FINAL FIRST FIVE-YEAR REVIEW REPORT FOR SITES SS002, SS007, AND SS010 AT DRIFTWOOD BAY RADIO RELAY STATION, ALASKA



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LIST OF ABBREVIATIONS & ACRONYMS

AAC	Alaska Administrative Code
ACM	asbestos-containing material
ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
AFCEC	Air Force Civil Engineer Center
amsl	above mean sea level
AST	aboveground storage tank
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	chemical or contaminant of concern
DRO	diesel-range organics
ERP	Environmental Restoration Program
EPA	U.S. Environmental Protection Agency
FYR	Five-Year Review
ICs	institutional controls
LTM	long-term monitoring
LUC	land use control
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MOGAS	motor vehicle gas
MWH	MWH Americas, Inc.
MNA	Monitored Natural Attenuation
NCP	National Contingency Plan
NEC	Notice of Environmental Contamination
PAH	polycyclic aromatic hydrocarbon
POL	petroleum, oil, and lubricant
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RRO	residual-range organics
RRS	Radio Relay Station
TPH	total petroleum hydrocarbons
USAF	U.S. Air Force
UST	underground storage tank
UU/UE	unlimited use and unrestricted exposure
WACS	White Alice Communication System

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Air Force (USAF) is preparing this FYR pursuant to Department of Defense policy, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, and with the National Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Section 300.430(f)(4)(ii)), and considering U.S. Environmental Protection Agency (EPA) policy.

This is the first FYR for Sites SS002, SS007, and SS010 at Driftwood Bay Radio Relay Station (RRS), Alaska. Statutory reviews under CERCLA are not required for Sites SS002, SS007, or SS010, as no CERCLA contaminants were identified at these sites. Sites SS002, SS007, and SS010 do not have official Decision Documents. Therefore, this FYR is being prepared at the discretion of the USAF due to the fact that pollutants or contaminants regulated under CERCLA and/or Alaska State law, including contamination resulting from releases of petroleum products, remain at these three sites above levels that allow for unlimited use and unrestricted exposure (UU/UE).

There were 14 Environmental Restoration Program (ERP) sites identified at Driftwood Bay RRS (USAF, 2011). However, only Sites SS002, SS007, and SS010 will be addressed in this FYR. Four sites (DA013, OT001, LF006, WP003) not included in this FYR remain active (Alaska Department of Environmental Conservation [ADEC], 2016a). Four sites (FL009, SS004, SS008, and SS011) are identified as Cleanup Complete (ADEC, 2016a), so FYRs are not required. Contaminants at concentrations exceeding risk-based cleanup levels were not identified at the remaining sites (SS005, Heavy Equipment Storage Area, and Quarry Area) (USAF, 2011).

This FYR was led by MWH Americas, Inc. (MWH), on behalf of the Air Force Civil Engineer Center (AFCEC) under Contract Number FA8903-16-D-0032, Task Order 0002. Participants included AFCEC, MWH, and ADEC staff with expertise in site investigation and remediation. The review began in June 2016.

Site Background

Driftwood Bay RRS is located on the north-central coast of Unalaska Island, part of the Fox Islands on the Aleutian Archipelago of Alaska. The installation is located approximately 15 miles from Unalaska/Dutch Harbor (**Figure 1**). Access to the site is limited to air transportation and sea-going landing craft (USAF, 2016a).

Driftwood Bay RRS was one of 18 Distant Early Warning Line stations constructed in Alaska. The site was activated in 1961 as a White Alice Communications Systems (WACS) facility, was re-designated as a RRS in 1969, and was deactivated in 1977 (USAF, 2015a). The installation consisted of a composite building with dormatories, office space, a vehicle maintenance shop, and equipment for standby power generation; two billboard antennas and White Alice arrays; two receiver antennas; petroleum, oil, and lubricant (POL) storage and distribution facilities; an equipment/maintenance building; an ammunition storage shed; a water supply system; a disposal area; and an airstrip.



The installation was divided into Top Camp and Lower Camp areas. The runway and Lower Camp are located just south of Driftwood Bay at an elevation between 5 and 100 feet above mean sea level (amsl). Top Camp is located approximately 3 miles west of Driftwood Bay, on a plateau approximately 1,300 feet amsl (USAF, 2005).

In 1991, the US Army Corps of Engineers (USACE), under the Formerly Used Defense Site Program, demolished buildings and cleaned up solid wastes at the Driftwood Bay RRS (USAF, 2011). Demolition debris, asbestos-containing material (ACM), aboveground and underground fuel storage tanks, and portions of the fuel pipeline were buried in an onsite landfill (Landfill No. 1) developed to receive these wastes and permitted by the State. Concrete foundations were left in place. A 3,500-foot dirt runway is still present at the Lower Camp portion of the facility (USAF, 2009a).

There are currently no manned military operations at Driftwood Bay RRS, because it has been decommissioned, and all facilities except the 3,500-foot dirt runway at Lower Camp have been demolished. The closest community is Dutch Harbor, which is located 13.5 air miles to the southeast (Figure 1). There are no residents within 4 miles of the former installation (USAF, 2011).

The USAF maintains ownership of most of the land on which Driftwood RRS is located under a Public Land Order (USAF, 2011). The land occupied by Driftwood Bay RRS is overfiled by both Aleut Corporation and Ounalashka Corporation. Under the Alaska Native Claims Settlement Act and the Alaska Land Transfer Acceleration Act, regional and village corporations can file applications selecting certain lands for transfer to the Native Corporation and can "overfile" or "top-file" withdrawn lands for future selection when they become available. The land surrounding Driftwood Bay RRS is part of the Alaska Maritime National Wildlife Refuge and is managed by the U.S. Fish and Wildlife Service (USAF, 2015a). In 2007, Driftwood Bay RRS received a No Further Remedial Action Planned determination from the EPA (EPA, 2007).

Operations at Driftwood RRS that impacted the environment include POL transfer and storage, vehicle and electronic system maintenance, and waste disposal (landfills). The following sections provide more detailed background information on the three sites that are the subject of this FYR.

Site SS002

Site SS002, Landfill No. 1 (**Figure 2**), is located adjacent to (south of) the former composite building at Top Camp. The landfill, which encompasses approximately 40,000 square feet, was created under Permit No. 88921-BA009 and is regulated under 18 Alaska Administrative Code (AAC) 60 (USAF, 2015a). The asbestos cell is located near the water tank (USAF, 1996).

During the 1991 demolition activities, debris from the composite building, POL pump building, and other RRS structures were buried in Landfill No. 1. The landfill also received aboveground storage tanks (ASTs), underground storage tanks (USTs), pipelines, and fuel-contaminated soil that was excavated and thermally treated prior to its disposal in the landfill (USAF, 1996).

Diesel-range organics (DRO) and total petroleum hydrocarbons (TPH) were detected in a surface soil sample collected near a seep in the northeast portion of the landfill in 1995. DRO was detected at 550 milligrams per kilogram (mg/kg) and TPH was detected at 16,000 mg/kg in the soil sample (USAF, 2015a). In 2000, the landfill was observed to be subsiding and exposed metal and surface debris were noted at Site SS002 (USAF, 2015a).

In 2005, a cover soil field testing grid was established over the landfill (Figure 2). Three composite samples of the landfill cover were collected and tested in the field for chlorides. Elevated chlorides were not detected in the landfill cover samples (USAF, 2005). Additional surface soil sampling was conducted at the sample locations illustrated on Figure 2. Cover soil sample SS002-S01-0 was collected at the center of the cover soil field testing grid. Surface soil sample SS002-S02-0 was collected from a low area where runoff from the landfill collects, near the seep location sampled in 1995. No target analytes were detected either of the soil samples. The results of the 2005 landfill inspection indicated that rehabilitation of the landfill cover to ensure adequate drainage without erosion and sufficient coverage of the ACM cell and other landfill contents was warranted (USAF, 2015a).

Site SS007

Site SS007, Spill/Leak No. 7 at the POL Tank Farm, is located along the beach northeast of Lower Camp and the airstrip (**Figure 3**). The POL Tank Farm included two 250-gallon ASTs, a fuel pumphouse, and a 25,000-gallon motor vehicle gas (MOGAS) AST. Fuel from the 250,000-gallon ASTs was pumped through a 2-inch diameter fuel line to the former composite building (USAF, 2005). The ASTs were removed during the 1991 demolition activities at Driftwood Bay RRS (USAF, 2009a), and oiled sand was excavated from the site (USAF, 2005). No evidence of the MOGAS AST was identified during a 2005 site inspection (USAF, 2005).

In 1985, two surface soil samples were collected near the 250,000-gallon ASTs. Trace concentrations of metals and methylene chloride were detected in the soil samples (USAF, 2005). In addition, a surface water sample was collected from Snuffy Creek near the ASTs and analyzed for metals. Metals were not detected in the surface water sample (USAF, 2005).

In 1995, one surface soil sample was collected from each of the foundations of the 250,000-gallon ASTs. In addition, a surface soil sample was collected from the north side of the former pumphouse and a surface water sample was collected from Snuffy Creek, near the former location of the ASTs. All three surface soil samples were analyzed for DRO, one surface soil was analyzed for TPH, and the surface water sample was analyzed for DRO and benzene, toluene, ethylbenzene, and xylenes (BTEX). DRO was detected at a maximum concentration of 9,700 mg/kg in the AST foundation soil samples; TPH was detected at a concentration of 27,000 mg/kg in a soil sample from one AST foundation; and DRO was detected at 13,300 mg/kg in the surface soil sample collected north of the former pumphouse. DRO and BTEX were not detected in the surface water sample from Snuffy Creek (USAF, 2005).

In 2005, four surface soil samples were collected at Site SS007 at the locations illustrated on Figure 3. DRO was detected in all four soil samples at concentrations ranging from 37.4 mg/kg to 13,700 mg/kg. The highest DRO concentration was detected in the sample collected near the pumphouse foundation (USAF, 2005). DRO concentrations in soil exceeded the ADEC Method Two migration-to-groundwater criterion of 230 mg/kg in two of the four surface soil samples (SS007-S02-0 and SS007-S03-0). Polycyclic aromatic hydrocarbons (PAHs) were detected in two of the soil samples; however, only the benzo(a) pyrene detection of 2.37 mg/kg in sample 2007-S03-0 exceeded the criterion of 0.9 mg/kg (USAF, 2005).

In 2007, soil borings were advanced and groundwater samples were collected at Site SS007 (USAF, 2009a). DRO was detected in all but four of the 29 soil borings at concentrations exceeding the ADEC Method Two migration-to-groundwater criterion of 230 mg/kg. The PAH

benzo(a)pyrene was detected in soil at a maximum concentration of 0.61 mg/kg, which is below the 0.9 mg/kg screening criterion (USAF, 2009b). The detected DRO concentrations ranged from 250 mg/kg to 3,400 mg/kg, which exceed the ADEC Method Two migration-to-groundwater criterion of 230 mg/kg (USAF, 2015a). Groundwater samples from five of the six temporary well points sampled had DRO at concentrations exceeding the ADEC groundwater criterion of 1.5 milligrams per liter (mg/L). DRO concentrations above the criterion ranged from 1.9 mg/L to 82 mg/L (USAF, 2015a).

In August 2017, ADEC approved request for an 18 AAC 75.350 determination that groundwater is not a potential drinking water source for SS007. As such, migration to groundwater cleanup levels do not apply for soil at this site and additional groundwater monitoring is not required. Human health cleanup levels and ingestion levels from 18 AAC 75.341 will apply at SS007 for soil.

<u>Site SS010</u>

Site SS010, Spill/Leak No. 2 at the former water supply pumphouse (**Figure 4**), is located at Lower Camp, approximately 1 road mile from the terminus of the runway. A pipeline transported water from Snuffy Creek to the pumphouse and then to a 24,000-gallon water storage tank located approximately 100 feet south of the former composite building (USAF, 2005).

A 500-gallon diesel UST was reportedly located on the east side of the pumphouse. Attempts to locate the UST in 1985, 1991, 1995, and 2001 were unsuccessful. In 2005, overburden caused by a landslide, including boulders up to 6 feet in diameter, was removed to expose the concrete pad for the former pumphouse. A large piece of deformed metal, which appeared to be the top of the UST, was located approximately 15 feet northeast of the pumphouse's former foundation. A strong hydrocarbon odor and sheen was detected in saturated soil removed from the top of the metal and in the surrounding soil (USAF, 2005). Water with a sheen and strong hydrocarbon odor appeared to be coming from under the metal. Because obvious contamination was detected while exposing the metal, no field testing was conducted (USAF, 2005). Soil surrounding the UST could not be removed at that time to confirm the presence of the UST due to safety concerns associated with the instability of the slope (USAF, 2005). However, the UST was subsequently removed (Mr. Robert Johnston, personal communication, 10 January 2017).

Also in 2005, a soil sample and a duplicate were collected at Site SS010 at the location shown on Figure 4. A strong hydrocarbon odor was noted during sample collection (USAF, 2005). The soil samples were analyzed for DRO, residual-range organics (RRO), PAHs, and Resource Conservation and Recovery Act (RCRA) metals. DRO was the only analyte detected in the primary and duplicate soil samples at a concentration exceeding its screening criterion. The detected DRO concentrations of 7,570 mg/kg and 8,640 mg/kg exceed the ADEC Method Two migration-to-groundwater criterion of 230 mg/kg (USAF, 2005).

In 2007, soil samples were collected at Site SS010 to evaluate potential impacts to surface water. The results of the soil samples indicated that DRO was present in surface soil near Snuffy Creek at concentrations up to 5,300 mg/kg (USAF, 2009b).







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FIVE-YEAR REVIEW SUMMARY FORM

	SITE IDENTIFICATION			
Site Name: Sites SS002,	SS007, and	SS010, E	Driftwood Bay Radio Relay Station	
EPA ID: AK35700)28644			
Region: 10	State: AK	ζ.	City/County: Unalaska/Aleutians West Census Area	
		SI	TE STATUS	
NPL Status: Non-NPL				
Multiple OUs? Yes		Has the No	site achieved construction completion?	
REVIEW STATUS				
Lead agency: Other Federal Agency [If "Other Federal Agency", enter Agency name]: U.S. Air Force (USAF)				
Author name (Federal or State Project Manager): MWH Americas, Inc. on behalf of the Air Force Civil Engineer Center (AFCEC)				
Author affiliation: Cont	ractor			
Review period: 6/1/2016	5 - 4/28/2017	7		
Date of site inspection:	Date of site inspection: 6/11/2016			
Type of review: Discretionary				
Review number: 1				
Triggering action date: December 2005				
Due date (five years after triggering action date): Not applicable				

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Contaminants of concern (COCs) were identified in soil at Sites SS002, SS007, and SS010. **Table 1** identifies the COCs for the three sites that are the subject of this FYR.

Site	Medium	COCs
SS002	Soil	DRO
	5011	TPH
SS007		DRO
	Soil	TPH
		Benzo(a)pyrene
		Naphthalene
		Phenanthrene
		Pyrene
SS010	Soil	DRO

Notes:

COC – contaminants of concern

DRO - diesel-range organics

TPH – total petroleum hydrocarbons

Risk Summary

A quantitative risk assessment was not performed for Site SS002 because site-specific chemical concentrations from the landfill perimeter did not exceed ADEC Method Two criteria (USAF, 2009b). A quantitative baseline risk assessment was conducted for Sites SS007 and SS010 in 2009. The following subsections summarize the potential human health and ecological receptors, the potentially complete exposure pathways, and the potential ecological and human health risks associated with Sites SS007 and SS010.

Human Health Risk Summary

The only potential human health receptors evaluated in the risk assessment were recreational visitors, and the potential exposure media evaluated were surface water and soil (USAF, 2009b). The primary exposure pathways for human health evaluated were inhalation, incidental surface water or soil ingestion, and dermal contact with contaminated soil or surface water. Groundwater was not considered a likely exposure pathway for recreational visitors since there is no access to it (USAF, 2009b).

Table 2 summarizes the human health risk estimates calculated for Sites SS007 and SS010. The total hazard index and total incremental lifetime cancer risk for both Sites SS007 and SS010 were less than the non-cancer criterion of 1 and the carcinogenic effects criterion of 1×10^{-5} (USAF, 2009b).

Туре	Noncarcinogenic Effects	Carcinogenic Effects			
Criteria	1	1x10 ⁻⁵			
SS007 Surface Soil	SS007 Surface Soil				
Ingestion	<1	4.5x10 ⁻⁸			
Dermal	<1	5.2x10 ⁻⁸			
Inhalation	<1	7.1x10 ⁻¹³			
Total HI and ILCR	<1	1x10 ⁻⁷			
SS010 Surface Soil					
Ingestion	<1	9.9x10 ⁻⁹			
Dermal	NA	1.2x10 ⁻⁸			
Inhalation	<1	1.6x10 ⁻¹³			
Total HI and ILCR	<1	2x10 ⁻⁸			

Table 2: Summary of Noncancer Hazards and Cancer Risks by Site

Notes:

HI – hazard index ILCR – incremental lifetime cancer risk NA – not applicable

The human health risk assessment concluded that contaminant concentrations in soil at Sites SS007 and SS010 do not pose an unacceptable level of risk to human receptors.

Ecological Risk Summary

The ecological risk assessment (ERA) conducted in 2009 evaluated the potential ecological risks from COCs at Sites SS007 and SS010. There were no contaminants of potential ecological concern identified for Site SS010. An ERA was not performed for Site SS002; however, the 2009 ERA determined that there were no ecological receptors at Top Camp, where Site SS002 is located (USAF, 2009b).

Exposure pathways evaluated for Site SS007 include direct contact pathways (i.e., surface water ingestion, incidental soil or sediment ingestion, dermal contact with soil, sediment, or sediment, and inhalation of dust), as well as uptake by biota (i.e., plants and animals) and food chain transfer. PAHs were identified as the primary ecological risk drivers for Site SS007. The Site SS007 hazard quotients for each COC and indicator receptor are summarized in **Table 3**.

Receptor	COC	HQ
Arctic Ground Squirrel	None	0.03
	Naphthalene	30
Masked Shrew	Phenanthrene	300
	Pyrene	500
Least Sandpiper	None	NA
Northern Shrike	None	NA
Sea Otter	Phenanthrene	30
	Pyrene	50

Table 3: Hazard Ouotients and COCs for Indicator Receptors at Si	ite SS007
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Notes:

Bold indicates that the risk estimate exceeds the HQ criterion of 1. COC – contaminant of concern HQ – hazard quotient ILCR – incremental lifetime cancer risk NA – not applicable

The ERA concluded that PAHs in soil at Site SS007 pose unacceptable risks to mammalian receptors (Masked Shrew and Sea Otter). However, the lithology at Site SS007 consists of medium-to-large gravel to cobble, and burrowing mammals would not burrow at the site to the depth of contamination. In addition, the contaminated soil would not be accessible to sea otters. Therefore, the exposure pathway to these ecological receptors is incomplete.

Response Actions

Following is a description of the response that was performed at Site SS007 prior to the 2010 determination of the site remedy. No response actions were performed at Sites SS002 or SS010 prior to remedy selection.

At Site SS007, oiled sand was excavated from the foundations of the two 250,000-gallon ASTs during the 1991 demolition activities (USAF, 2005). The oiled sand was thermally treated and then placed in the Site SS002 landfill. Prior to treatment, a sample of the sand was collected and analyzed for TPH and DRO. TPH and DRO were detected at concentrations of 27,000 mg/kg ad 1,930 mg/kg, respectively (USAF, 2005).

Remedial Action Objectives

Remedial Action Objectives (RAOs) provide a general description of what the cleanup will accomplish. Sites SS002, SS007, and SS010 do not have official Decision Documents, so RAOs have not been identified for these sites.

Selected Remedies

Sites SS002, SS007, and SS010 do not have official Decision Documents. The remedies for these sites were determined through correspondence between the USAF and ADEC. For Site SS002, the

site remedy was documented in the *Preliminary Assessment/Site Inspection for Driftwood Bay RRS* (USAF, 2005), which was approved by the State in a letter dated 19 December 2005. For Sites SS007 and SS010, the site remedies were documented in the *ADEC Determination of Final Compliance for Driftwood Bay* letter (ADEC, 2010). The remedies selected for Sites SS002, SS007, and SS007 are detailed below.

Site SS002

The remedy selected under State law for Site SS002 is institutional controls (ICs) (ADEC, 2005; USAF, 2005). The major components of the selected response actions are as follows:

- Develop an IC Plan and conduct annual IC inspections, beginning in 2015.
- Use geophysics to better define the boundaries of the landfill and survey the landfill boundaries.
- Advance test pits around the landfill perimeter to determine the depth to bedrock and the volume of buried debris.

In addition, the following actions were identified for Site SS002 in order to ensure compliance with ADEC Solid Waste Regulations (18 AAC 60):

- Adequately backfill depressions and grade to promote drainage without erosion;
- Provide sufficient cover to prevent debris eroding from the landfill; and
- Take proper precautions to ensure that asbestos fibers are not released to air or surface water, and install asbestos warning signs.

Site SS007

The remedy selected under State law for Site SS007 is Monitored Natural Attenuation (MNA) with ICs (ADEC, 2010). The major components of the selected response actions are as follows:

• Implement ICs to document the location of residual soil contamination; and

As the ICs are in place, and the previous groundwater monitoring prescribed by ADEC in 2010, is no longer required due to the 18 AAC 75.350 groundwater use determination, the status of Site SS007 should be formerly requested to be Cleanup Complete with ICs.

<u>Site SS010</u>

The remedy selected under State law for Site SS010 is ICs (ADEC, 2010). The major component of the selected response actions is as follows:

• Implement ICs to document the location and extent of residual contamination, limit land use solely to limited/remote recreational use, and document the need to properly manage residual contamination in accordance with applicable regulations.

Site- and COC-specific cleanup levels were not identified for Sites SS002, SS007, and SS010 so the 18 AAC 75 Method Two soil cleanup levels are being used at SS002 and SS010, while soil cleanup levels for ingestion and human health criteria are being used for SS007. **Table 4** summarizes the cleanup levels for site COCs.

Site	Medium	COCs	Cleanup Level	
SS002	Soil	DRO ^I	8,250230 mg/kg	
		TPH (RRO) ^I *	8,300 mg/kg	
		DRO ^I TPH* (RRO) ^I Benzo(a)pyrene ^H	8,250 mg/kg	
SS007	Soil	TPH* (RRO) ^I	8,300 mg/kg	
		Benzo(a)pyrene ^H	0.127 mg/kg	
		Naphthalene ^H	20 mg/kg	
		Phenanthrene ^H	1,900 mg/kg	
		Pyrene ^H	1,900 mg/kg	
SS010	Soil	DRO ^I	8,250 mg/kg	

Table 4: COCs by Site and Cleanup Levels

Notes:

*TPH does not have an approved cleanup level and so the cleanup level for residual-range organics was used because TPH typically represents those constituents of petroleum.

COC – contaminants of concern

DRO – diesel-range organics

^H – 18 AAC 75 – Table B1, Method Two- Soil Cleanup Levels Table (Over 40 Inch Zone, Human Health).

^I- 18 AAC 75 – Table B2, Method Two- Petroleum Hydrocarbon Soil Cleanup Levels (Over 40 Inch Zone, Ingestion).

mg/kg – milligrams per kilogram

mg/L – milligrams per liter

TPH – total petroleum hydrocarbons

Status of Implementation

The remedies for Sites SS002, SS007, and SS010 include ICs. In 2015, an IC Plan was developed for the three sites (USAF, 2016b). The IC Plan for these three sites included the following elements:

- 1. Land Use Controls (LUCs) for each site will be incorporated into the 611th Civil Engineering Squadron LUC Management Plan. (Completed July 2015)
- 2. A Notice of Environmental Contamination (NEC) will be placed in the Alaska Department of Natural Resources' (ADNR) land records. (Planned for 2017)
- 3. Warning signs placed at the boundary of each site will provide contact information for LUC management (USAF, 2016b). (Completed August 2015)

In July 2015, the USAF issued the LUC Management Plan for the Pacific Air Forces Regional Support Center Installation (USAF, 2015b), which includes Driftwood Bay RRS. The Management Plan identifies that there are LUCs in effect at Sites SS002, SS007, and SS010 (USAF, 2015b). The LUC boundary figure from the 2015 Management Plan, which specifies that there are excavation and digging restrictions in place at Sites SS002, SS007, and SS010, is provided in **Appendix B**. The relevant portion of the LUC Management Plan Table A-1, which identifies that LUCs are in effect at Sites SS002, SS007, and SS010, is also included in Appendix B.

The NEC will be filed with ADNR in 2017 (USAF, 2016b). Copies of the notices are provided in **Appendix C**.

The site remedies included the installation of warning signs at Sites SS002, SS007, and SS010. These warning signs were installed in August 2015 (USAF, 2016b). The four warning signs at Site SS002 state the following: "Warning – Any work/dig permit must comply with PACAF Regional Support Center OI 32-7001 Land Use Control Management. Landfill Permit #8921-BA009. Asbestos Waste Disposal Site – Do not breathe dust. Breathing asbestos is hazardous to your health." The three warning signs at Site SS007 and the one warning sign at Site SS010 state the following: "Warning – Any work/dig permit must comply with PACAF Regional Support Center OI 32-7001 Land Use Control Management. Soil and/or water in this area are contaminated" (USAF, 2015a). The warning signs at all three sites also provide contact information for the AFCEC Remedial Project Manager and a figure with the area subject to LUCs identified. The figure on the signs at Site SS002 also identify the area of the landfill.

The first annual IC inspections were conducted at Sites SS002, SS007, and SS010 in 2015 (USAF, 2016b). Specific findings of the IC inspections are discussed in Section IV, Site Inspections. **Table 5** summarizes the IC implementation information for the three subject sites, including compliance with obligations such as LTM and IC inspections. All IC obligations were met during the period of this FYR.

Site	Date IC Record Established	Date Cleanup Complete Determination Issued	Compliance with IC Obligations*
SS002	July 2015		August 2015 IC inspection; June 2016 IC inspection
SS007	July 2015		August 2015 LTM and IC inspection; June 2016 LTM and IC inspection
SS010	July 2015		August 2015 IC inspection; June 2016 IC inspection

Table 5: IC Implementation Status for Sites SS002, SS007, and SS010

Notes:

*IC inspections are visual site inspections. LTM includes groundwater sampling.

IC – institutional control

LTM – long-term monitoring – LTM is no longer required due to the ADEC August 2017 18 AAC 75 Groundwater Determination (Appendix E).

The following subsections detail site-specific information on remedy implementation.

Site SS002

The Site SS002 remedy consists of ICs. Details on the ICs implemented at Site SS002 are provided above. As this site is a closed, permitted landfill, compliance with 18 AAC 60 maintenance and inspection requirements is also necessary.

In August 2015, seven monuments were located that demarcate the extent of the demolition debris landfill at Site SS002 (USAF, 2016b). Locations of each monument were recorded with a global positioning system.

Site SS007

The Site SS007 remedy is ICs. Details on the ICs implemented at Site SS007 are provided above.

As the ADEC 18 AAC 75.350 Groundwater Determination was made in August 2017 (Appendix E), LTM of groundwater at the site is no longer required as part of the remedy.

<u>Site SS010</u>

The Site SS010 remedy consists of ICs. Details on the ICs implemented at Site SS010 are provided above. In 2010, ADEC recommended Site SS010 for "Cleanup Complete with ICs" status (ADEC, 2010).

IC Summary Table

Table 6 summarizes the planned or implemented ICs for each of the three subject sites, including the media and or engineered controls, the IC objectives, and the instrument of implementation along with date.

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date
Warning signs are in place, in accordance with the IC Plan.	Yes	SS002, SS007, and SS010	Notify site visitors of the presence of onsite contaminants and provide contact information for IC management	SS002 – four warning signs; SS007 – three warning signs; SS010 – one warning sign; all installed August 2015
Excavation and digging restrictions are in place to prevent exposure to onsite contamination.	Yes	SS002 and SS010	Limit human exposure to contaminants by restricting site use and limiting access and exposure to onsite contaminants	Land Use Control Management Plan for the Pacific Air Forces Regional Support Center Installation, 2015
Excavation and digging restrictions are in place to prevent exposure to onsite contamination.	Yes	SS007	Limit human exposure to contaminants by restricting site use and limiting access and exposure to onsite contaminants	Land Use Control Management Plan for the Pacific Air Forces Regional Support Center Installation, 2015

Table 6: Summary of Planned and/or Implemented ICs

Notes: IC – institutional control LTM – long-term monitoring

Systems Operations/Operation & Maintenance

There are no systems operating at Sites SS002, SS007, or SS010. No operations & maintenance activities were conducted at these sites during the period of this FYR.

III. PROGRESS SINCE THE LAST REVIEW

This is the first FYR for Sites SS002, SS007, and SS010 at the Driftwood Bay RRS.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by newspaper posting in *The Bristol Bay Times* on August 25, 2016, stating that there was a FYR and inviting the public to submit any comments to the USAF (**Appendix D**). However, no public comments were received in response to the newspaper posting. The results of the FYR and the report will be made available in the Driftwood Bay RRS Administrative Record, which is available online at the following location: <u>http://afcec.publicadmin-record.us.af.mil/</u>.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The following parties were interviewed on the dates specified as part of the FYR process:

- Mr. Robert Johnston, AFCEC Restoration Project Manager; 10 January 2017; and
- Mr. Louis Howard, ADEC Environmental Program Specialist; 9 January 2017.

In addition, comments were received electronically from Mr. David Gregory, Lands Manager for the Ounalashka Corporation, on 19 January 2017. The results of the interviews that were conducted and correspondence received are summarized below, and complete records are provided in **Appendix E**.

Mr. Johnston was not aware of any IC breaches at any of the Driftwood Bay RRS sites. He confirmed that the ICs are being enforced and that the enforcement plan consists of reporting any breaches to ADEC and then making necessary repairs.

Mr. Howard stated that the ICs at all three sites were functioning as expected. He confirmed that IC performance reports are submitted to ADEC as required. However, Mr. Howard noted that landfill debris protruding through the cap and subsidence observed at Site SS002 in 2015 should be addressed immediately and documented in a report to ADEC.

Neither Mr. Johnston nor Mr. Howard was aware of any problems with remedy implementation, trespassing, or community concerns regarding these sites. Mr. Gregory indicated that trespassing may occur at the Driftwood Bay LRRS, as people hike and camp all over the island. However, trespassing has not been documented at Sites SS002, SS007, or SS010.

Mr. Gregory expressed concern regarding contamination that remains on the portions of the Driftwood LRRS for which the Ounalashka Corporation has a top-filed selection under the Alaska National Interests Land Conservation Act. He believes that the remote location and difficulty accessing the Driftwood Bay LRRS have prevented further cleanup. He stated that the Ounalashka Corporation is not in favor of ICs being placed upon their lands and believes that the land should be free of contaminants when returned to them. He would like to see a funding plan in place for the Driftwood Bay LRRS so that contamination at the installation does not affect potential future development by the Ounalashka Corporation. Although they have no specific plans for these lands at this time, Mr. Gregory wrote that the Ounalashka Corporation does not want the encumbrance of the contamination to be left for future shareholders to resolve.

Data Review

Data collected at Sites SS002, SS007, and SS010 from 2011 through 2016 were reviewed as part of this FYR. No analytical data were collected at Sites SS002 or SS010 during the period of this FYR. The following sections summarize the data review conducted for Site SS007.

During the period of this FYR, groundwater samples were collected at Site SS007 in 2015 and 2016. In 2015, six well points were installed, but only four well points (WP-01 and WP-04 through WP-06) contained sufficient water for sampling. In 2016, samples were collected from all six well points at Site SS007. Groundwater samples from the wells points were analyzed for DRO.

In 2015, DRO was detected at all four well points at concentrations above the 18 AAC 75 Method Two groundwater cleanup criterion of 1.5 mg/L, with concentrations ranging from 3.75 mg/L to 13.2 mg/L (USAF, 2016c). The 2015 sampling event was the first in which all DRO concentrations exceeded the cleanup level. In 2016, DRO concentrations exceeded the ADEC cleanup level only in the sample from WP-06 and the duplicate sample from WP-04, with a maximum detected DRO concentration of 3.86 mg/L (USAF, 2016d). The analytical results are summarized in **Table 7**.

T 4	DRO Concentration (mg/L)		
Location	August 2015	June 2016	
WP-01	10.5	0.832	
WP-02	NS	0.365 J	
WP-03	NS	0.975	
	13.2	1.46	
W F-04	13.4	1.55	
WP-05	4.4	0.956	
WP-06	3.75	3.86	

Table 7: Groundwater	Analytical F	Results at	t Site	SS007
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Key:

Sources: USAF, 2016c and 2016d

Bold indicates that the detected concentration exceeds the ADEC Cleanup Level of 1.5 mg/L.

^a A duplicate sample was collected from well point WP-04.

ADEC – Alaska Department of Environmental Conservation

DRO – Diesel Range Organics by Alaska State Method AK102

mg/L - milligrams per liter

NS – not sampled due to insufficient groundwater

The 2016 monitoring event represented a decrease in concentrations of DRO for Site SS007, which is likely in part due to the higher groundwater levels at the site (USAF, 2016d).

Based on the August 16, 2017 ADEC 18 AAC 75.350 Groundwater Determination (Appendix E), no additional groundwater monitoring shall be conducted. The remedy at Site SS007 is limited to ICs only based on this determination.

Site Inspection

The inspections of Sites SS002, SS007, and SS010 were conducted on June 11, 2016. The purpose of the inspections was to assess the protectiveness of the remedies. The results of the site inspections are summarized below. The site inspection forms and photographic documentation are provided in **Appendix F**.

During the 2015 IC inspection, landfill debris was observed protruding through the variable thickness landfill cover at Site SS002 and subsidence was noted near the water tank (USAF, 2016b). In addition, recreational users (all-terrain vehicle users) and wildlife (a fox) were observed at Site SS002 (USAF, 2016b). In 2016, subsidence of the landfill cover was observed at several areas, most notably near the water tank, as in 2015. The 2016 inspection identified substantional erosion in ephemeral overland drainage tracts which, in several locations, cross the entire length of the landfill. Each drainage tracts is characterized by subsided land surface, exposed landfill debris, and minimal vegetative cover. The condition of the landfill cap is the only issue that affects the protectiveness of the remedy identified at Site SS002.

At Site SS007, the monitoring wells were noted to be in good condition and there were no signs of unauthorized site access. The LUC signage was also observed to be in good condition at Site SS007. At Site SS010, slope stability continues to create a site access issue. The area upslope from Site SS010 continues to subside and be actively be eroded, and the site appears to be an area of deposition. No issues were found during the 2015 IC inspections or the 2016 site inspections at Sites SS007 or SS010 that would affect the protectiveness of their remedies. These two sites require no corrective action, and no changes to the IC Plan are warranted.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

The review of documents, site data, and the results of the site inspections indicates that the remedies at Sites SS007 and SS010 are functioning as intended. The review of documents, site data, and the results of the site inspection indicates that the remedy at Site SS002 is not functioning as intended due to issues with the integrity of the landfill cover.

The LUCs for Sites SS002, SS007, and SS010 are documented in the LUC Management Plan for the Pacific Air Forces Regional Support Center Installation (USAF, 2015b). The IC Plan has been implemented, the ICs are inspected annually, no breaches have occurred, and reports are submitted to ADEC. In addition, warning signs are in place and in good condition at all three sites. However, the remedy has not been fully implemented because the NEC for all three sites has not yet been filed in the ADNR's land records. The NECs must be filed in order to ensure the long-term protectiveness of the site remedies.

For Site SS002, deficiencies, including protruding debris and subsidence, were documented in the landfill cap. This issue affects the protectiveness of the Site SS002 remedy. Although ICs are in place to minimize exposure to onsite contaminants, corrective actions to repair the landfill cover and restore its integrity are required.

For Site SS007, groundwater LTM was initiated at the site in 2015. The 2016 monitoring event represented a decrease in concentrations of DRO for Site SS007. Groundwater at Site SS007 is shallow and discharges into the adjacent Snuffy Creek and Driftwood Bay, but adverse impacts from Site SS007 to surface waters have not been documented. In 2017, ADEC agreed that groundwater need not be considered a future potential drinking water source under 18 AAC 75.350 (Appendix E). Surface water appears not to be impacted and ceasing groundwater monitoring will not impact human health or the environment at SS007.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

The exposure assumptions used at the time of the remedy selection are still valid. RAOs were not established for these sites. Since the remedies for Sites SS002, SS007, and SS010 were determined, ADEC issued revised soil cleanup levels, which are risk-based values that incorporate updates to toxicity data. Under the NCP, if a new requirement is promulgated after the ROD is signed and the requirement is determined to be applicable or relevant and appropriate, the remedy should be examined in light of the new requirement to ensure that the remedy is still protective. These sites do not have official decision documents. In addition, cleanup standards were not specified during remedy selection for Sites SS002, SS007, and SS010; therefore, the cleanup levels are assumed to be the newly promulgated standards.

There are no changes to the exposure pathways at these three sites. There have been no changes in the physical conditions of Sites SS007 or SS010 that would affect the protectiveness of the remedy. The cap at Site SS002 requires repairs to cover protruding debris and correct subsidience. These deficiencies in the landfill cover are an issue that affects the protectiveness of the Site SS002 remedy.
QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

No additional information has been identified that calls into question the protectiveness of the remedies for Sites SS002, SS007, or SS010. However, the August 16, 2017 ADEC 18 AAC 75.350 groundwater determination concurring that groundwater is not to be considered a future potential drinking water source at Site SS007, eliniates MNA through LTM as a remedy. This leaves ICs at SS002, SS002, and SS010 as the singular remediy for each site.

VI. ISSUES/RECOMMENDATIONS

The following issues that affect the protectiveness of the remedies at Sites SS002, SS007, and SS010 were identified.

Issues/Recommendations						
Issues Identified in	the Five-Year Revie	ew:				
OU(s): SS002	Issue Category: Institutional Controls					
	Issue: Deficiencies, including protruding debris and subsidence, were observed at the Site SS002 landfill cap.					
	Recommendation: Perform landfill cap maintenance to correct cover subsidence and address debris protruding through the cover.					
Affect Current Protectiveness	Affect Future ProtectivenessParty ResponsibleOversight PartyMilestone Date					
Yes	Yes	USAF	ADEC	2017		

Site(s): SS002,	Issue Category: Institutional Controls					
SS007, and SS010	Issue: The NECs for Sites SS002, SS007, and SS010 have not been filed in ADNR's' land records.					
	Recommendation: The USAF should file the NECs in order to fully implement the ICs, in accordance with the ROD.					
Affect Current Protectiveness	Affect Future ProtectivenessParty ResponsibleOversight PartyMilestone I					
No	Yes	USAF	State	12/29/2017		

This FYR identified the following recommendations that may improve performance of the remedy but do not affect current and/or future protectiveness:

- The Ounalashka Corporation has concerns regarding ICs being used at the Driftwood Bay LRRS and the impact of residual contamination on their future development plans. The USAF should reach out to the Ounalashka Corporation to discuss these concerns.
- In their 2010 determination letter, ADEC recommended Site SS010 for "Cleanup Complete with ICs" status. The USAF should request this status change for Site SS010, as the site status is listed as "open" in the ADEC Contaminated Sites Database (ADEC, 2016a).

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VII. PROTECTIVENESS STATEMENT

Protectiveness Statements						
Site: Site SS002	Protectiveness Determination: Not Protective	Planned Addendum Completion Date: Not applicable				
<i>Protectiveness Statement:</i> The USAF has determined that the remedy at Site SS002 is not protective of human health and the environment due to noted deficiencies in the landfill cover. Debris is protruding through the cap, and subsidence and erosion have been documented. The landfill cover requires corrective action in order to restore the protectiveness of the Site SS002 remedy. However, ICs are in place to minimize exposures to onsite contaminants and warning signs are present at the site. In order for the remedy to be protective in the long-term after correction of these deficiencies, a NEC must be filed in the ADNR's land records to ensure protectiveness.						
	Protectiveness Statements					
Site: Site SS007	Protectiveness Determination: Short-term Protective	Planned Addendum Completion Date: Not applicable				
<i>Protectiveness Statement:</i> The remedy at Site SS007 is currently protective of human health and the environment. There are no immediate threats from Site SS007, and the remedy is being implemented as planned. ICs are in place and effective The Site SS007 remedy is protective because ICs are in place. However, in order for the remedy to be protective in the long-term, a NEC must be filed in theADNR's land records to ensure protectiveness.						
	Protectiveness Statements					
Site: Site SS010	Protectiveness Determination: Short-term Protective	Planned Addendum Completion Date: Not applicable				
<i>Protectiveness Statement</i> environment. There are r planned. ICs are in place term, a NEC must be file	t: The remedy at Site SS010 is currently no immediate threats from Site SS010, and and effective. However, in order for the d in the ADNR's land records to ensure p	protective of human health and the the remedy is being implemented as remedy to be protective in the long- rotectiveness.				

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VIII. NEXT REVIEW

The next FYR report for Sites SS002, SS007, and SS010 is required 5 years from the USAF signature date on this FYR.

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APPENDIX A REFERENCE LIST

- Alaska Department of Environmental Conservation (ADEC), 2005. Draft Report Preliminary Assessment/Site Investigation, Driftwood Bay RRS, Alaska. December.
- ADEC, 2010. ADEC Determination of Final Compliance for Driftwood Bay Radio Relay Station (RRS) Sites. February.
- ADEC, 2016a. Contaminated Sites Search: Driftwood Radio Relay Station, ADEC Division of Spill Prevention and Response, Contaminated Sites Program Database. Available online: http://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search?Search=True&TotalCount =0&SiteName=Driftwood&ArchivedReckey=&HazardID=&LUSTEventID=&Status=&SiteT ypeID=&Address=&CityName=&ZipCodeID=&BoroughID=&FileNumber=&LUSTOnly=fa lse&PageNumber=1&ItemsPerPage=10
- ADEC, 2016b. 18 AAC 75 Oil and Other Hazardous Substances Pollution Control Regulations, Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances. November 6.
- ADEC, 2017. ADEC 18 AAC 75.250 Determination for SS007 at Driftwood Bay Radion Relay Station (RRS) Site. August.
- US Air Force (USAF), 1996. Final Preliminary Assessment/Site Inspection Radio Relay Station Driftwood Bay, Unalaska Island, Alaska. January.
- USAF, 2005. Final Preliminary Assessment/Site Inspection, Driftwood Bay RRA, Alaska. December.
- USAF, 2009a. Remedial Investigation Report, Driftwood Bay Radio Relay Station, Driftwood Bay, Alaska. September.
- USAF, 2009b. Risk Assessment Report, Driftwood Bay Radio Relay Station, Driftwood Bay, Alaska. September.
- USAF, 2011. Final Feasibility Study, Driftwood Bay Radio Relay Station, Unalaska Island, Alaska. July.
- USAF, 2015a. Final Remedial Action Work Plan, Remedy Implementation at the Former Driftwood Bay Radio Relay Station, Alaska. July.
- USAF, 2015b. Land Use Control Management Plan, Pacific Air Forces Regional Support Center Installations. July.
- USAF, 2016a. Final Follow-on 2016 Remedial Action Work Plan for Remedy Implementation at the Former Driftwood Bay Radio Relay Station, Alaska. April.
- USAF, 2016b. Final Institutional Controls Reports for the Former Driftwood Bay Radio Relay Station, Alaska. April.
- USAF, 2016c. Final Long-Term Groundwater Monitoring Report for the Driftwood Bay Radio Relay Station, Alaska. April.
- USAF, 2016d. 2016 Long-Term Groundwater Monitoring Report for the Driftwood Bay Radio Relay Station, Alaska. November.

US Environmental Protection Agency (EPA), 2007. USAF Driftwood Bay AFS aka USAF DEW Line Site Driftwood Bay; USAF Driftwood Bay WACS site; and USAF Driftwood Bay RRS. July.

APPENDIX B

LAND USE CONTROL BOUNDARY FIGURE AND DESCRIPTIONS FROM THE LAND USE CONTROL MANAGEMENT PLAN, JULY 2015





- Notes: 1. RRS = Radio Relay Station. 2. Other data from 611th GeoBase for Driftwood Bay RRS. Data could be incomplete and are of unknown accuracy. 3. Sites SS002, SS007, and SS010 do not have an official decision document. 4. Data compared in LITM Zong 2N, WCS84, Materia 4. Data are rendered in UTM Zone 3N, WGS84, Meters.
- For more detailed land use restriction information, see individual site summaries.

FIGURE 2-11

Installation Map - Driftwood Bay RRS Land Use Control Management Plan 2015 Pacific Air Forces Regional Support Center Installations Joint Base Elmendorf-Richardson, Alaska

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TABLE A-1

Status of AFCEC/OLAR ERP and Landfill Sites at Alaska, Hawaii, Johnston Atoll and Wake Island Airfield Installations Land Use Control Management Plan 2014 for AFCEC/OLAR, JBER, Alaska

Installation	Site Name	Site ID	ERP Sites with LUCs in Effect	NFRAP or NFA ERP Sites	ERP Remedial Investigation or Remedial Action On-going	Landfill or Compliance Landfill (No ERP Status)	Site Type - ERP, ERP/LF or LF- Compliance
Cape Romanzof LRRS	Lower Tram Terminal Area	SS017	х		Х		ERP
Cape Romanzof LRRS	Spill Site 3/POL Fill Stand	ST009	Х				ERP
Cape Romanzof LRRS	Capre Romanzof LRRS Landfill	SWGLPLRRS-13-03				Х	LF-Compliance
Cold Bay LRRS	Landfill/Gravel Pit	LF002	Х				ERP/LF
Cold Bay LRRS	White Alice Communications System	OT001	Х				ERP
Cold Bay LRRS	Road Oiling	OT003		Х			ERP
Cold Bay LRRS	1978 Spill/Leak	OT004		Х			ERP
Cold Bay LRRS	POL Storage Area	ST005	Х				ERP
Driftwood Bay	Burned Battery Area	DA013		х	х		ERP
Driftwood Bay	Septic Tank and Discharge Pipe	FL009		х			ERP
Driftwood Bay	Old Disposal Area	LF006		х	Х		ERP/LF
Driftwood Bay	Former Composite Bldg and Antenna Arrays	OT001		х	Х		ERP
Driftwood Bay	1991 Landfill	SS002	х				ERP
Driftwood Bay	Former Drum Storage Area	SS004		х			ERP
Driftwood Bay	Former AST at Runway	SS005		Х			ERP
Driftwood Bay	Former Fuel Storage Area at Beach	SS007	х				ERP
Driftwood Bay	Pipeline	SS008		х			ERP
Driftwood Bay	Former Water Supply Pumphouse	SS010	Х				ERP
Driftwood Bay	Former Lighting Vault at Runway	SS011		Х			ERP
Driftwood Bay	Heavy Equipment Storage	SS014		х			ERP
Driftwood Bay	Former USTs near lighting vault	TU012		Х			ERP
Driftwood Bay	Former Floor Drain Pipeline	WP003			Х		ERP
Duncan Canal	Former RRS Dump Site	DA001			Х		ERP
Duncan Canal	Barrel Dump Site	SS001	Х				ERP
Duncan Canal	Generator Building	SS002	х	1		1	ERP
Duncan Canal	Fuel Pumphouse	SS003	х				ERP
Duncan Canal	Drum Storage and Disposal Site	SS004			Х		ERP

APPENDIX C NOTICES OF ENVIRONMENTAL CONTAMINATION

Notice of Environmental Contamination – Site SS002

NOTICE OF ENVIRONMENTAL CONTAMINATION

Recording District: Aleutian

As required by the Alaska Department of Environmental Conservation, Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force, Grantor, as the owner of the subject property, hereby provides public notice that the property located at: Northing 1,209,324 feet, Easting 5,233,728 feet (Zone 10 Alaska State Plane), Top Camp adjacent to the Composite Building Foundation, Unalaska Island, Alaska, 99692, and more particularly described as follows:

T. 72 S., R. 119 W., Section 6, Tract 40

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AA 75, Article 3, as amended June 17, 2015. This release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database at http://www.dec.state.ak.us/spar/csp/db_search.htm under Hazard ID number 88.

ADEC reviewed and approved, subject to this and other institutional controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with 18 AAC 75.325 – 390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though a permitted and closed landfill is present at the site.

Attached is a site survey or diagram drawn to scale that shows the property boundaries and locations of asbestos warning signs posted at the site.

Notification to the ADEC is required for approval prior to commencing any subsurface excavation or digging activities within the boundaries of Tract 40, as required by 18AAC 75.325(i). Any work/dig permit must comply with Pacific Air Force (PACAF) Center OI 32-7001 Land Use Control Management.

In the event that the remaining landfill debris becomes accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

Pursuant to 18 AAC 75.325(i)(1) and (2), DEC approval is required prior to moving soil or groundwater that is, or has been, subject to the cleanup rules found at 18 AAC 75.325-.370. At this site, in the future, if soil is removed from the site or groundwater is brought to the surface it must be characterized and managed following regulations applicable at that time.

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NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN DRIFTWOOD BAY, UNALASKA ISLAND, ALASKA

TRACT 40 AREA SUBJECT TO RESTRICTED LAND USE DUE TO ENVIRONMENTAL CONTAMINATION ATTACHMENT

Notice of Environmental Contamination – Site SS007

NOTICE OF ENVIRONMENTAL CONTAMINATION

Recording District: Aleutian

As required by the Alaska Department of Environmental Conservation, Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force, Grantor, as the owner of the subject property, hereby provides public notice that the property located at: Northing 1,211,987 feet, Easting 5,246,235 feet (Zone 10 Alaska State Plane), East of the Airfield Runway, Unalaska Island, Alaska, 99692, and more particularly described as follows:

T. 72 S., R. 119 W., Section 3, Tract 37.

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AA 75, Article 3, as amended June 17, 2015. This release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database at http://www.dec.state.ak.us/spar/csp/db_search.htm under Hazard ID number 96.

ADEC reviewed and approved, subject to this and other institutional controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with 18 AAC 75.325 – 390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though residual fuel contaminated soil and/or groundwater exists on-site. Further cleanup was determined to be impracticable as a result of findings generated documented in the Site Characterization Report for Driftwood Bay RRS, dated September 2009.

Attached is a site survey or diagram drawn to scale that shows the property boundaries, the area which was addressed during the 2015 Remedy Implementation at Site SS007, and locations of warning signs posted at the site.

Notification to the ADEC is required for approval prior to commencing any subsurface excavation or digging activities within the boundaries of Tract 37, as required by 18AAC 75.325(i). Any work/dig permit must comply with Pacific Air Force (PACAF) Center OI 32-7001 Land Use Control Management.

In the event that the remaining contaminated soil or groundwater becomes accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

Pursuant to 18 AAC 75.325(i)(1) and (2), DEC approval is required prior to moving soil or groundwater that is, or has been, subject to the cleanup rules found at 18 AAC 75.325-.370. At this site, in the future, if soil is removed from the site or groundwater is brought to the surface it must be characterized and managed following regulations applicable at that time.

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138.77 238.80 339.88 438.96	18	17	16 UNALASKA	1-038.79	14	13
1-39.05 2-39.13 3-39.21 4-39.30	19	20	21	22 ISLAND	23 555 George 40 2113 10 2112 525 Earrit	24
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NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN DRIFTWOOD BAY, UNALASKA ISLAND, ALASKA

TRACT 37 AREA SUBJECT TO RESTRICTED LAND USE DUE TO ENVIRONMENTAL CONTAMINATION ATTACHMENT

1

Notice of Environmental Contamination – Site SS010

NOTICE OF ENVIRONMENTAL CONTAMINATION

Recording District: Aleutian

As required by the Alaska Department of Environmental Conservation, Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force, Grantor, as the owner of the subject property, hereby provides public notice that the property located at: Northing 1,207,773 feet, Easting 5,242,384 feet (Zone 10 Alaska State Plane), Along the road to High Camp, Unalaska Island, Alaska, 99692, and more particularly described as follows:

T. 72 S., R. 119 W., Section 4, 150 foot Air Force Right-of-Way, A034155.

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AA 75, Article 3, as amended June 17, 2015. This release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database at http://www.dec.state.ak.us/spar/csp/db_search.htm under Hazard ID number 131.

ADEC reviewed and approved, subject to this and other institutional controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with 18 AAC 75.325 – 390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though residual fuel contaminated soil and/or solvent contaminated groundwater exists on-site. Further cleanup was determined to be impracticable as a result of findings of the Site Characterization Report for Driftwood Bay RRS, dated September 2009.

Attached is a site survey or diagram drawn to scale that shows the property boundaries, the area which was addressed during the 2015 Remedy Implementation at Site SS010, and locations of warning signs posted at the site.

Notification to the ADEC is required for approval prior to commencing any subsurface excavation or digging activities within the boundaries of Tract 38A and Tract 38B, as required by 18AAC 75.325(i). Any work/dig permit must comply with Pacific Air Force (PACAF) Center OI 32-7001 Land Use Control Management.

In the event that the remaining contaminated soil or groundwater becomes accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

Pursuant to 18 AAC 75.325(i)(1) and (2), DEC approval is required prior to moving soil or groundwater that is, or has been, subject to the cleanup rules found at 18 AAC 75.325-.370. At this site, in the future, if soil is removed from the site or groundwater is brought to the surface it must be characterized and managed following regulations applicable at that time.

)	4500'				
2 18.49 3-38.14 4-38.22 5-38.30	7-30.35 (5-69.65 7-30.35 (5-69.65 7-30.35 (5-69.65 7-40 114.78 7.86	ACIANS TSO 5 ASH 1936 A034155 USAF 150' ROW FROM CENTERLINE	5-308.57 A24435 297 145.88 195.80 195.80 4	12.61 12.61 12.61 14.61 16.67 16.77 17.77 17	2	1
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17-FEB-2016 14:22

TIME:

NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN DRIFTWOOD BAY, UNALASKA ISLAND, ALASKA

ATTACHMENT

APPENDIX D COMMUNITY INVOLVEMENT MATERIALS

Bristol Bay Times "Dutch Harbor Fisherman

CASE/PO/AIO: MWH Americas Inc

AD# or identifier: Pacific Air Forces Regional Support Cntr Environmental Restore Program 5-yr Review Driftwood Bay RRS REMIT TO:

Alaska Media, LLC P.O. Box 241582 Anchorage, AK 99524 Ph: (907) 770-0820 Fax: (907) 770-0822

INVOICE(S): 18266

AFFIDAVIT OF PUBLICATION				
UNITED STATES OF AMERICA STATE OF ALASKA, THIRD DISTRICT BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC THIS DAY PERSONALLY APPEARED <u>Tanny Walker</u> WHO, BEING FIRST DULY SWORN, ACCORDING TO LAW, SAYS THAT S/HE IS <u>General Manager</u> OF <u>The Bristol</u> <u>Bay Times/Dutch Harbor Fisherman</u> PUBLISHED AT <u>500</u> <u>W International Airport Rd, Ste F, Anchorage, AK, IN</u> SAID THIRD DISTRICT AND STATE OF ALASKA AND THAT THE ADVERTISEMENT, OF WHICH THE ANNEXED OR ATTACHED IS A TRUE COPY, WHICH WAS PUBLISHED IN SAID PUBLICATION8/25/16 AND THEREAFTER FOR A TOTAL OF _1 CONSECUTIVE ISSUE(S), THE LAST PUBLICATION APPEARING ON 8/25/16	ATTACH PROOF OF PUBLICATION HERE			
ANNY WALKER ENERAL MANAGER UBSCRIBED AND SWORN BEFORE ME THIS 25th AY OF HUGUST, 20 16 HUGUST, 20 16				
STATE OF ALASKA NOTARY PUBLIC Kathleen L. Seward My Commission Explose Feb 1, 2017				

Despite distance, Seward has become an Arctic port

BY YERETH ROSEN

SEWARD — In this picturesque Alaska port town more than 400 miles south of the Arctic Circle, two big symbols of U.S. Arctic

ambilion loamed over the harbor. Docked side by side, both preparing to head north, were the cutter Healy, the ordy polar-class U.S. Coast Guard icebreaker working in the Arctic, and the Crystal working in the Arctic, and the Crystal Serenity, the huge luxrury cruise ship des-tined for an unprecedented journey through newly ice-sparse waters of the Northwesi Passage over the top of Canida, Both ships paths converged in Seward, a tourist destination, fishing center and recreation hub that is emerging as a support center and port for Arctic marine and science activities.

The high-profile Crystal Scientity cruise is drawing the world's attention to Seward's Arctic connections, said local City Manager Jim Hunt. The ship, its lights aglow, depart-ed Seward's harbor Tuesday night for a month-long journey that will end in the Port of New York.

Seward to New York, in all the press that's priceless," Hunt said. Other Arctic connections in Seward, a

city with a moderate climate and a hush, uan-Arctic forest setting, have been build-ing for years, though with less fanfare. The small city, in addition to boasting a

full-service deepwater port, is home to branch offices of government and academic institutions studying marine science with projects extending to the Arctic.

It is the homeport of the Sikuliaq, a new National Science Foundation-owned, University of Alaska Fairbanks-operated research vessel designed to sail through the edge of the Arctic sea ice. It is the headquarters of Kenai Fjords National Park, where scientists are doing research on changing glaciers and other climate-related subjects. It is the site of the nation's only Coast Guardcertified training center for polar ice navigation. It is the home of the Alaska ScaLife Center, where scientists are studying coldwater ecosystems and the creatures that dwell in them.

Seward's role as, in effect, an Arctic port is the product of both screndipity and deliber-ate strategy, Hunt said.

The deep and ice-free waters of Resurrection Bay, which have long made Seward a logical port site, factor in, he said So do the city's convenient geographic loca-tion and transportation links, which put Seward about two-hour drive or an easy rail or air trip from Anchorage, he said.

"We are the last place in Alaska before you turn the corner and go past Homer that you can operate on your own schedule ecause we have the road, the railway and the airport," he said. Seward's Arctic links have also been

strengthened by policy decisions, Hunt said. Seward is improving its harbor, put-ting in a breakwater to enable more service to big vessels, including those headed for the Arctic Ocean. The city also lobbled the Alaska congressional delegation to include Seward in legislation about revenue-sharing from potential Arctic offshore oil development, he said,

In the absence of a U.S. Arctic Ocean port. In the absence of a U.S. Actic Cosan port, several non-Actic ports are doing Arctic-related business. Each has advantages and drawbacks. Seattle, the homeport of the Healy, has been a staging area, as has Unalaska/Dutch Harbor, the nation's top-relumentariacal and volume seafood port.

Kodiak, the headquarters of a major Coast Guard complex, has been used as a base of Arctic air support. Unlike the other ports, Nome, just south of Bering Strait, is geo-graphically close to the Arctic — about 140 miles away — but its shallow water cannot accommodate deep-draft vessels like the

Crystal Serie usep-and vesses nee nee Crystal Serie ity. The "beauty" of the emerging Arctic-related marine business is that the part sites are complementary. Hunt said, "We're not in competition with other ports because no one port can do it all," he said.

Some mariners on Arctic-bound ships have gained their skills at the Alaska Vocational Training and Education Center, a vocational educational school in operation for decades in Seward. A portion of the AVTEC campus is devoted to maritime

training, and course offerings include a new program in ice navigation. It is the only Coast Guard-certified polar

navigation training center in the United States, with standards meeting the new inter-national Polar Code, though there are equivalent centers in Canada, Norway and probably Russia, said instructor Mike Angove.

The ice-navigation program was launched when Royal Dutch Shell was on the cusp of what appeared to be the start of a long offshore Arctic oil development pro-gram, Angove said. Mariners hired for Shell's operation needed and received training in Seward. Shell abandoned its oil exploration pro-

gram, but the ice-navigation instruction continues. When the Healy stopped in contraces, when the real stopped in town, for example, some junior crew mem-bers spent two days in the AVTEC mack ship bridges, where they practiced ice navi-gation using simulators. Putting their hands on the controls was "stuff that a junior offi-cer, their first year, wouldn't get to do" aboard the real ship, Angove sold. The instructional facilities are now being

upgraded. The center has three mock bridges, and the upgrade will allow two of them to offer full 360-degree imagery. Angove said. Students will also be able to use the simulators in connection with each other. replicating situations where ships are traveling together, he said. A few blocks away from the Maritime

Training Center, a de facto science campus is in business on the downtown Seward waterfront

The Alaska SeaLife Center, a combination tourist attraction and research facility, is edged by buildings housing the University of Alaska Fairbanks' Seward Marine Center and offices used by the National Marine **Fisheries** Service

The SeaLife Center, which in its early

years focused on marine manimals and sea-birds of the Gulf of Alaska region, has branched out to projects studying the Bering Sea and locations north. That is deliberate, said Markus Horning, the center's science director.

"Even though we are not physically locat-ed in the Arctic, we are a galeway," Horning said

He is hoping to expand the center's work into more study of fish, and he has ambitions for a program to monitor Pacific sleeper sharks, a species of interest to him and one that is now established in Alaska's Arctic waters.

Some current denizens of the SeaLife Center hail from the Arctic. The center serves as a rehabilitation site for ailing marine mammals, and has served that role for animals found as far north as Barrow; in the past, wairus calves were sent from there to the center. Now there are some ice seals who were rescued after they were abandoned as pups, some with their umbilical cords still attached. The rescued seals, once taken from their

home habitat, cannot be returned to the wild. They are now part of a project being conduct-ed by the Seal ife center and the University of California Santa Cruz to learn more about the physiology of ice seals and their potential

responses to environmental changes. The scientists are studying metabolism, energy needs and other characteristics as the seals grow and pass through various life cycles, said Colleen Reichmuth of the Santa Cruz campus, the project's principal inves-tigator. The information will be important as Arctic sea ice dwindles and as seals encounter new problems, such as the still-mysterious 2011 die-off that has been desig-nated by the U.S. National Oceanic and Atmospheric Administration as an "unusual mortality event."

Public Notice

Pacific Air Forces Regional Support Center Environmental Restoration Program Five-Year Review Driftwood Bay RRS

Public Notice - The Pacific Air Forces (PACAF) Environmental Restoration Program Public value – The Pacific All Police (PACAP) Environmental Resolution (Pacific announces the beginning of the Five-Year Review process for Diffwood Bay Radio Relay Station (RRS), Alaska. This process will document whether the remedies implemented at Sites SS002 (1991 Landfill), SS007 (Former Fuel Storage Area at Beach), and SS010 (Former Water Supply Pumphouse) remain protective of human health and the environment. The remedy selected for Sites SS002 and SS010 under Alaska State regulations is Institutional Controls (ICs) and the remedy selected for Site SS007 is Monitored Natural Attenuation with ICs. This will be the first Five-Year Review for these sites

The Department of Defense recognizes the importance of public participation in the The Department of Defense recognizes the imponunce of public participation in the PACAF Environmental Rastoration Program and encourages your involvement. If you have any issues or concerns about Driftwood Bay RRS's cleanup program, or if you have direct knowledge regarding the remedias, the Air Force would like to talk to you. Verbal and written comments to be included in the Five-Year Review may be provided to Mr. Robert Johnston, AFCEC Project Manager, by mail at 10471 20° Street, Suite 345, Joint Base Elmendorf-Richardson, AK 99506-2201, or by email at indent johnston. <u>17(2)us.af.</u> <u>mill or by calling 1-800-222-4137</u>. The Air Force requests that comments for the Five-Year Basewide the Air Force & Scotters 20, 2016. Another shiftle police will be a parameter and the Air Force in the Scotters 20, 2016. Review be provided to the Air Force by September 30, 2016. Another public notice will be issued informing the community that the review is complete.



President & CEO for Alaska Tourism Operations

Bristol Bay Native Corporation is recruiting for a President and CEO to lead its growing tourism business line. Under the direction of BBNC's COO, this position will develop and execute strategic business plans, oversee daily operations, develop new business opportunities, and have P/L accountability.

Qualifications: Bachelor's degree in hospitality, business management, or related field, 5+ years of executive-level leadership experience, and detailed understanding of the Alaska tourism industry.

To view the full job description, position requirements, and to apply, please visit www.bbnc.net/careers. This position is open until filled. Questions? Contact Rick Baird, VP of Human Resources, at (907) 265-7841.

Hiring preference for BBNC shareholders, spouses and descendants.

JOB ADVERTISEMENT POSITION TITLE Resident Manager (Southwest Elders Home) (Live in Manager / apartment provided) JOB LOCATION: Nakrick, Alaska PREFERRED QUALIFICATIONS: High School Diploma or GED Experience working with olders Must be menially & physically able to perform all essential job functions, including physical dextently to accomplish maintenance tracks. SUPERIVSED BY: Housing Manager at Bristol Bay Housing Authority in Dillingham SALARY: \$11.55 / hour - 5 days per week - 7.5 hours per day. BENEFITS INCLUDE: PERS Reliroment, Health, Dental, Vision, Short Term Disability & Life Insurance Benefits. MAJOR ADMINISTRATIVE DUTIES: To be available on-site during the major part of each working day.

Die ostatute offen of

Work closely with Bristol Bay Housing Authority Housing Management staff on tenant selections, tenant certifications and re-contributions and evictions as needed, purchase orders for supplies as needed.

Rent collection and deposits Monitor security cameras

MAJOR MAINTENANCE RESPONSIBILITIES:

Performance of inspections of apartment units and common areas for scheduling of ordinary and recurring, preventive and extraordinary maintenance and for schedulad annual requirements to assess conditions. Make necessary repairs of vacant apartment units in preparation for renting to cligible concorts, while necessary repairs of vacant apartment and in peparation of retuning to entropy applicants. Make repairs on occupied apartments as needed to maintain a suite and comfortable living environment and to meet regulatory standards. Perform custodial duties as required by Management to keep all common areas clean and in a safe and presentable condition. Maintain facility grounds in a neat and well-groomed condition. Keep sidewarks and ramps clear of snow and ice

The majority of the Managor's day will be divided into doing inspections, answering phones, taking applications, rent collections and reports, accepting work orders, cleaning vacant units, running errands, oto

For more information, a full job description and/or an application for employment, you may contact: Kathleen Myers, King Salmon @ 248-7660 or Elleen Save in Dillingham @ 842-6511.

APPENDIX E INTERVIEW RECORDS
INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

Robert Johnston	Restoration PM	AFCEC / CZOP	1/10/2017
Name	Title/Position	Organization	Date
	Environmental		
Louis Howard	Program Specialist	ADEC	1/9/2017
Name	Title/Position	Organization	Date
		Ounalashka	
David Gregory	Lands Manger	Corporation	<u>1/19/17</u>
Name	Title/Position	Organization	Date
Name	Title/Position	Organization	Date
1 (unite		organization	Dute

INTERVIEW RECORD					
Site Name: Driftwood Bay RRS, Sit	es SS002, SS007, a	nd SS010	EPA ID No.:		
Subject: 2016 Five Year Review			Time: 1:05pm	Date: 1/10/2017	
Type: Telephone Location of Visit:	Visit 🛛 Ot	her - Email	Incoming	Outgoing	
	Contact I	Made By:			
Name: Terence Dalton	Title: Sr. Enviror	nmental Scientist	Organization: M	WH	
	Individual	Contacted:			
Name: Robert Johnston	Title: Restorat	ion PM	Organization: Al	FCEC/CZOP	
Telephone No: 907-552-7193 Fax No: E-Mail Address: robert.johnston.17	@us.af.mil	Street Address: 1 City, State, Zip:	10471 20 th St. Suite JBER, AK 99506	343	
	Summary Of	Conversation			
 Has the UST at Site SS010 been positively identified and removed from the site? If so, when and can you provide a report on this removal? If not, is this why the status of Site SS010 is identified as "open" instead of "cleanup complete with ICs," as recommended by ADEC in 2010? Yes the tank is gone. All three sites include ICs as part of the remedy. Have any breaches of the ICs occurred or complaints been filed? If so, how were they addressed? 					
the results of your interv	iew in the report				
a. Yes you may use r	ny name			Page 1 of 1	

INTERVIEW RECORD

I	NTERVIEV	W RECORI	D		
Site Name: Driftwood Bay RRS, Sit	es SS002, SS007, a	nd SS010	EPA ID No.:		
Subject: 2016 Five Year Review			Time: 4:49pm	Date: 1/9/2017	
Type: Telephone Location of Visit:	Visit 🛛 O	ther Email	Incoming	Outgoing	
	Contact I	Made By:			
Name: Terence Dalton	Title: Sr. Env. Sc	ientist	Organization: M	IWH	
	Individual	Contacted:			
Name: Louis Howard	Title: Environ	nental Specialist	Organization: A	ADEC	
Telephone No: 907-269-7552 Fax No: E-Mail Address: curtis.dunkin@ala	nska.gov	Street Address: City, State, Zip:	555 Cordova Stree Anchorage, AK 9	et 9501	
	Summary Of	Conversation			
 a. Institutional controls are functioning as expected. 2. Has the USAF submitted annual performance reports on the ICs at these sites as required? a. Yes. 3. Do you know of any problems or difficulties that have been encountered which have impacted remedy implementation or progress at these five sites? a. No. 4. Are you aware of any community concerns regarding these sites? If so, please give details. a. No. 5. Are you aware of any events, incidents, or activities at these sites such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details. 					
 6. Do you have any general comments, suggestions, or recommendations regarding the management of these sites, remedy implementation, or ongoing work at the sites? a. Yes. Site SS002: Address the landfill debris observed in a 2015 inspection which is protruding in many areas of the landfill cover. Additionally, subsidence was also observed (various holes in the ground) at the location of a buried water cistern which poses a hazard at SS002. This issue needs to be addressed as soon as possible as note in the 2015 ICs inspection documented in the 2016 Institutional Controls Report. 7. Do we have your permission to use your name in the Five Year Review report and document the results of your interview in the report? a. Yes. 					

Page 1 of __1___

INTERVIEW RECORD					
Site Name: Driftwood Bay RRS, Sit	EPA ID No.:				
Subject: 2016 Five Year Review			Time: 3:29 PM	Date: 1/19/2017	
Type:	sit 🛛 Othe	er Email	Incoming	Outgoing	
	Contact	Made By:			
Name: Terence Dalton	Title: Sr. Env. Sc	ientist	Organization: MW	VH	
	Individual	Contacted:			
Name: David Gregory	Title: Lands M	lanager	Organization: Ou Corporation	nalashka	
Telephone No: 907-581-1276 Fax No: NA E-Mail Address: gregory@ounalas	hka.com	Street Address: 99692	400 Salmon Way, E	Dutch Harbor, AK	
	Summary Of	f Conversation			
Question #1. Do you know of any pr at these sites? The site is fairly remot of specific sites above ADEC Cleanup	roblems or difficulti e and difficult to ac p levels has not occu	es that have impa cess. I have heard urred.	cted remedy implement this is one of the reas	entation or progress sons further cleanup	
Question #2. Are you aware of any community concerns regarding these sites? The Ounalashka Corporation owns a large portion of the Driftwood Bay Site. We are concerned about the contamination that is still present at the site. We are not in favor of Institutional Controls being placed upon the lands that were part of the ANSCA land distribution. We believe when our land is returned to us it should be free of contaminates. The Ounalashka Corporation does not have specific plans for this area at the moment, however when we start to develop the area we do not want to leave this encumbrance for our future shareholders to deal with. Question #3. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? Occasionally there will be people who travel by boat to the site either for Recreation or for subsistence/camping activities. This is anecdotal information without specific details. People boat, hike and camp all over the island so I am sure people are accessing the area. Question #4. Do you have any general comments, suggestions, or recommendations regarding the management of these sites, remedy implementation , or ongoing work at the sites. The Ounalashka Corporation is concerned about contaminates may be encountered and we will have to deal with them. There is no remedy for this potential. Getting The Air Force or the US Army Corp to respond is a very time consuming process. If contaminates are found while developing a project the Ounalashka Corporation's only remedy at that point would be to incur cost and lost time in removing the Contaminates ourselves or scrap development for several years while USAF or US Army Core funding plans are being worked thru the system. We would like to see some sort of funding plan in place so we do not have to worry about this problem.					
the March 2013 Record of Decision Report I find that the we do not have copies of the following reports; USAF. 2009d(September) "Findings of Additional investigative Activities at the Driftwood Bay RRS Electronic Debris Area; USAF.2010 (October) Finding of the Data Gap Sample Collection at LF2006, Driftwood Bay; USAF.2011b (July) Feasibility Study, Driftwood Bay Radio Relay Station, Unalaska Island, Final; USAF. 2011a (August) Proposed plan for sites DA013,FL006,and OT001 Driftwood Bay RRS; USAF.2012 (July) Draft Records of Decision, OT001 Former Composite Building, DA013 Burned Battery Area. The latest Report The Ounalashka Corporation has in its files is the March 2013 Record of Decision: Site LF006. Please send copies of all correspondence and reports generated after this March 2013 Date so that we may have a completed file. Ouestion 5: Do we have your permission to use your name in the Five-Year Review report and document the					
results of your interview in the report furnished with the above mentione Administrative Record.]	<u>t?</u> Yes you may used documents. [NC	e my name in the DTE: MWH prov	5-Year Review Rep ided Mr. Gregory	ort provided we are with a link to the	

APPENDIX F SITE INSPECTION CHECKLISTS AND PHOTOGRAPHIC DOCUMENTATION, JUNE 2016

Five-Year Review Site Inspection Checklist

I. SITE INF	ORMATION
Site name: SS002	Date of inspection: 11 June 2016
Location and Region: Driftwood Bay RRS, Unalaska, AK, Region 10	EPA ID: Not Applicable
Agency, office, or company leading the five-year review: MWH Americas, Inc.	Weather/temperature: Overcast, 50°F, Trace Precipitation
Remedy Includes: (Check all that apply) Image: Access controls Image: Access controls Image: Access controls <td>Monitored natural attenuation Groundwater containment Vertical barrier walls</td>	Monitored natural attenuation Groundwater containment Vertical barrier walls
Attachments: □ Inspection team roster attached	x Site map attached
II. INTERVIEWS	(Check all that apply)
 O&M site manager	Title Date
2. O&M staff	Title Date

Agency	Agapau		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Agency		
Agency	Name	Title	Date_Dhone_no
Agency Title Date Phone no. Problems; suggestions; Agency Contact Agency Contact Name Title Date Phone no. Problems; suggestions; Agency Contact Contact Agency Contact Title Date Phone no. Problems; suggestions; Report attached Other interviews (optional) Report attached.	Problems; suggestions; Report attached		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Agency		
Agency	Name Problems; suggestions; Report attached	Title	Date Phone no.
Contact Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Other interviews (optional) Report attached.	Agency		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Contact		
AgencyContact	Name Problems; suggestions; □ Report attached	Title	Date Phone no.
Name Title Date Phone no. Problems; suggestions;	Agency		
Other interviews (optional) Report attached.	Name Problems; suggestions; Report attached	Title	Date Phone no.
	Other interviews (optional) Report attached	1.	

	III. ON-SITE DOCUMENTS	& RECORDS VE	RIFIED (Check a	ll that app	ly)
1.	O&M Documents □ O&M manual □ As-built drawings □ Maintenance logs Remarks_	Readily available Readily available Readily available	□ Up to date □ Up to date □ Up to date	⊠ N/A □ N/A ⊠ N/A	4 4
2.	Site-Specific Health and Safety Plan Contingency plan/emergency response Remarks	□ Readily se plan □ Readily	y available □Up y available □Up	to date to date	⊠ N/A □ N/A
3.	O&M and OSHA Training Records Remarks	□ Readily ava	ilable □ Up	to date	⊠ N/A
4.	Permits and Service Agreements Air discharge permit Effluent discharge Waste disposal, POTW Other permits	□ Readily ava □ Readily ava □ Readily ava □ Readily ava	ilable □ Up ilable □ Up ilable □ Up ilable □ Up	to date to date to date to date	⊠ N/A ⊠ N/A ⊠ N/A ⊠ N/A
5.	Gas Generation Records Remarks	□ Readily ava	ailable 🗆 Up	to date	⊠ N/A
6.	Settlement Monument Records Remarks	□ Readily ava	ilable □Up	to date	⊠ N/A
7.	Groundwater Monitoring Records Remarks	□ Readily ava	uilable 🗆 Up	to date	⊠ N/A
8.	Leachate Extraction Records Remarks	□ Readily ava	ilable □Up	to date	⊠ N/A
9.	Discharge Compliance Records Air Water (effluent) Remarks	□ Readily ava □ Readily ava	ilable □ Up ilable □ Up	to date to date	⊠ N/A ⊠ N/A
10.	Daily Access/Security Logs Remarks	□ Readily ava	ilable □Up	to date	⊠ N/A

			IV. O&M COSTS				
1.	O&M Organiza State in-house PRP in-house Federal Facility Other 	O&M Organization □ State in-house □ Contractor for State □ PRP in-house □ Contractor for PRP □ Federal Facility in-house □ Contractor for Federal Facility □ Other					
2.	O&M Cost Reco □ Readily availat □ Funding mecha Original O&M co	ords ole □ Up t anism/agreement ost estimate Total annual	o date in place D Bı cost by year for review p	reakdown attached period if available			
	From	То		□ Breakdown attached			
	Date From	Date	Total cost	□ Breakdown attached			
	Date From	Date To	Total cost	□ Breakdown attached			
	Date From	Date To	Total cost	□ Breakdown attached			
	Date	Date	Total cost	□ □ Breakdown attached			
	Date	Date	Total cost				
3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons:						

	V. ACCESS AND INSTITUTIONAL CONTROLS \square A	Applicable	□ N/A	
A. F	encing			
1.	Fencing damaged □ Location shown on site map □ Gate Remarks: <u>No fence around site.</u>	es secured	⊠ N/A	
B. O	ther Access Restrictions			
1.	Signs and other security measuresImage: DescriptionRemarks: Four warning signs are in place.	te map	□ N/A	
C. Ir	nstitutional Controls (ICs)			
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	\Box Yes	🛛 No	\Box N/A
	Site conditions imply ICs not being fully enforced	\Box Yes	🛛 No	\Box N/A
	Type of monitoring (<i>e.g.</i> , self-reporting, drive by) <u>Site inspections</u>			
	Responsible party/agency <u>U.S. Air Force</u>			
	Name Title	Da	te Phone	e no.
	Reporting is up-to-date	Ves	□ No	$\Box N/\Delta$
	Reporting is up to dute Reports are verified by the lead agency	X Yes		\Box N/A
	Reports are verified by the fead agency			
	Specific requirements in deed or decision documents have been met	🛛 Yes	\Box No	\Box N/A
	Violations have been reported	\Box Yes	\Box No	🖾 N/A
	Other problems or suggestions: Report attached			
1.	Implementation and enforcement			<u>-</u>
	Site conditions imply ICs not properly implemented	□ Yes	🖾 No	\Box N/A
	Site conditions imply ICs not being fully enforced	□ Yes	🛛 No	\Box N/A
	Type of monitoring (<i>e.g.</i> , self-reporting, drive by)			
	Frequency Responsible party/agency			
	Contact			
	Name Title	Da	te Phone	e no.
	Reporting is up-to-date	□ Yes	□ No	\Box N/A
	Reports are verified by the lead agency	\Box Yes	\Box No	\Box N/A
	Specific requirements in deed or decision documents have been met	□ Yes	□ No	\Box N/A
	Violations have been reported	□ Yes	\Box No	\Box N/A
	Other problems or suggestions: Report attached			
2.	Adequacy ⊠ ICs are adequate □ ICs are inadequate Remarks	quate		□ N/A

D (Senonal		
D . (Felleral		
1.	Vandalism/trespassing Remarks	\Box Location shown on site map \Box I	No vandalism evident
2.	Land use changes on sit Remarks	e □ N/A	
3.	Land use changes off si Remarks	te □ N/A	
		VI. GENERAL SITE CONDITION	S
A. F	Roads	⊠ N/A	
1.	Roads damaged Remarks	\Box Location shown on site map \Box R	oads adequate 🛛 N/A
B. C	Other Site Conditions		
	Remarks:		
	VII	. LANDFILL COVERS 🛛 Applicable	e □N/A
A. I	Landfill Surface		
1.	Settlement (Low spots) Areal extent RemarksSubsidence n asbestos cell.	☑ Location shown on site map Depth0 to 3 feet oted in several areas, including the buried	b □ Settlement not evident
2.	Cracks Lengths Remarks	□ Location shown on site map Widths Depths	Cracking not evident
3.	Erosion Areal extent Remarks:	⊠ Location shown on site map Depth:_0 to 3+ feet	\Box Erosion not evident
4.	Holes Areal extent_ <u>195 square</u> Remarks: <u>Most notable le</u>	\boxtimes Location shown on site map feet Depth: <u>3 + feet</u> ocation associated with the buried water c	D □ Holes not evident

5.	Vegetative Cover □ Grass □ Cover properly established □ No signs of stress □ Trees/Shrubs (indicate size and locations on a diagram) Remarks: Vegetative cover is variable. Runnel areas lack vegetation, while prominences are vegetated with low shrub cover and or grass.						
6.	Alternative Cover (armored rock, concrete, etc.)						
7.	Bulges Areal extent Remarks	□ Location shown on site map Height	⊠ Bulges not evident				
8.	Wet Areas/Water Damage Wet areas Ponding Seeps Soft subgrade Remarks	 ☑ Wet areas/water damage not □ Location shown on site map 	evident Areal extent Areal extent Areal extent Areal extent Areal extent				
9.	Slope Instability	□ Location shown on site map	⊠ No evidence of slope instability				
B. B	enches	⊠ N/A s of earth placed across a steep land y of surface runoff and intercept an	dfill side slope to interrupt the slope and convey the runoff to a lined				
1.	Flows Bypass Bench Remarks	□ Location shown on site map	□ N/A or okay				
2.	Bench Breached Remarks	□ Location shown on site map	□ N/A or okay				
3.	Bench Overtopped Remarks	□ Location shown on site map	□ N/A or okay				
C. L	etdown Channels □ Applicable (Channel lined with erosion contr slope of the cover and will allow cover without creating erosion gu	\boxtimes N/A rol mats, riprap, grout bags, or gabi the runoff water collected by the builties.)	ons that descend down the steep side enches to move off of the landfill				
1.	Settlement □ Location Areal extent Remarks	ation shown on site map □ No Depth	evidence of settlement				

2.	Material Degradation Material type Remarks	□ Location shown on Areal extent_	site map	□ No evidence of degradation
3.	Erosion Areal extent Remarks	□ Location shown on Depth	site map	□ No evidence of erosion
4.	Undercutting Areal extent Remarks	□ Location shown on Depth	site map	□ No evidence of undercutting
5.	Obstructions Type_ □ Location shown on site Size Remarks	map	_ □ No c Areal exter	bbstructions nt
6.	Excessive Vegetative G D No evidence of excessi Vegetation in channels Location shown on site Remarks_	rowth Typ ve growth does not obstruct flow map	Areal exter	nt
D. Co	ver Penetrations	icable 🖾 N/A		
1.	Gas Vents Properly secured/locke Evidence of leakage at N/A Remarks 	□ Active□ Passive d □ Functioning □ R penetration	outinely san □ Need	npled
2.	Gas Monitoring Probes Properly secured/locke Evidence of leakage at 	d □ Functioning □ R penetration	outinely san □ Need	npled \Box Good condition ds Maintenance \Box N/A
3.	Monitoring Wells (with Properly secured/locke Evidence of leakage at Remarks_	n surface area of landfil d □ Functioning □ R penetration	ll) outinely san □ Need	npled
4.	Leachate Extraction W Properly secured/locke Evidence of leakage at Remarks	ells d □ Functioning □ R penetration	outinely san □ Need	npled
5.	Settlement Monuments Remarks			tinely surveyed \Box N/A

E. G	Gas Collection and Treatment □ Applicable ℕ/A	
1.	Gas Treatment Facilities □ Flaring □ Thermal destruction □ Collection for reuse □ Good condition□ Needs Maintenance Remarks	
2.	Gas Collection Wells, Manifolds and Piping □ Good condition□ Needs Maintenance Remarks	
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings) □ Good condition□ Needs Maintenance □ N/A Remarks	
F. C	Cover Drainage Layer	
1.	Outlet Pipes Inspected □ Functioning □ N/A Remarks	
2.	Outlet Rock Inspected □ Functioning □ N/A Remarks	
G. D	Detention/Sedimentation Ponds □ Applicable	
1.	Siltation Areal extent Depth Depth Siltation not evident Remarks Depth	
2.	Erosion Areal extent Depth □ Erosion not evident Remarks	
3.	Outlet Works □ Functioning Remarks	
4.	Dam □ Functioning □ N/A Remarks	

H. Ref	taining Walls	□ Applicable	⊠ N/A	
1.	Deformations Horizontal displacement_ Rotational displacement_ Remarks	□ Location show	wn on site map Vertical displac	□ Deformation not evident cement
2.	Degradation Remarks	□ Location show	wn on site map	Degradation not evident
I. Peri	imeter Ditches/Off-Site Di	scharge	□ Applicable	⊠ N/A
1.	Siltation □ Locat Areal extent Remarks	tion shown on site Depth_	e map □ Siltation	not evident
2.	Vegetative Growth □ Vegetation does not im Areal extent Remarks	□ Location show pede flow Type	wn on site map	□ N/A
3.	Erosion Areal extent Remarks	□ Location show Depth_	wn on site map	□ Erosion not evident
4.	Discharge Structure Remarks	□ Functioning	□ N/A	
	VIII. VEF	RTICAL BARRI	ER WALLS [□ Applicable ⊠ N/A
1.	Settlement Areal extent Remarks	□ Location show Depth_	wn on site map	□ Settlement not evident
2.	Performance Monitorin □ Performance not monit Frequency Head differential Remarks	gType of monitor ored	□ Evidence	e of breaching

	IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A
A. 6	Groundwater Extraction Wells, Pumps, and Pipelines
1.	Pumps, Wellhead Plumbing, and Electrical □ Good condition□ All required wells properly operating □ Needs Maintenance □ N/A Remarks
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances
3.	Spare Parts and Equipment □ Readily available □ Good condition□ Requires upgrade □ Needs to be provided Remarks
B. S	urface Water Collection Structures, Pumps, and Pipelines
1.	Collection Structures, Pumps, and Electrical □ Good condition □ Needs Maintenance Remarks
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances
3.	Spare Parts and Equipment □ Readily available □ Good condition□ Requires upgrade □ Needs to be provided Remarks

C.	Treatment System	□ Applicable	⊠ N/A			
1.	Treatment Train (Chec Description: Metals removal Air stripping Filters Additive (<i>e.g.</i> , chelation Others Good condition Sampling ports proper Sampling/maintenance Equipment properly id	k components that Oil/water sepa Carbo on agent, flocculent Needs Mainter ly marked and func- e log displayed and entified	apply) ration on adsorbers 	Bioremediatio	n 	-
	 Quantity of groundwat Quantity of surface wat Remarks	er treated annually ter treated annually	У			_
2.	Electrical Enclosures a N/A Goo Remarks	nd Panels (properl d condition□ Need	y rated and f s Maintenand	unctional) ce		
3.	Tanks, Vaults, Storage □ N/A □ Goo Remarks	Vessels d condition□ Prope	er secondary	containment	□ Needs Maintenance	
4.	Discharge Structure an □ N/A □ Goo Remarks	d Appurtenances d condition□ Need	s Maintenano	ce		
5.	Treatment Building(s) N/A Goo Chemicals and equipm Remarks	d condition (esp. ro ent properly stored	oof and doory	ways)	□ Needs repair	_
6.	Monitoring Wells (pum Properly secured/locket All required wells locat Remarks	p and treatment ren ed □ Functioning tted □ Need	nedy) □ Routinel s Maintenand	y sampled ce	□ Good condition □ N/A	_
D.	Monitoring Data					
1.	Monitoring Data	on time	\Box Is of	acceptable qu	ality	
2.	Monitoring data suggests	s: effectively contain	ned □ Cont	taminant conce	entrations are declining	

D. N	Monitored Natural Attenuation
1.	Monitoring Wells (natural attenuation remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks
	X. OTHER REMEDIES
	If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.
	XI. OVERALL OBSERVATIONS
A.	Implementation of the Remedy
	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The landfill cover shows significant signs of erosion in ephemeral overland drainage tracts which in several locations cross the entire length of the landfill from generally south to the north. Each of the drainage tracts are characterized by subdued land surface, exposed landfill debris, and minimal vegetative cover. Subsidence in several areas was also noted during the field inspection, most notably at the location of the buried water cistern, south of the composite building foundation.
B.	Adequacy of O&M
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy
C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>Erosion and subsidence observations made in 2016 may warrant corrective action in the future to</u> promote the long-term effectiveness of the implemented remedy at the site.
D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>Proactive landfill cover maintenance could potentially limit long-term challenges to the site remedy and</u> <u>associated repair costs.</u>

Five-Year Review Site Inspection Checklist

ORMATION						
Date of inspection: 11 June 2016						
EPA ID: Not Applicable						
Weather/temperature: Overcast, 50°F, Trace Precipitation						
Monitored natural attenuation froundwater containment retrical barrier walls						
Attachments: □ Inspection team roster attached						
(Check all that apply)						
Title Date						
Title Date						

Agency	Agapau		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Agency		
Agency	Name	Title	Date_Dhone_no
Agency Title Date Phone no. Problems; suggestions; Agency Contact Agency Contact Name Title Date Phone no. Problems; suggestions; Agency Contact Contact Agency Contact Title Date Phone no. Problems; suggestions; Report attached Other interviews (optional) Report attached.	Problems; suggestions; Report attached		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Agency		
Agency	Name Problems; suggestions; Report attached	Title	Date Phone no.
Contact Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Other interviews (optional) Report attached.	Agency		
Name Title Date Phone no. Problems; suggestions; □ Report attached	Contact		
AgencyContact	Name Problems; suggestions; □ Report attached	Title	Date Phone no.
Name Title Date Phone no. Problems; suggestions;	Agency		
Other interviews (optional) Report attached.	Name Problems; suggestions; Report attached	Title	Date Phone no.
	Other interviews (optional) Report attached	1.	

	III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)					
1.	O&M Documents	Readily available Readily available Readily available	□ Up to da □ Up to da □ Up to da	ıte ⊠ ıte ⊠ ıte ⊠	N/A N/A N/A	
2.	Site-Specific Health and Safety Plan Contingency plan/emergency response Remarks	□ Readily se plan □ Readily	y available □ y available □	Up to date	e ⊠ e □ N	N/A J/A
3.	O&M and OSHA Training Records Remarks	□ Readily ava	uilable □	Up to date	e 🛛	N/A
4.	Permits and Service Agreements Air discharge permit Effluent discharge Waste disposal, POTW Other permits	□ Readily ava □ Readily ava □ Readily ava □ Readily ava □ Readily ava	uilable □ uilable □ uilable □ uilable □	Up to date Up to date Up to date Up to date	e 🛛 e 🖾 e 🖾	N/A N/A N/A N/A
5.	Gas Generation Records Remarks	□ Readily ava	ailable 🗆	Up to date	e 🛛	N/A
6.	Settlement Monument Records Remarks	□ Readily ava	nilable 🗆	Up to date	e 🛛	N/A
7.	Groundwater Monitoring Records Remarks	□ Readily ava	ailable	Up to date	e 🛛	N/A
8.	Leachate Extraction Records Remarks	□ Readily ava	ailable	Up to date	e 🛛	N/A
9.	Discharge Compliance Records Air Water (effluent) Remarks 	□ Readily ava □ Readily ava	ilable	Up to date	e ⊠ e ⊠	N/A N/A
10.	Daily Access/Security Logs Remarks	□ Readily ava	uilable 🗆	Up to date	e 🛛	N/A

	IV. O&M COSTS				
1.	O&M Organiza State in-house PRP in-house Federal Facility Other	tion y in-house	□ Contractor for State □ Contractor for PRP □ Contractor for Feder	ral Facility	
2.	O&M Cost Records □ Readily available □ Up to date □ Funding mechanism/agreement in place Original O&M cost estimate □ Breakdown attached				
	FromDate FromDate FromDate FromDate FromDate FromDate	To To To To To To Date To Date	Total cost Total cost Total cost Total cost Total cost	 Breakdown attached Breakdown attached Breakdown attached Breakdown attached Breakdown attached Breakdown attached 	
3. A. Fer	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons:				
1.	Fencing damage Remarks: <u>No fen</u>	ed □ Loca ce around site.	tion shown on site map	□ Gates secured ⊠ N/A	
B. Otl	ner Access Restric	tions			
1.	Signs and other Remarks: <u>Three</u>	security measure warning signe	res \boxtimes Location s are in place.	shown on site map	

C. Ins	stitutional Controls (ICs)		
1.	Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced	$\Box \operatorname{Yes} \boxtimes \operatorname{No} \\ \Box \operatorname{Yes} \boxtimes \operatorname{No} \\ \end{array}$	□ N/A □ N/A
	Type of monitoring (<i>e.g.</i> , self-reporting, drive by) <u>Site inspection</u> Frequency <u>5-year</u>	<u>S</u>	
	Responsible party/agency <u>U.S. Air Force</u>		
	Name Title	Date Phone	no.
	Reporting is up-to-date Reports are verified by the lead agency	$\boxtimes Yes \Box No$ $\boxtimes Yes \Box No$	□ N/A □ N/A
	Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions:	⊠ Yes □No □Yes □No	□ N/A ⊠ N/A
2.	Adequacy ⊠ ICs are adequate □ ICs are inadequate	quate	
	Remarks		
D. Ge	neral		
1.	Vandalism/trespassing □ Location shown on site map ⊠ No Remarks	vandalism evident	
2.	Land use changes on site N/A Remarks		
3.	Land use changes off site N/A Remarks		

		VI. GENERAL SITE CONDITIONS
A.	Roads	× N/A
1.	Roads damaged Remarks	□ Location shown on site map □ Roads adequate ⊠ N/A
В.	Other Site Conditions	
	Remarks: <u>Site accesse</u> strip. Site access roa (conducted in 2015)	ed via beach and landing craft or road a joining the aircraft landing d which connects to the landing strip required improvements to allow access.
	VII	LANDFILL COVERS \Box Applicable \boxtimes N/A
A.	Landfill Surface	
1.	Settlement (Low spots) Areal extent Remarks	□ Location shown on site map □ Settlement not evident Depth
2.	Cracks Lengths Remarks	□ Location shown on site map □ Cracking not evident Widths Depths
3.	Erosion Areal extent Remarks:	□ Location shown on site map □ Erosion not evident _ Depth:
4.	Holes Areal extent Remarks:	□ Location shown on site map □ Holes not evident _ Depth:
5.	Vegetative Cover □ Trees/Shrubs (indicate Remarks:	□ Grass □ Cover properly established □ No signs of stress size and locations on a diagram)
6.	Alternative Cover (arm Remarks	nored rock, concrete, etc.) 🛛 N/A
7.	Bulges Areal extent Remarks	□ Location shown on site map □ Bulges not evident Height

8.	Wet Areas/Water Damage Uet areas Ponding Seeps Soft subgrade Remarks	 Wet areas/water damage not evident Location shown on site map Location shown on site map Location shown on site map Areal extent Location shown on site map Areal extent
9.	Slope Instability	les □ Location shown on site map □ No evidence of slope instability
B. Bei	nches	ble \boxtimes N/A bunds of earth placed across a steep landfill side slope to interrupt the slope locity of surface runoff and intercept and convey the runoff to a lined
1.	Flows Bypass Bench Remarks	□ Location shown on site map □ N/A or okay
2.	Bench Breached Remarks	\Box Location shown on site map \Box N/A or okay
3.	Bench Overtopped Remarks	\Box Location shown on site map \Box N/A or okay
C. Let	tdown Channels	ble \boxtimes N/A control mats, riprap, grout bags, or gabions that descend down the steep side low the runoff water collected by the benches to move off of the landfill on gullies.)
1.	Settlement	Location shown on site map
2.	Material Degradation	Location shown on site map
3.	Erosion	Location shown on site map

4.	Undercutting □ Location shown on site map □ No evidence of undercutting Areal extent Depth □ Remarks □ □
5.	Obstructions Type D No obstructions D Location shown on site map Areal extent Size Remarks
6.	Excessive Vegetative Growth Type No evidence of excessive growth Vegetation in channels does not obstruct flow I Location shown on site map Areal extent Remarks Areal extent Areal extent
D. Co	over Penetrations \Box Applicable \boxtimes N/A
1.	Gas Vents Active: Passive Properly secured/locked: Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks
2.	Gas Monitoring Probes Properly secured/locked □ Functioning □ Routinely sampled □ Good condition □ Evidence of leakage at penetration □ Needs Maintenance □ N/A Remarks
3.	Monitoring Wells (within surface area of landfill) Properly secured/locked Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks
4.	Leachate Extraction Wells Properly secured/locked Functioning Routinely sampled Good condition Curveds Maintenance N/A Remarks
5.	Settlement Monuments □ Located □ Routinely surveyed □ N/A Remarks

E. Gas	s Collection and Treatment \Box Applicable \boxtimes N/A	
1.	Gas Treatment Facilities Flaring Thermal destruction Good condition Needs Maintenance Remarks	
2.	Gas Collection Wells, Manifolds and Piping □ Good condition□ Needs Maintenance Remarks	
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings) □ Good condition□ Needs Maintenance □ N/A Remarks	
F. Cov	ver Drainage Layer \Box Applicable \boxtimes N/A	
1.	Outlet Pipes Inspected □ Functioning □ N/A Remarks	
2.	Outlet Rock Inspected □ Functioning □ N/A Remarks	
G. Det	tention/Sedimentation Ponds	
1.	Siltation Areal extent Depth DN/A Siltation not evident Remarks	
2.	Erosion Areal extent Depth □ Erosion not evident Remarks	
3.	Outlet Works □ Functioning Remarks	
4.	Dam □ Functioning □ N/A Remarks	

H. Ret	taining Walls	□ Applicable	× N/A	
1.	Deformations Horizontal displacement_ Rotational displacement_ Remarks	□ Location show	n on site map Vertical displace	□ Deformation not evident ement
2.	Degradation Remarks	□ Location show	n on site map	□ Degradation not evident
I. Peri	imeter Ditches/Off-Site Di	scharge	□ Applicable	🖾 N/A
1.	Siltation □ Local Areal extent Remarks	tion shown on site Depth	map Siltation	not evident
2.	Vegetative Growth Vegetation does not im Areal extent Remarks 	□ Location show pede flow Type	n on site map	□ N/A
3.	Erosion Areal extent Remarks	□ Location show Depth_	n on site map	Erosion not evident
4.	Discharge Structure Remarks	□ Functioning	□ N/A	
	VIII. VER	TICAL BARRIE	ER WALLS	Applicable 🛛 N/A
1.	Settlement Areal extent Remarks	□ Location show Depth	n on site map	□ Settlement not evident
2.	Performance Monitorin Performance not monitor Frequency Head differential Remarks	gType of monitor	ing □ Evidence 	of breaching

	IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable DN/A
A. G	roundwater Extraction Wells, Pumps, and Pipelines
1.	Pumps, Wellhead Plumbing, and Electrical ⊠ Good condition □ All required wells properly operating □ Needs Maintenance □ N/A Remarks
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks
3.	Spare Parts and Equipment Readily available Good condition Remarks
B. Su	urface Water Collection Structures, Pumps, and Pipelines
1.	Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances
3.	Spare Parts and Equipment □ Readily available □ Good condition□ Requires upgrade □ Needs to be provided Remarks

C.	Treatment System	□ Applicable	⊠ N/A			
1.	Treatment Train (Chec Description: Metals removal Air stripping Filters Additive (<i>e.g.</i> , chelation Others Good condition Sampling ports proper Sampling/maintenance Equipment properly id Quantity of groundward	k components that Oil/water sepa Carbo on agent, flocculent Needs Mainter ly marked and funce log displayed and entified er treated annually	apply) aration		n	-
	□ Quantity of surface wa Remarks	iter treated annuall	y			
2.	Electrical Enclosures a □ N/A □ Goo Remarks	nd Panels (properl d condition□ Need	y rated and fur s Maintenance	nctional)		
3.	Tanks, Vaults, Storage □ N/A □ Goo Remarks	Vessels d condition□ Prope	er secondary co	ontainment	□ Needs Maintenance	
4.	Discharge Structure an □ N/A □ Goo Remarks	d Appurtenances d condition□ Need	s Maintenance			
5.	Treatment Building(s) □ N/A □ Goo □ Chemicals and equipm Remarks	d condition (esp. ro ent properly stored	oof and doorwa 1	iys)	□ Needs repair	
6.	Monitoring Wells (pum Description Properly secured/locker Description All required wells location Remarks	p and treatment ren ed □ Functioning tted □ Need	medy) □ Routinely s s Maintenance	sampled	□ Good condition □ N/A	
D.	Monitoring Data					
1.	Monitoring Data	on time	\Box Is of a	cceptable qua	ality	
2.	Monitoring data suggest	s: effectively contair	ned 🗆 Contar	minant conce	entrations are declining	

D. Monitored Natural Attenuation Monitoring Wells (natural attenuation remedy) 1. ⊠ Properly secured/locked \boxtimes Functioning \boxtimes Routinely sampled \boxtimes Good condition \boxtimes All required wells located □ Needs Maintenance \square N/A Remarks_____ X. OTHER REMEDIES If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction. XI. OVERALL OBSERVATIONS **Implementation of the Remedy** Α. Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Land use control signage remained intact since installation in 2015. Monitoring wells and protective casings are in good condition following 2015 installation. No signs of unauthorized site access were observed. B. Adequacy of O&M Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Not applicable to this site. С. **Early Indicators of Potential Remedy Problems** Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. Not applicable to this site. D. **Opportunities for Optimization** Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. No opportunities have been identified for the site at this time.

Five-Year Review Site Inspection Checklist

I. SITE INF	ORMATION		
Site name: SS010	Date of inspection: 11 June 2016		
Location and Region: Driftwood Bay RRS, Unalaska, AK, Region 10	EPA ID: Not Applicable		
Agency, office, or company leading the five-year review: MWH Americas, Inc.	Weather/temperature: Overcast, 50°F, Trace Precipitation		
Remedy Includes: (Check all that apply) □ Landfill cover/containment IN □ Access controls IN □ Institutional controls IN □ Groundwater pump and treatment IN □ Surface water collection and treatment IN □ Other:	Monitored natural attenuation Groundwater containment Vertical barrier walls		
Attachments: □ Inspection team roster attached	Site map attached		
II. INTERVIEWS	(Check all that apply)		
1. O&M site manager Name Interviewed □ at site □ at office □ by phone Phon Problems, suggestions; □ Report attached	Title Date		

Agency		
Contact		
Name	Title	Date Phone no.
Problems; suggestions; Report attached		
Agency		
Contact		
Name Problems; suggestions; □ Report attached	Title	Date Phone no.
Agency		
Contact		
Name Problems; suggestions; Report attached	Title	Date Phone no.
Agency		
Name Problems; suggestions; Report attached	Title	Date Phone no.
Other interviews (optional) Report attached	1.	

	III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)					
1.	O&M Documents	eadily available eadily available eadily available	□ Up to d □ Up to d □ Up to d	late ⊠ late ⊠ late ⊠	N/A N/A N/A	
2.	Site-Specific Health and Safety Plan Contingency plan/emergency respons Remarks	□ Readily se plan □ Readily	y available [y available [□ Up to date □ Up to date	e \boxtimes N/A e \square N/A	
3.	O&M and OSHA Training Records Remarks	□ Readily ava	ilable [□ Up to date	e 🛛 N/A	
4.	Permits and Service Agreements Air discharge permit Effluent discharge Waste disposal, POTW Other permits	□ Readily ava □ Readily ava □ Readily ava □ Readily ava	iilable [iilable [iilable [iilable [□ Up to date □ Up to date □ Up to date □ Up to date	e \boxtimes N/A e \boxtimes N/A e \boxtimes N/A e \boxtimes N/A	
5.	Gas Generation Records Remarks	□ Readily ava	ailable [□ Up to date	e 🛛 N/A	
6.	Settlement Monument Records Remarks	□ Readily ava	ilable [□ Up to date	e 🛛 N/A	
7.	Groundwater Monitoring Records Remarks	□ Readily ava	ailable [□ Up to date	e 🛛 N/A	
8.	Leachate Extraction Records Remarks	□ Readily ava	ailable [□ Up to date	e 🛛 N/A	
9.	Discharge Compliance Records Air Water (effluent) Remarks	□ Readily ava □ Readily ava	ilable [ilable [⊐ Up to date ⊐ Up to date	e ⊠ N/A e ⊠ N/A	
10.	Daily Access/Security Logs Remarks	□ Readily ava	ilable	□ Up to dat	e 🛛 N/A	
		IV. O&M COSTS				
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1.	O&M Organization State in-house PRP in-house Federal Facility in-house Other	□ Contractor for State □ Contractor for PRP □ Contractor for Feder	al Facility			
2.	O&M Cost Records □ Readily available □ Up to □ Funding mechanism/agreement i Original O&M cost estimate Total annual c	date n place □ Br ost by year for review p	eakdown attached eriod if available			
3.	From To Date Date Date Date Mate Date Date Date Date Date Date Date Date Date Date Date	Total cost Total cost Total cost Total cost Total cost Total cost	 Breakdown attached Breakdown attached Breakdown attached Breakdown attached Breakdown attached Breakdown attached 			
A. F0 1.	V. ACCESS AND INST encing Fencing damaged □ Locat Remarks: No fence around site.	ITUTIONAL CONTR	COLS ⊠ Applicable □ N/A			
B. O	ther Access Restrictions Signs and other security measure Remarks: <u>Two warning signs are in</u>	es ⊠ Location s 1 place.	hown on site map □ N/A			

C.	Institutional Controls (ICs)			
1.	Implementation and enforcement			
	Site conditions imply ICs not properly implemented	\Box Yes	🖾 No	\Box N/A
	Site conditions imply ICs not being fully enforced	\Box Yes	🛛 No	\Box N/A
	Type of monitoring (<i>e.g.</i> , self-reporting, drive by) <u>Site inspections</u> Frequency 5-year			
	Responsible party/agency <u>U.S. Air Force</u>			
	Contact Title	- <u></u>		
	ivanie litte	Da		e no.
	Reporting is up-to-date	🛛 Yes	□ No	\Box N/A
	Reports are verified by the lead agency	🛛 Yes	\Box No	\Box N/A
	Specific requirements in deed or decision documents have been met	⊠ Yes	∐ No	$\square N/A$
	Other problems or suggestions: \Box Report attached			\square N/A
_				
2.	Adequacy \boxtimes ICs are adequate \square ICs are inade	quate		\Box N/A
	Kelliaiks			
D.	General			
1.	Vandalism/trespassing \Box Location shown on site map \boxtimes No Remarks	vandalism	n evident	
-				
2.	Land use changes on site $\Box N/A$ Remarks. Site is located along the site access road to high camp			
	Kelliarks_She is located along the she access toad to high earlp.			
3.	Land use changes off site \Box N/A			
	Remarks			
	VI. GENERAL SITE CONDITIONS			
A.	Roads \Box Applicable \boxtimes N/A			
1.	Roads damaged □ Location shown on site map □ Roa Remarks	ds adequat	te 🛛 N/.	A

B. O	ther Site Conditions					
	Remarks: <u>Site accessed v</u>	ia road to high camp. Erosional features requ	ired repair (conducting in 2015)			
	in order to access Site SS010), which may inhibit recreational use under r	ormal conditions.			
	VII. L	ANDFILL COVERS \Box Applicable \boxtimes N	J/A			
A. L	andfill Surface					
1.	Settlement (Low spots)	\Box Location shown on site map	□ Settlement not evident			
	Areal extent	_ Depth				
	Remarks					
2.	Cracks	\Box Location shown on site map	□ Cracking not evident			
	Lengths V	Vidths Depths				
	Remarks					
3.	Erosion	□ Location shown on site map	☐ Erosion not evident			
0.	Areal extent D	epth:				
	Remarks:					
4.	Holes	\Box Location shown on site map	☐ Holes not evident			
	Areal extent I	Depth:				
	Remarks:					
5.	Vegetative Cover \Box Grass \Box Cover properly established \Box No signs of stress					
	□ Trees/Shrubs (indicate size and locations on a diagram)					
	Remarks:					
-						
6.	Alternative Cover (armore	d rock, concrete, etc.) 🖄 N/A				
7	Rulaes	□ Location shown on site man	¬ Rulges not evident			
/.	Areal extent	Height				
	Remarks					
8.	Wet Areas/Water Damage	□ Wet areas/water damage not evide	nt			
	\Box Wet areas	\Box Location shown on site map	Areal extent			
	\Box Ponding	\Box Location shown on site map	Areal extent			
	\Box Seeps	\Box Location shown on site map	Areal extent			
	□ Soft subgrade	\Box Location shown on site map	Areal extent			
	Remarks					

9.	Slope Instability □ Slides □ Location shown on site map □ No evidence of slope instability Areal extent	
В.	Benches □ Applicable ⊠ N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)	<u>,</u>
1.	Flows Bypass Bench □ Location shown on site map □ N/A or okay Remarks	
2.	Bench Breached □ Location shown on site map □ N/A or okay Remarks	
3.	Bench Overtopped □ Location shown on site map □ N/A or okay Remarks	
C.	Letdown Channels ☐ Applicable ⊠ N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep sid slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)	le
1.	Settlement □ Location shown on site map □ No evidence of settlement Areal extent Depth Performance Remarks	
2.	Material Degradation □ Location shown on site map □ No evidence of degradation Material type Areal extent Remarks	
3.	Erosion Location shown on site map No evidence of erosion Areal extent Depth Remarks	

4.	Undercutting Location shown on site map No evidence of undercutting Areal extent Depth Remarks Image: Construction of the second sec
5.	Obstructions Type D No obstructions D Location shown on site map Areal extent Size Remarks
6.	Excessive Vegetative Growth Type No evidence of excessive growth Vegetation in channels does not obstruct flow Location shown on site map Areal extent Remarks Areal extent Areal extent
D. C	over Penetrations \Box Applicable \boxtimes N/A
1.	Gas Vents Active Passive Properly secured/locked Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks
2.	Gas Monitoring Probes Properly secured/locked Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks Remarks
3.	Monitoring Wells (within surface area of landfill) Properly secured/locked Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks
4.	Leachate Extraction Wells Properly secured/locked Functioning Routinely sampled Good condition Evidence of leakage at penetration Needs Maintenance N/A Remarks
5.	Settlement Monuments □ Located □ Routinely surveyed □ N/A Remarks

E. Gas	s Collection and Treatment \Box Applicable \boxtimes N/A	
1.	Gas Treatment Facilities Flaring Thermal destruction Good condition Needs Maintenance Remarks	
2.	Gas Collection Wells, Manifolds and Piping □ Good condition□ Needs Maintenance Remarks	
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings) □ Good condition□ Needs Maintenance □ N/A Remarks	
F. Cov	ver Drainage Layer \Box Applicable \boxtimes N/A	
1.	Outlet Pipes Inspected □ Functioning □ N/A Remarks	
2.	Outlet Rock Inspected □ Functioning □ N/A Remarks	
G. Det	tention/Sedimentation Ponds	
1.	Siltation Areal extent Depth D Siltation not evident Remarks D	
2.	Erosion Areal extent Depth □ Erosion not evident Remarks	_
3.	Outlet Works □ Functioning Remarks	
4.	Dam □ Functioning □ N/A Remarks	

H. Retaining Walls		□ Applicable	⊠ N/A	
1.	Deformations Horizontal displacement_ Rotational displacement_ Remarks	□ Location show	'n on site map Vertical displac	Deformation not evident ement
2.	Degradation Remarks	□ Location show	n on site map	Degradation not evident
I. Per	imeter Ditches/Off-Site Di	scharge	□ Applicable	🖾 N/A
1.	Siltation □ Locat Areal extent Remarks	tion shown on site Depth	map □ Siltation	not evident
2.	Vegetative Growth □ Vegetation does not im Areal extent Remarks	□ Location show pede flow Type	'n on site map	□ N/A
3.	Erosion Areal extent Remarks	□ Location show Depth	n on site map	□ Erosion not evident
4.	Discharge Structure Remarks	□ Functioning	□ N/A	
	VIII. VEF	TICAL BARRIF	ER WALLS	∃ Applicable ⊠ N/A
1.	Settlement Areal extent Remarks	□ Location show Depth	'n on site map	□ Settlement not evident
2.	Performance Monitorin Performance not monit Frequency Head differential Remarks	gType of monitori ored	ing □ Evidence 	e of breaching

	IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A
A. G	roundwater Extraction Wells, Pumps, and Pipelines
1.	Pumps, Wellhead Plumbing, and Electrical □ Good condition□ All required wells properly operating □ Needs Maintenance □ N/A Remarks
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks
3.	Spare Parts and Equipment □ Readily available □ Good condition□ Requires upgrade □ Needs to be provided Remarks
B. S	urface Water Collection Structures, Pumps, and Pipelines
1.	Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances
3.	Spare Parts and Equipment □ Readily available □ Good condition□ Requires upgrade □ Needs to be provided Remarks

C.	Treatment System	□ Applicable	🛛 N/A	1		
1.	Treatment Train (Chec Description: Metals removal Air stripping Filters	k components that ☐ Oil/water sepa ☐ Carbo	apply) ration on adsor	□ Bioremediation bers	on	
	 Additive (e.g., chelation Others Good condition Sampling ports proper Sampling/maintenance Equipment properly id Quantity of groundwate Quantity of surface wate 	n agent, flocculent □ Needs Mainter ly marked and funct log displayed and entified er treated annually ter treated annually)nance tional up to da	te		
	Remarks					-
2.	Electrical Enclosures a □ N/A □ Goo Remarks	nd Panels (properl d condition□ Need	y rated a s Mainte	nd functional) nance		-
3.	Tanks, Vaults, Storage □ N/A □ Goo Remarks	Vessels d condition□ Prope	er second	lary containment	□ Needs Maintenance	-
4.	Discharge Structure an □ N/A □ Goo Remarks	d Appurtenances d condition□ Need	s Mainte	nance		-
5.	Treatment Building(s) □ N/A □ Goo □ Chemicals and equipm Remarks	d condition (esp. ro	oof and d	oorways)	□ Needs repair	-
6.	Monitoring Wells (pum Properly secured/locked All required wells location Remarks	p and treatment rer ed □ Functioning ted □ Need	nedy) □Rout s Mainte	inely sampled nance	□ Good condition □ N/A	-
D.	Monitoring Data					
1.	Monitoring Data	on time		Is of acceptable q	uality	
2.	Monitoring data suggest □ Groundwater plume is	s: effectively contain	ed 🗆	Contaminant conc	centrations are declining	

D. N	Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks			
	X. OTHER REMEDIES			
	If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
	XI. OVERALL OBSERVATIONS			
A.	Implementation of the Remedy			
	Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <u>Land use control signage remained intact since installation in 2015. Slope stability</u> <u>continues to pose a site access issue. The area upslope from the site continues to</u> <u>subside and actively be eroded. The location of the Former Water Supply Pumphouse</u> <u>appears to be an area of deposition. Road work was required to access the site via the</u> <u>easement in 2015 and 2016.</u>			
B.	Adequacy of O&M			
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <u>Not applicable to this site.</u>			
C.	Early Indicators of Potential Remedy Problems			
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. Not applicable to this site.			
D.	Opportunities for Optimization			
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. No opportunities have been identified for the site at this time.			



Photograph 1: SS002 Land use controls signage, view South.



Photograph 2: SS002 Water cistern subsidence area with Composite Building Foundation in the background, view North.



Photograph 3: SS002 Example erosional features bisecting landfill cap, view South.



Photograph 4: SS002 Southern landfill boundary, vegetation marking undisturbed land, view West.



Photograph 5: SS007 Land use controls signage, view East. Monitoring wells in background.



Photograph 6: SS007 Monitoring Well 6, with containment berm and Snuffy Creek immediately to the South, view South.



Photograph 7: SS007 Land use controls signage background, view East. Monitoring wells distributed along beach ridge to the North. Site worker standing on containment berm at South.



 Photograph 8:
 SS010 Land use controls signage background, view West. Site work pictured at the approximate location of the former Water Supply Pumphouse Foundation.

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Photograph 9: SS010 Land use controls signage and slope subsidence area at the former Water Supply Pumphouse Foundation, view West.



Photograph 10: SS010 Drainage running through former site, view South of West.

APPENDIX G ADEC 18 AAC 75.350 Determination for SS007 at Driftwood Bay Radio Relay Station (RRS) Sites. August, 2017.





Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE Contaminated Sites Program

> 555 Cordova Street Anchorage, AK 99501 Main: 907-269-7552 Fax: 907-269-7687 www.dec.alaska.gov

File No.: 2541.38.001

August 16, 2017

Robert Johnston AFCEC/CZOP 10471 20th Street, Suite 347 Elmendorf AFB, AK 99506-2201

RE: Groundwater Use Determination for Site SS007 (Former Fuel Storage Area at Beach) – Driftwood Bay RRS, Alaska dated November 16, 2016

Dear Mr. Johnston:

The Alaska Department of Environmental Conservation (ADEC), has reviewed the request for approval of a groundwater use determination under 18 Alaska Administrative Code (AAC) 75.350 at the Driftwood Bay RRS SS007 POL Tank Area (CS Database Hazard ID 96).

SS007 is located 15 miles away from the nearest developed private or public drinking water source, which is located in Unalaska, Alaska. SS007 is remote and site access is limited. SS007 is located along the coastline of Driftwood Bay and bordered on the south by Snuffy Creek. Groundwater flows to the north/northwest toward the Bering Sea. Conductivity measured in all of the well points exhibited a positive correlation with tidal water levels, supporting the influence of seawater on groundwater at SS007, resulting in economically impractical water source. Groundwater transmissivity is dependent on tidal variations at SS007.

The extent of contamination is constrained to property held by the USAF under a public land order. Under the land order, access to SS007 and land use activities are limited. Groundwater development at SS007 is likely economically prohibitive when low cost alternatives, specifically plentiful surface water resources, are readily accessible.

Based on the information provided, ADEC has determined that groundwater at SS007 is not considered a drinking water source as outlined in 18 AAC 75.350. ADEC's determination is contingent upon receipt of written documentation by ADEC that land use controls prohibiting well installation and groundwater use at SS007 have been incorporated in the 611th CES Land Use Control Management plan and written documentation that the notice of environmental contamination has been placed in Alaska Department of Natural Resources' land records for SS007.

If you have any questions on this letter or wish to set up a comment review meeting, please contact Louis Howard at 907-269-7552 or louis.howard@alaska.gov.

Sincerely,

Jennifer Roberts

Program Manager Contaminated Sites Program

cc: Kim DeRuyter via email Louis Howard via email