8-4-14
<b>Description of Boom Before Maintenance:</b>  Satisfactory	<b>Photograph (s) Time/Date Stamp:</b>  1236 / 8-4-14
<b>Boom Repaired (Y / <input checked="" type="radio"/> N):</b> Description:	<b>Boom Replaced (Y / <input checked="" type="radio"/> N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination <input checked="" type="radio"/> Y / <input type="radio"/> N): Iron Staining (Y / <input checked="" type="radio"/> N): Oily Sediment/Soil <input checked="" type="radio"/> Y / <input type="radio"/> N): Distressed Vegetation <input checked="" type="radio"/> Y / <input type="radio"/> N): Sheen Present on Water <input checked="" type="radio"/> Y / <input type="radio"/> N): Is the Boom Containing the Sheen? (Y / <input checked="" type="radio"/> N) Pooled Product (Y / <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div data-bbox="224 993 487 1197" style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>     Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="584 945 1380 1764" style="width: 65%;"> </div> </div>	
<b>Inspector:</b> Andy Lewis	<b>Signature:</b> <i>[Handwritten Signature]</i>



# Boom Inspection Form

Task Order 77

Boom Location: 2	Time/Date: 1108 / 9-6-14
Description of Boom Before Maintenance: <u>SATISFACTORY</u>	Photograph (s) Time/Date Stamp: 1108 / 9-6-14
Boom Repaired (Y <input checked="" type="radio"/> N): Description:	Boom Replaced (Y <input checked="" type="radio"/> N) / Number of Sections: Description:
<b>Visual Observations</b> Visible Contamination (Y <input checked="" type="radio"/> N): Iron Staining (Y <input checked="" type="radio"/> N): Oily Sediment/Soil (Y <input checked="" type="radio"/> N): Distressed Vegetation (Y <input checked="" type="radio"/> N):	
Sheen Present on Water (Y <input checked="" type="radio"/> N): Is the Boom Containing the Sheen? (Y / N) N/A Pooled Product (Y <input checked="" type="radio"/> N): If yes, was product removed with sorbent pads?	
Location of Visible Contamination:  <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> </div> </div>	
Inspector: <u>John Highstone</u>	Signature: <u>John Highstone</u>



# Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 3	<b>Time/Date:</b> 1107 / 9-6-14
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1107 / 9-6-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N)/ Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N) Sheen Present on Water (Y/N): (Y) Is the Boom Containing the Sheen? (Y/N): (Y) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b> <div style="display: flex; justify-content: space-between;"> <div data-bbox="212 961 487 1171"> <p><b>Legend</b></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div data-bbox="341 898 1404 1669"> </div> </div>	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> 



# Boom Inspection Form

Task Order 77

Boom Location: 6	Time/Date: 1035/9-6-2014
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 1035/9-6-2014
Boom Repaired (Y/N): Description:	Boom Replaced (Y/N) / Number of Sections: Description:
<p><b>Visual Observations</b></p> <p>Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):</p> <p>Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) N/A Pooled Product (Y/N): If yes, was product removed with sorbent pads?</p>	
<p>Location of Visible Contamination:</p> <p><u>Legend</u>          /// Sheen          \\\ Oily Sediment          xxx Distressed Veg.          RRR Iron Staining          ● Pooled Product</p>	
Inspector: JOHN HEGHSTONE	Signature: John Heghstone



# Boom Inspection Form

Task Order 77

Boom Location: 8	Time/Date: 1107 / 9-6-14
Description of Boom Before Maintenance: SATISFACTORY	Photograph (s) Time/Date Stamp: 1107 / 9-6-14
Boom Repaired (Y (N): Description:	Boom Replaced (Y (N) / Number of Sections: Description:

**Visual Observations**

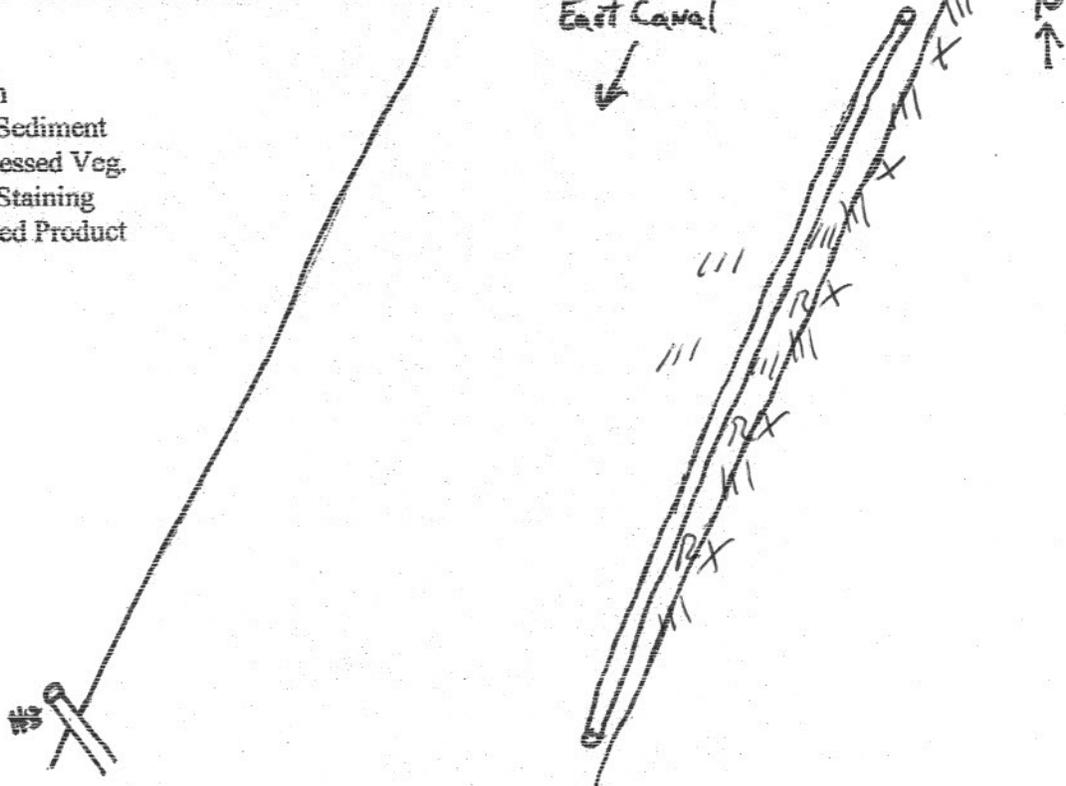
Visible Contamination (Y) (N):  
 Iron Staining (Y) (N):  
 Oily Sediment/Soil (Y) (N):  
 Distressed Vegetation (Y) (N):

Sheen Present on Water (Y) (N):  
 Is the Boom Containing the Sheen? (Y) (N)  
 Pooled Product (Y) (N):  
 If yes, was product removed with sorbent pads?

Location of Visible Contamination:

Legend

- //// Sheen
- \\ \\ Oily Sediment
- xxx Distressed Veg.
- RRR Iron Staining
- e Pooled Product



Inspector: JOHN MEGHSTONE	Signature: John A. Light
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## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 9	<b>Time/Date:</b> 1050 / 9-6-14
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 1050 / 9-6-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N):</b> (N) / <b>Number of Sections:</b> <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) <sup>SA</sup> <del>N/A</del> Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <b>Legend</b> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHTSTONE	<b>Signature:</b> 

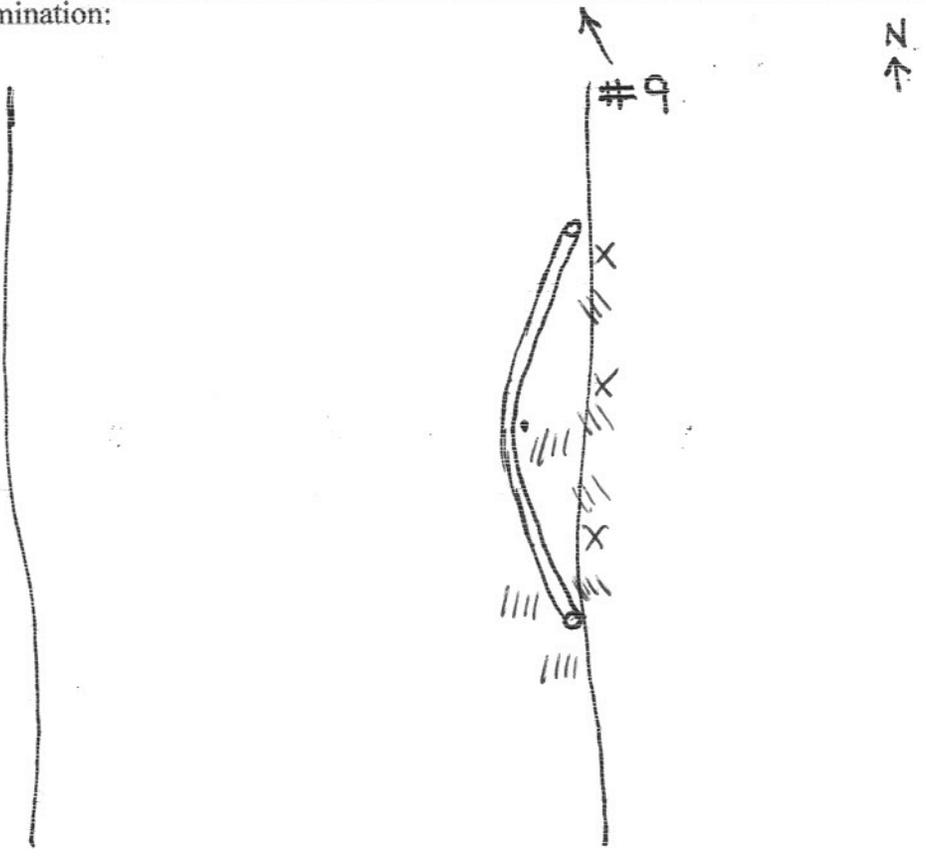
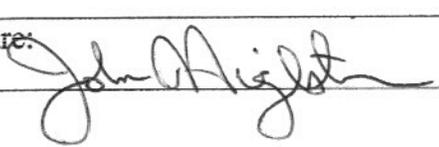
### Boom Inspection Form

Task Order 77

<b>Boom Location: 10</b>	<b>Time/Date:</b> 10 <sup>32</sup> / 9-6-14
<b>Description of Boom Before Maintenance:</b> SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b> 10 <sup>32</sup> / 9-6-14
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N): Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b> <div style="display: flex;"> <div style="flex: 1;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\\\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="flex: 2;"> <p style="text-align: center;">South Sweeper Creek</p> <p style="text-align: right;">MAYRA Bridge</p> </div> </div>	
<b>Inspector:</b> JOHN HIGLSTONE	<b>Signature:</b> <i>John Higlstone</i>

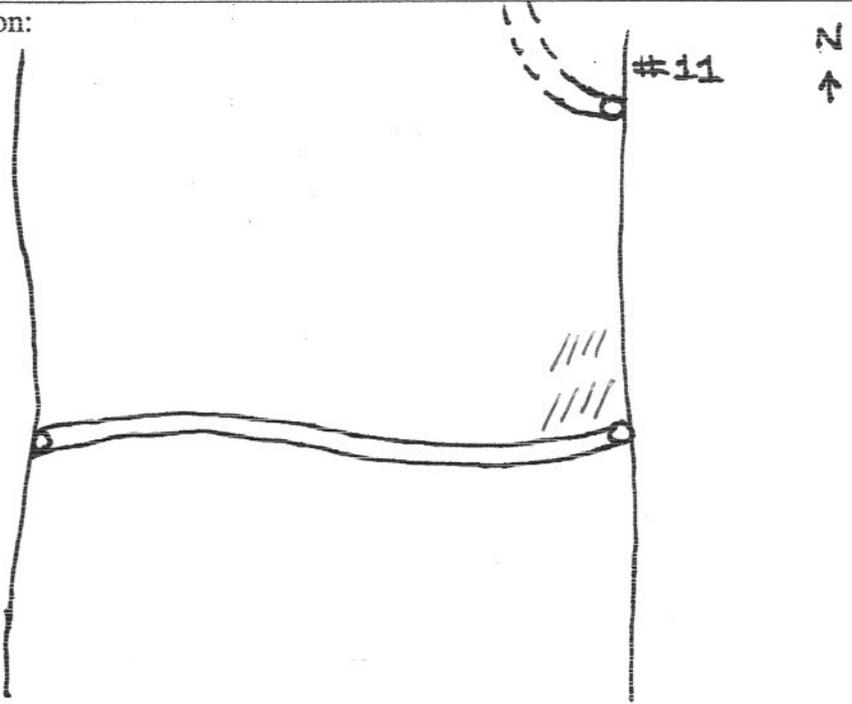
## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> <u>11</u>	<b>Time/Date:</b> <u>1042 / 9-6-14</u>
<b>Description of Boom Before Maintenance:</b>  <u>SATISFACTORY</u>	<b>Photograph (s) Time/Date Stamp:</b>  <u>1042 / 9-6-14</u>
<b>Boom Repaired (Y/N):</b> Description:	<b>Boom Replaced (Y/N) / Number of Sections:</b> Description:
<b>Visual Observations</b> Visible Contamination (Y/N): Iron Staining (Y/N): Oily Sediment/Soil (Y/N): Distressed Vegetation (Y/N):	
Sheen Present on Water (Y/N): Is the Boom Containing the Sheen? (Y/N) Pooled Product (Y/N): If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>  <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><u>Legend</u></p> <p>//// Sheen</p> <p>\\ \\ Oily Sediment</p> <p>xxx Distressed Veg.</p> <p>RRR Iron Staining</p> <p>● Pooled Product</p> </div> <div style="width: 60%; text-align: center;">  </div> </div>	
<b>Inspector:</b> <u>JOHN HIGHESTONE</u>	<b>Signature:</b> 

## Boom Inspection Form

Task Order 77

<b>Boom Location:</b> 12	<b>Time/Date:</b> 1043 / 9-6-14
<b>Description of Boom Before Maintenance:</b>  SATISFACTORY	<b>Photograph (s) Time/Date Stamp:</b>  1043 / 9-6-14
<b>Boom Repaired (Y/N):</b> (N) <b>Description:</b>	<b>Boom Replaced (Y/N) / Number of Sections:</b> (N) <b>Description:</b>
<b>Visual Observations</b> Visible Contamination (Y/N): (Y) (N) Iron Staining (Y/N): (N) Oily Sediment/Soil (Y/N): (N) Distressed Vegetation (Y/N): (N)	
Sheen Present on Water (Y/N): (Y) (N) Is the Boom Containing the Sheen? (Y/N): (Y) (N) Pooled Product (Y/N): (N) If yes, was product removed with sorbent pads?	
<b>Location of Visible Contamination:</b>	
<u>Legend</u> /// Sheen \\\ Oily Sediment xxx Distressed Veg. RRR Iron Staining ● Pooled Product	
<b>Inspector:</b> JOHN HIGHSTONE	<b>Signature:</b> <i>John Highstone</i>

SHEEN COMING FROM BOOM # 11. HIGH WATERS DUE TO EXCESSIVE RAINS.

**APPENDIX B**  
**PHOTOGRAPHS OF BOOM LOCATIONS**



Photo 1. – East Canal Boom 2, May 2014, view west.



Photo 2. – East Canal Boom 2, April 2014, view west; high water level in canal while the canal pumps were off.



Photo 3. – West Canal Boom 3, March 2014, view west; visible free product behind boom.



Photo 4. – West Canal Boom 4, January 2014, view east (boom was removed in April 2014).



Photo 5. – Sweeper Creek Boom 6, June 2014, view south.



Photo 6. – East Canal Boom 8, December 2013, view north; boom with oil sheen visible.



Photo 7. – East Canal Boom 8, April 2014, view north; with replaced boom.



Photo 8. – East Canal Boom 9/12, February 2014, view north; upper segment location prior to April.



Photo 9. – East Canal Boom 9/12, February 2014, view west; lower segment upstream of Boom 11 prior to April.



Photo 10. – East Canal Boom 9, April 2014, view north; revised location.



Photo 11. – East Canal Boom 12, April 2014, view west; revised location downstream of Boom 11.



Photo 12. – Sweeper Creek Boom 10, February 2014, view southeast; low tide.



Photo 13. – Sweeper Creek Boom 10, February 2014, view southeast; new boom at high tide.



Photo 14. – East Canal Boom 11, May 2014, view north.

**APPENDIX C**  
**2014 LONG-TERM MONITORING FIELD MEASUREMENTS**

	Location Cross-Reference	Date	Sample Collected	Casing Elevation (feet MLLW)	Depth to Water (feet)	Product Thickness (feet)	Type of Product	Corrected Depth to Water* (feet)	GW Surface Elevation (feet MLLW)	Comments
Area 303	03-107	8/27/13	Y	31.30	27.61	0	NA	27.61	3.69	
	03-012	8/28/13	Y	9.27	7.41	0	NA	7.41	1.86	
	04-211	8/28/13	Y	28.45	24.08	0	NA	24.08	4.37	Also monitored as part of GCI Compound.
	MW-303-28	8/27/13	N	32.83	28.54	0.07	GRO	28.49	4.34	No sample collected due to product thickness.
	MW-303-30	8/28/13	Y	31.20	27.59	0.01	GRO	27.58	3.62	
	MW-303-31	8/28/13	Y	31.82	27.70	0	NA	27.70	4.12	
	MW-303-32	8/28/13	Y	29.16	24.54	0	NA	24.54	4.62	
	MW-303-33	8/27/13	Y	27.18	22.92	0	NA	22.92	4.26	
	MW-303-37	8/28/13	Y	16.23	13.07	0	NA	13.07	3.16	
	MW-303-38	8/28/13	Y	27.68	25.40	0	NA	25.40	2.28	
	MW-303-39	8/28/13	Y	23.43	21.41	0	NA	21.41	2.02	
	MW-303-40	8/28/13	Y	17.68	6.96	0	NA	6.96	10.72	
	MW-303-41	8/28/13	N	30.73	Dry	0	NA	NA	NA	Well dry, no sample collected.
	MW-303-42	8/28/13	Y	30.73	28.95	0.01	GRO	28.94	1.78	
	MW-303-43	8/28/13	Y	32.50	29.01	0	NA	29.01	3.49	
MW-303-44	8/28/13	Y	32.91	29.54	0	NA	29.54	3.37		
	MRP-MW2	8/28/13	Y	26.99	21.69	0	NA	21.69	5.30	Also sampled as part of SWMU 62, New Housing Fuel Leak Area
Former Power Plant, Building T-1451	01-118	8/26/13	Y	19.68	16.55	0	NA	16.55	3.13	
	01-150	8/26/13	Y	22.68	19.84	0	NA	19.84	2.84	
	MW-1451-1	8/26/13	Y	6.56	6.51	0	NA	6.51	0.05	
	MW-1451-2	8/26/13	Y	6.24	6.06	0	NA	6.06	0.18	
	MW-1451-3	8/27/13	Y	5.09	5.27	0	NA	5.27	-0.18	
	MW-1451-4	8/26/13	Y	5.99	6.00	0	NA	6.00	-0.01	
	MW-1451-5	8/26/13	Y	7.50	6.81	0	NA	6.81	0.69	
	MW-1451-6	8/27/13	Y	6.15	5.29	0	NA	5.29	0.86	
	MW-1451-7	8/26/13	N	7.33	6.96	0.50	DRO	6.55	0.78	No sample collected due to product thickness.
	MW-1451-8	8/26/13	Y	8.07	6.97	0	NA	6.97	1.10	
MW-1451-9	8/28/13	N	9.91	8.77	0.02	DRO	8.75	1.15	No sample collected due to product thickness.	
	E-701	8/26/13	Y	21.26	18.43	0	NA	18.43	2.83	Background well.
GCI Compound, UST GC-1	04-100	8/30/13	Y	32.80	28.38	0	NA	28.38	4.42	
	04-201	8/30/13	N	30.61	25.94	0	NA	25.94	4.67	
	04-202	8/30/13	Y	30.90	26.28	0	NA	26.28	4.62	
	04-203	8/30/13	N	31.13	26.59	0	NA	26.59	4.54	
	04-204	8/30/13	Y	30.82	26.02	0.01	GRO	26.01	4.81	
	04-210	8/30/13	Y	29.22	24.96	0	NA	24.96	4.26	
	04-211	8/28/13	Y	28.45	24.08	0	NA	24.08	4.37	
	04-213	8/30/13	Y	28.70	24.06	0	NA	24.06	4.64	
	04-701	8/30/13	Y	18.19	14.31	0	NA	14.31	3.88	

	Location Cross-Reference	Date	Sample Collected	Casing Elevation (feet MLLW)	Depth to Water (feet)	Product Thickness (feet)	Type of Product	Corrected Depth to Water* (feet)	GW Surface Elevation (feet MLLW)	Comments
Housing Area (Arctic Acres)	03-416	8/30/13	Y	26.40	19.96	0	NA	19.96	6.44	
	03-420	8/30/13	Y	29.76	23.06	0	NA	23.06	6.70	
	03-421	8/30/13	Y	29.81	23.05	0	NA	23.05	6.76	
	03-890	8/30/13	Y	30.54	23.90	0	NA	23.90	6.64	
NMCB	02-300	8/31/13	N	11.99	10.27	0.44	GRO	9.95	2.04	
	02-301	8/31/13	N	14.87	12.36	0	NA	12.36	2.51	
	02-451	8/31/13	Y	10.99	8.51	0	NA	8.51	2.48	
	02-452	8/31/13	N	11.94	9.32	0	NA	9.32	2.62	
	02-453	8/31/13	N	11.68	9.19	0	NA	9.19	2.49	
	02-455	8/31/13	N	14.08	11.53	0	NA	11.53	2.55	
	02-461	8/31/13	Y	9.41	6.74	0	NA	6.74	2.67	
	02-463	8/31/13	N	12.58	9.71	0	NA	9.71	2.87	
	02-478	8/31/13	N	10.24	7.83	0	NA	7.83	2.41	
	02-479	8/31/13	Y	16.25	12.78	0	NA	12.78	3.47	
	02-497	8/31/13	N	9.15	6.69	0	NA	6.69	2.46	
	02-815	8/31/13	N	16.35	13.90	0	NA	13.90	2.45	
	02-816	8/31/13	N	12.86	10.60	0	NA	10.60	2.26	
	02-817	8/31/13	N	12.49	9.95	0	NA	9.95	2.54	
	02-818	8/31/13	Y	11.55	8.98	0	NA	8.98	2.57	
	02-819	8/31/13	N	10.03	7.33	0	NA	7.33	2.70	
	E-201	8/31/13	Y	15.54	13.22	0	NA	13.22	2.32	
	NMCB-04	8/31/13	N	14.49	12.25	0.43	GRO	11.93	2.56	
	NMCB-07	8/31/13	N	11.85	9.58	0.36	GRO	9.31	2.54	No sample collected due to product thickness.
	NMCB-08	8/31/13	N	8.52	5.98	0	NA	5.98	2.54	
NMCB-09	8/31/13	Y	11.96	9.67	0	NA	9.67	2.29		
NMCB-10	8/31/13	N	12.95	10.56	0.14	GRO	10.46	2.49	No sample collected due to product thickness.	
NMCB-11	8/31/13	N	12.05	9.26	0.03	GRO	9.24	2.81	No sample collected due to product thickness.	
NMCB-12	8/31/13	N	16.27	14.18	0	NA	14.18	2.09		
ROICC	08-200	9/4/13	Y	14.87	4.05	0	NA	4.05	10.82	
	08-202	9/4/13	Y	13.86	2.70	0	NA	2.70	11.16	
Runway 5-23	14-100	9/7/13	Y	15.06	2.75	0	NA	2.75	12.31	
SA 79, Main Road Pipeline, South End	02-230	9/5/13	Y	13.69	11.44	0	NA	11.44	2.25	
	601	9/5/13	Y	13.77	11.03	0	NA	11.03	2.74	
	MRP-MW8	9/5/13	Y	12.72	10.11	0	NA	10.11	2.61	

	Location Cross-Reference	Date	Sample Collected	Casing Elevation (feet MLLW)	Depth to Water (feet)	Product Thickness (feet)	Type of Product	Corrected Depth to Water* (feet)	GW Surface Elevation (feet MLLW)	Comments
SA 80, Steam Plant 4 (UST 27089 and 27090)	04-155	9/4/13	N	27.77	16.01	0.21	DRO	15.84	11.93	
	04-157	9/4/13	N	28.18	19.51	0.01	DRO	19.50	8.68	
	04-158	9/4/13	Y	27.36	19.71	0	NA	19.71	7.65	
	04-159	9/4/13	Y	29.86	23.55	0	NA	23.55	6.31	
	04-164	9/4/13	N	28.51	22.22	0	NA	22.22	6.29	
	04-173	9/4/13	Y	27.46	14.78	0	NA	14.78	12.68	
	SP4-3	9/4/13	Y	26.70	20.40	0	NA	20.40	6.30	
South of Runway 18-36	02-231	8/30/13	Y	16.59	14.32	0	NA	14.32	2.27	
	02-232	8/30/13	Y	18.54	16.55	0	NA	16.55	1.99	
	18/36-02	8/30/13	N	19.86	17.50	0	NA	17.50	2.36	
	AS-1	8/30/13	Y	12.10	13.66	0	NA	13.66	-1.56	
	E-213 (AMW-213)	8/30/13	N	13.73	10.91	0.01	DRO	10.90	2.83	
	E-216	8/30/13	N	18.45	16.12	0.14	DRO	16.01	2.44	
	E-217 (AMW-217)	8/30/13	N	18.12	15.63	0.04	DRO	15.60	2.52	
	RW-18/36-03	8/30/13	N	16.25	13.59	0	NA	13.59	2.66	
	RW-18/36-04	8/30/13	N	16.29	13.59	0.14	DRO	13.48	2.81	
	RW-18/36-05	8/30/13	N	11.39	8.93	0	NA	8.93	2.46	
	Z 3-6	8/30/13	N	9.81	7.25	0	NA	7.25	2.56	
	Z 4-2	8/30/13	N	14.92	12.17	0	NA	12.17	2.75	
SWMU 14, Old Pesticide Storage and Disposal Area	MW-14-5	9/10/13	Y	21.94	16.02	0	NA	16.02	5.92	
	01-153	9/10/13	Y	24.29	18.54	0	NA	18.54	5.75	
	MW-15-424	9/10/13	N	21.94	18.19	0	NA	18.19	3.75	
	MW15-3	9/10/13	N	18.90	13.54	0	NA	13.54	5.36	
SWMU 17, Power Plant No. 3 Area	05-735	9/6/13	Y	19.00	15.84	0	NA	15.84	3.16	
SWMU 25, Roberts Landfill	A-2	9/9/13	Y	225.72	6.46	0	NA	6.46	219.26	
	A-3	9/10/13	Y	140.38	23.49	0	NA	23.49	116.89	
	A-5	9/9/13	Y	214.45	25.57	0	NA	25.57	188.88	
	B-1	9/9/13	Y	216.74	11.35	0	NA	11.35	205.39	
SWMU 55, Public Works Transportation Department Waste Storage Area	55-145	9/11/13	Y	21.40	16.95	0	NA	16.95	4.45	
	55-146	9/11/13	N	21.25	17.64	0	NA	17.64	3.61	
SWMU 60, Tank Farm A	650	8/30/13	Y	13.11	10.00	0	NA	10.00	3.11	
	651	8/30/13	Y	12.08	9.10	0	NA	9.10	2.98	
	652	8/30/13	N	12.37	9.55	0.03	DRO	9.53	2.84	No sample collected due to product thickness.
	653	8/30/13	N	15.10	11.79	0.05	DRO	11.75	3.35	No sample collected due to product thickness.
	LC5A	8/30/13	Y	10.86	6.95	0	NA	6.95	3.91	
	MW E006	8/30/13	Y	156.42	6.38	0	NA	6.38	150.04	
SWMU 61, Tank Farm B	14-113	9/6/13	Y	9.14	9.09	0	NA	9.09	0.05	
	14-210	9/6/13	Y	12.12	11.67	0	NA	11.67	0.45	
	TFB-MW4B	9/6/13	Y	37.44	4.47	0	NA	4.47	32.97	

	Location Cross-Reference	Date	Sample Collected	Casing Elevation (feet MLLW)	Depth to Water (feet)	Product Thickness (feet)	Type of Product	Corrected Depth to Water* (feet)	GW Surface Elevation (feet MLLW)	Comments
SWMU 62, New Housing Fuel Leak Sandy Cove	03-104	9/10/13	Y	25.13	19.80	0	NA	19.80	5.33	
	03-155	9/10/13	Y	26.27	19.31	0	NA	19.31	6.96	
	03-619	9/10/13	Y	23.38	16.65	0	NA	16.65	6.73	
	03-778	9/10/13	Y	25.30	19.85	0	NA	19.85	5.45	
	HMW-146-1	9/10/13	N	23.52	17.04	0	NA	17.04	6.48	
	MRP-MW2	8/28/13	Y	26.99	21.69	0	NA	21.69	5.30	
	MRP-MW3	9/10/13	Y	27.25	8.29	0	NA	8.29	18.96	
	MW-107-1	9/10/13	Y	25.65	18.60	0	NA	18.60	7.05	
	MW-134-10	9/10/13	N	23.94	17.18	0	NA	17.18	6.76	
	MW-134-11	9/10/13	Y	26.53	18.49	0	NA	18.49	8.04	
	MW-146-1	9/10/13	Y	24.42	17.52	0	NA	17.52	6.90	
	MW-187-1	9/10/13	Y	26.86	19.42	0	NA	19.42	7.44	
RW-102-4	9/10/13	N	25.28	19.51	0	NA	19.51	5.77		
SWMU 62, New Housing Fuel Leak Eagle Bay Housing	03-101	9/7/13	N	26.01	22.43	0	NA	22.43	3.58	
	03-102	9/7/13	N	17.27	13.99	0	NA	13.99	3.28	
	03-103	9/7/13	N	18.93	15.78	0	NA	15.78	3.15	
	03-109	9/7/13	N	33.69	30.03	0	NA	30.03	3.66	
	03-502	9/7/13	Y	28.04	24.40	0	NA	24.40	3.64	
	03-898	9/7/13	N	14.83	12.46	0	NA	12.46	2.37	
	AMW-704	9/7/13	Y	8.21	6.51	0	NA	6.51	1.70	
	CTO-124-MW15	9/7/13	N	20.96	17.60	0	NA	17.60	3.36	
	HMW-303-3	9/7/13	N	31.64	27.82	0	NA	27.82	3.82	
	HMW-303-4	9/7/13	N	30.20	26.17	0	NA	26.17	4.03	
	HMW-303-11	9/7/13	N	30.35	26.60	0	NA	26.60	3.75	
	MW-303-7	9/7/13	Y	26.07	21.80	0	NA	21.80	4.27	
	MW-303-8	9/7/13	N	27.20	23.00	0.08	DRO	22.93	4.27	
	MW-303-12	9/7/13	N	25.64	21.54	0	NA	21.54	4.10	
	RW-303-4	9/7/13	N	26.31	22.28	0.03	DRO	22.26	4.05	
	RW-303-13	9/7/13	Y	8.98	6.44	0	NA	6.44	2.54	
	RW-303-14	9/7/13	N	10.53	7.73	0	NA	7.73	2.80	
RW-303-15	9/7/13	N	31.26	27.55	0	NA	27.55	3.71		
RW-303-16	9/7/13	Y	11.02	7.79	0	NA	7.79	3.23		
Tanker Shed, UST 42494	04-175	9/3/13	Y	11.34	6.85	0	NA	6.85	4.49	
	04-290	9/3/13	Y	11.19	7.22	0	NA	7.22	3.97	
	04-301	9/3/13	N	11.35	6.94	0	NA	6.94	4.41	
	04-302	9/3/13	N	11.13	6.70	0	NA	6.70	4.43	
	04-306	9/3/13	Y	11.17	7.21	0	NA	7.21	3.96	
	04-312	9/3/13	N	11.21	6.81	0	NA	6.81	4.40	
	04-313	9/3/13	N	11.35	6.85	0	NA	6.85	4.50	
	04-601	9/3/13	Y	13.72	10.35	0	NA	10.35	3.37	
TS-03	9/3/13	N	9.61	6.62	0	NA	6.62	2.99		

Notes:

\*Water levels corrected for light non-aqueous phase liquid (LNAPL) layer if observed in well. Calculation is based on the density of the type of product present. The type of product selected for the correction was determined by the 2013 analytical results.

The product that was present in the highest quantities at each site or area within a site was selected. If gasoline and diesel were present in equal amounts, diesel was selected based on the assumption that the gasoline was probably weathered and denser than non-weathered gasoline.

**APPENDIX D**  
**RESPONSE TO REGULATOR COMMENTS**

