RCRA AK9 69033 0742
Attachment 10, Appendix E - Site 6B
Land Use Control Implementation Plans

U.S. Coast Guard Base Kodiak
Kodiak, Alaska

Prepared for:

U.S. Coast Guard

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ACRONYMS AND ABBREVIATIONS

%	percent
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation and Public Facilities
Ahtna	Ahtna Environmental, Inc.
AK DOT	Alaska Department of Transportation
AS	air sparge
AST	aboveground storage tank
AVGAS	Aviation Gasoline
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and xylenes
CA	corrective action
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DNAPL	dense non-aqueous phase liquid
DoD	U.S. Department of Defense
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
FUDS	Formerly Used Defense Sites
FS-6	fuel oil, burner grade number 6
GAC	granular activated carbon
HMWU	Hazardous Waste Management Unit
Jacobs	Jacobs Engineering Group Inc.
JP-5	jet propellant number 5
KEA	Kodiak Electric Association
KMnO4	potassium permanganate
LOWS	Liquid Oily Waste System
LTM	long-term monitoring
LUC	land use control
LUCAP	Land Use Control Assurance Plan
LUCIP	Land Use Control Implementation Plan
mg/kg	milligrams per kilogram
mL	milligrams per liter
MNA	monitored natural attenuation
MOGAS	motor gasoline
MWR	Morale, Welfare, and Recreation
NAPL	non-aqueous phase liquid
NDAI	No DoD Action Indicated
No.	number

ACRONYMS AND ABBREVIATIONS (CONTINUED)

PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PFAS	per- and polyfluoroalkyl substances
POL	petroleum, oil, and lubricants
ppbv	parts per billion by volume
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
S&W	Shannon & Wilson
SAA	satellite accumulation area
SAIC	Science Applications International Corporation
SVE	soil vapor extraction
SVOC	semi-volatile organic compound
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TPH	total petroleum hydrocarbon
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
Windward	Windward Environmental LLC
WWII	World War Two

5.0 SITE 6B – NYMAN PENINSULA FUEL FARM

This LUCIP for Site 6B – Nyman Peninsula Fuel Farm is the document that implements the specific requirements for this site under the LUCAP for Environmental Cleanup Activities for Base Kodiak. It describes the site, location, and remedial actions undertaken, and provides the LUC objectives and means by which the objectives will be achieved. Where necessary, references are made to required activities that apply to all sites under the facility-wide LUCAP.

5.1 Site Location

Site 6B, the Nyman Peninsula Fuel Farm (Fuel Farm), is located on the southeast side of the Base and spans the central, elevated portion of Nyman Peninsula (Figure 1).

5.2 Site Description

During World War Two (WWII), the U.S. Navy established a base on Kodiak Island to protect the Gulf of Alaska and serve as an intermediate point between installations at Cold Bay and Sitka. The Fuel Farm has been the major bulk storage facility at the Base since the original construction of the Naval Station. The Fuel Farm consists of several areas (Figures 6 and 7):

The FS-6 (fuel oil, burner grade number 6) area was primarily used to store FS-6 "heavy" naval fuel. In 2001, aboveground storage (AST) Tank 172 was demolished. Between 1998 and 2001, USTs 166, 167, 169, 170, 171 were decommissioned, and the piping, heater pits, and valve stations associated with these tanks were cleaned and decommissioned. Aboveground and belowground pipelines associated with operation of the decommissioned tanks were abandoned in place or removed. The FS-6 area is no longer being actively used for fuel storage; however, on the opposite side of access road west of Tank 2, two fuel lines with a cathodic protection continue to be actively used. Tank 168 has been refurbished and recommissioned for spill response additional storage.

The JP-5 (jet propellant number 5) area consists of decommissioned fuel storage facilities and some that are still in use. Between 1943 and 1959, JP-5 and diesel Tanks 194 through 197 were removed. In 1999, reinforced concrete UST Tanks 191 through 193 were cleaned and decommissioned. Pipelines to/from the decommissioned tanks were drained and capped or removed. Three steel AST tanks (N10, N12, and N60) are still in active use of storage of JP-5 fuel. Former Tanks 195 and 196 were located where current tanks N10/N12 and associated infrastructure are currently located.

The 6B Site slopes steeply down to Womens Bay on the east and Inner Womens Bay on the west. To the south, the site is bounded by Tillamook Rock Cutoff and is located adjacent to Peninsula Lake.

Site soils consist of variable thicknesses of artificial fill, peat deposits, compact glacial till, and weathered bedrock, over bedrock. The elevation of the bedrock at the site and the depth to bedrock are both variable throughout the site. Site groundwater, when present, is generally encountered in perched layers on either bedrock or the lower permeability till, with depths ranging from 2 to 20 feet. In July 2002, the ADEC issued a determination that groundwater on the Nyman Peninsula, and on Site 6B, is not a suitable current or future water source. Surface water generally follows land topography and flows east or west off the ridge line thorough drainages into Peninsula Lake, Womens Bay, or Inner Womens Bay.

Since 1995, soil contamination by petroleum products has been identified at the site, which reportedly resulted from leakage from the tanks or spills during fuel transfer. Between 1995 and 2003, the

contamination range and characteristics were assessed. As noted above, decommissioning and cleaning/removal of tanks and associated equipment also took place prior to and during this period. In 2004 an interim action plan was developed to remove, properly treat, and dispose of petroleum contaminated soils from Site 6B, and restore the site to surrounding grade for possible future development.

In 2004, soil was excavated near Tanks 169, 170, 171, 172, 191, and 192 and thermally treated. Post-excavation confirmation samples indicated that ADEC Method Two Soil cleanup levels for soil were met for all source areas, with the exception of Tanks 172 and 192 (Hart Crowser 2005).

In 2005, soil was excavated near the former Tank 172 and N-11 pump house/oil-water separator areas and thermally treated. Approximately 4,900 tons of soil was excavated near the former Tank 172 location and approximately 1,500 tons near the N-11 pump house/OWS. Post-excavation confirmation samples collected at both locations indicate that neither ADEC Method Two cleanup levels nor less stringent site alternative cleanup levels were met. As a result, further action was recommended for both locations (Hart Crowser 2006).

In 2006, additional soil was excavated near the N-11 pump house/OWS area. Soil samples were also collected near the previously remediated area surrounding Tank 172. Post excavation samples collected from the N-11 pump house area and the Tank exceeded ADEC Method Two cleanup levels and site alternative cleanup level. As a result, further action was recommended (Clarus 2007).

In 2004, free product recovery for Site 6B began with the installation of a passive skimmer in monitoring well MW-6B-105. Between 2004 and 2008, absorbent socks and bailing were used in addition to the passive skimmer to collect free product. The total amount of free product collected by the end of 2008 was 23.120 liters. In 2009, additional wells were installed for free product recovery. As of January 2012, a total of 26.26 liters of product had been recovered through this effort (Windward 2012a).

A Supplemental RFI is planned at Site 6B for 2021. As a precursor to the Supplemental RFI, a Current Conditions Report (USCG 2019) is being prepared and will be finalized by Fall 2020. The Current Conditions Report was developed to provide summary of the existing impacts to the environment at Site 6B.

5.3 Site Remedy

In 2013, a Final Interim Measure Report (Windward 2012b) was submitted to the EPA but no comments have been received. The proposed remedy for 6B is continued periodic product removal at monitoring well MW-6B-105 and implementation of institutional controls, although no remedy has been selected for the site.

5.4 Land Use Control Objective

To remain protective of human health and the environment, the property is restricted to industrial use, with engineering controls in place to limit access to petroleum-contaminated soils. The areas affected by these restrictions are shown on Figures 6 and 7.

5.5 Specific Land Use Implementation Measures

For Site 6B, Nyman Peninsula Fuel Farm, the LUCs consist of the following:

- Any intrusive activity at this site will require review and approval by Base Kodiak Environmental Division, on behalf of the Facilities Engineer, and appropriate measures taken for the type of

intrusive activity. Dig permit issuance will require notification of the contractor that petroleum contaminated soil may be present and appropriate worker health and safety measures must be taken.

- Any soils removed for utility or other work must be tested for the presence of petroleum above ADEC Method Two cleanup levels prior to offsite disposal.

5.6 Annual Reports and Five-Year Reviews

The annual report for this site will be prepared in accordance with the LUCAP, Section 9.0, using the results of the inspection items identified in Exhibit 5(a) of this LUCIP.

5.7 References

The reader is referred to the following documents for additional information and background on this site:

Chugach Management Services, Inc. 2001 (December). *Final After-Action Report for Nyman Fuel Farm Decommissioning Phase III.* Prepared for Pacific Facilities Design and Construction Center, USCG.

Clarus. 2007. *2006 Interim Action Report: Site 6B – FS-6 and JP-5 Tanks Area, Site 9– Former AVGAS Tanks Area, USCG ISC Kodiak, Kodiak, Alaska.* Prepared for USCG.

Hart Crowser. 2004 (June). *Interim Action Plan Site 6B - FS-6 and JP-5 Tanks USCG Integrated Command Kodiak, Kodiak, Alaska.* Prepared for USCG.

Hart Crowser. 2005 (January). *2004 Interim Action Report Site 6B - FS-6 and JP-5 Tanks, USCG Integrated Support Command Kodiak, Kodiak Island, Alaska.* Prepared for USCG.

Hart Crowser. 2006 (January). *2005 Interim Action report Site 6B - FS-6 and JP-5 Tanks USCG Integrated Support Command Kodiak, Kodiak, Alaska.* Prepared for USCG.

USCG. 2019 (October). *Current Conditions Report, Solid Waste Management Unit Site 6B.*

Windward. 2012a. *Free Product Monitoring and Recovery Quarterly Report – Sites 6B and 10/11, October 2011 through December 2011, USCG Base Kodiak, Kodiak, Alaska.* Prepared for USCG.

Windward. 2012b (October). *Site 6B Final Interim Measures Report USCG Base Kodiak, Kodiak, Alaska.* Prepared for USCG.

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Exhibit 5(a) Site 6B – Nyman Peninsula Fuel Farm Land Use Controls Annual Inspection List

Date:	**Date of Previous Inspection:**
Name:	**Date of Next Inspection:**

LAND USE CONTROL	INSPECTION ITEMS AND FINDINGS
Any intrusive activity at this site will require review and approval by Base Kodiak Environmental Division, on behalf of the Facilities Engineer, and appropriate measures taken for the type of intrusive activity. Dig permit issuance will require notification of the contractor that contaminated media may be present and appropriate worker health and safety measures must be taken.	Have any dig permits been issued for this area in the last year? Yes No Have contractors been notified of presence of contaminated medias, and have health and safety plans been prepared as appropriate? Yes No
Any soils or cover materials removed for utility or other work must be replaced to prevent potential human health exposures. Soils must be tested for petroleum hydrocarbons prior to disposal.	If removed during intrusive activities, have soils been appropriately handled? Yes No
The USCG will notify EPA and ADEC upon the discovery of any unauthorized change in land use.	Did any unauthorized land use changes occur within the last year? Yes No On what date were the regulatory authorities notified?
Comments:	

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Exhibit 5(b) Site 6B – Nyman Peninsula Fuel Farm Land Use Controls
Five-Year Review Criteria

Date:	**Date of Previous Inspection:**
Name:	**Date of Next Inspection:**

Every five years, the facility will prepare a review of the remedy effectiveness and submit the report to the implementing agency. Site specific reports will be combined and submitted as a single package to implementing agencies.

Procedure for five-year review:

- Confer with Base Kodiak Commanding Officer to determine if any change in land use is anticipated in the next five years.
- Evaluate current regulatory policies and requirements for closing sites with contaminants or waste in place.
- Have any factors change to impact risk (e.g., report of a new release, construction, significant erosion)
- Have cleanup levels changed?
- Should LUCs be amended or removed?
- Review actions taken in response to the annual checklist to determine if repetitive problems are present that would benefit from an alternate solution.

Once the above steps have been taken, prepare a report addressing each one of the bulleted items and place in the LUC File.

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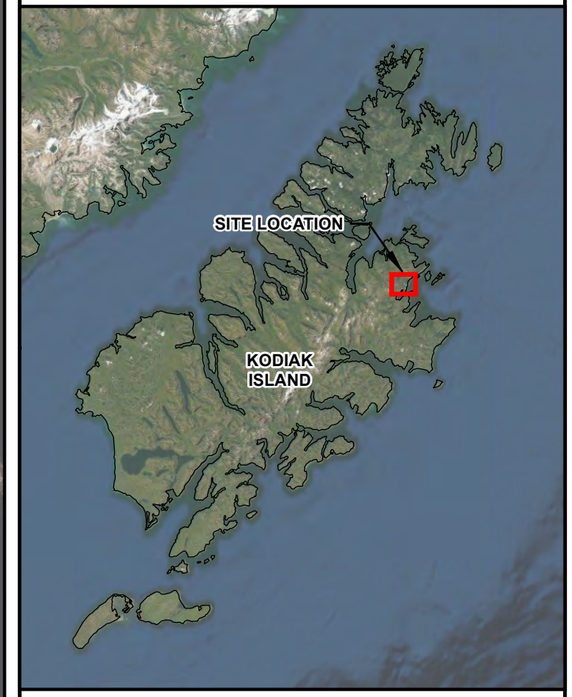
1 INCH

LAND USE CONTROL IMPLEMENTATION PLAN
USCG BASE KODIAK, KODIAK, ALASKA

LUCAP INSPECTION SITES

ANTON LARSEN BAY RD
BUSKIN LAKE
BUSKIN RIVER
SITE 12
SITE 1
SITE 2
SITE 34
LAKE CATHERINE
BOY SCOUT LAKE
LAKE LOUISE
STILES RD
REZANOF HWY
SITE 35
KODIAK AIRPORT
SITE 18
MAIN GATE
DEVIL'S CREEK
SITE 28
SITE 10/11
ST. PAUL HARBOR
SITE 3
SITE 23
SITE 33A
SITE 9
SITE 7A
WOMENS BAY (INNER BASIN)
SITE 6A
SITE 6B
WOMENS BAY (OUTER BASIN)
NYMAN PENINSULA
N



Legend
- Land Use Control
- River/Creek
- Roads
- Lake

References
1. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

ALASKA STATE PLANE COORDINATE SYSTEM ZONE 5, US FEET
HORIZONAL DATUM: NAD83 (2011) | VERTICAL DATUM: NAVD88

0.5 0.25 0 0.5 1
SCALE IN MILES

PROJECT No.: 680411	DATE: 8/20/2020	FIGURE: 1
P.M.: CS	DRAWN: CMH	

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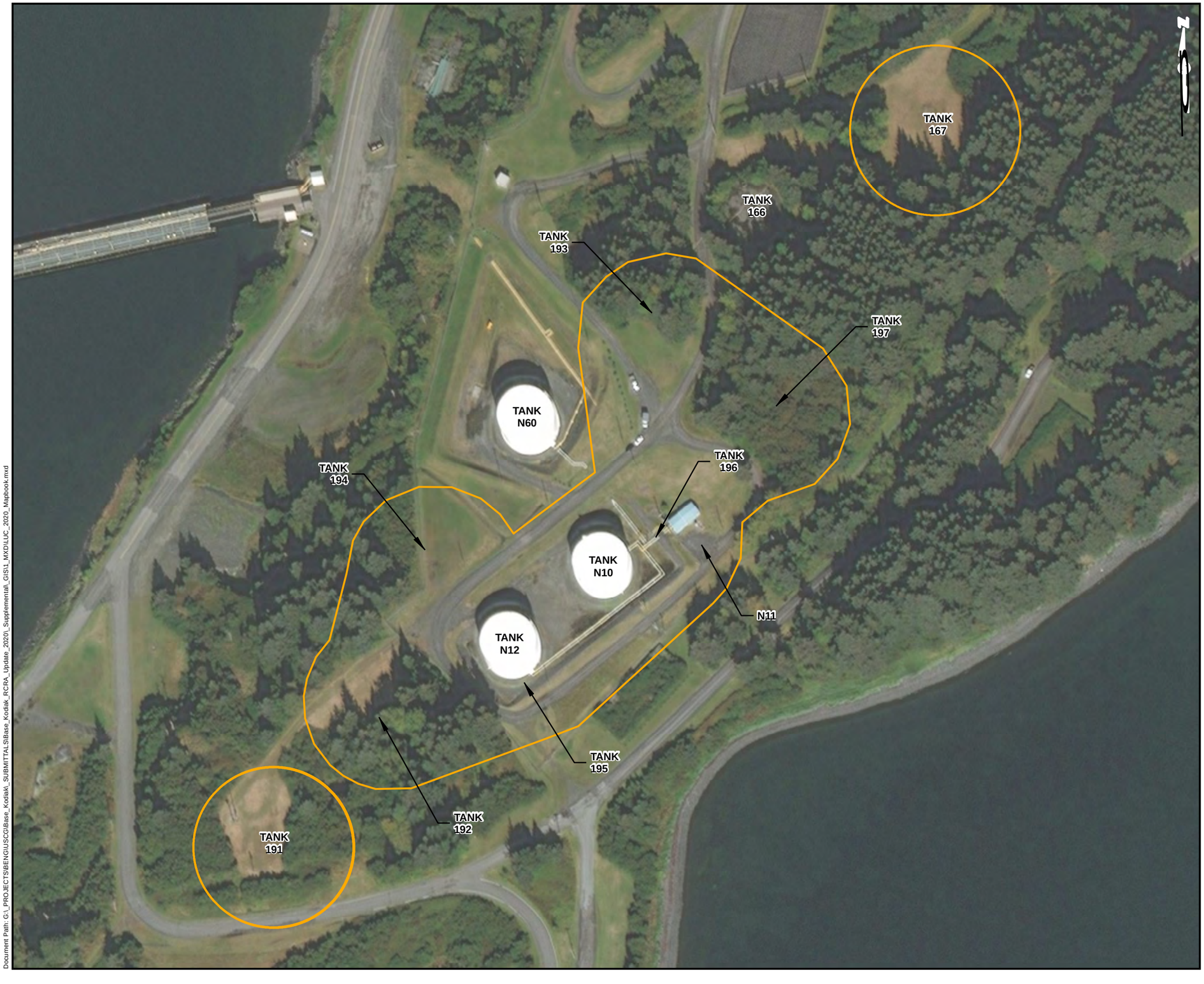
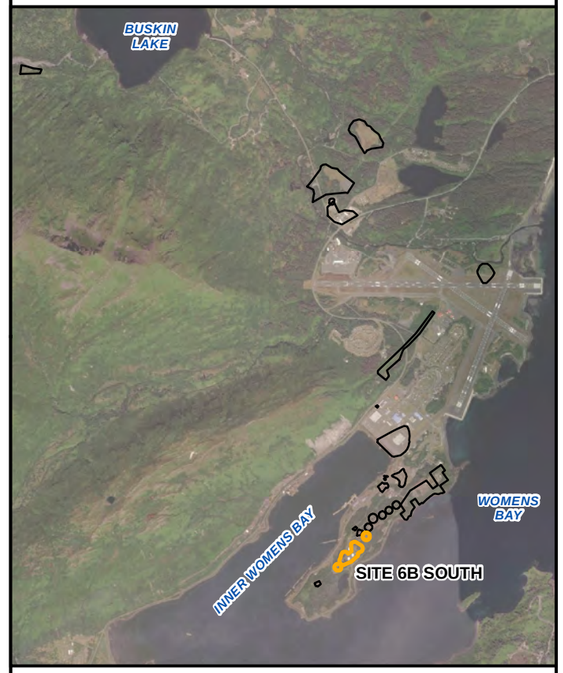
1 INCH

LAND USE CONTROL IMPLEMENTATION PLAN

USCG BASE KODIAK, KODIAK, ALASKA

SITE 6B





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Land Use Control

References

1. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

ALASKA STATE PLANE COORDINATE SYSTEM ZONE 5, US FEET

HORIZONAL DATUM: NAD83 (2011) | VERTICAL DATUM: NAVD88

150 75 0 150 300

SCALE IN FEET

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P.M.: CS	DRAWN: JC	

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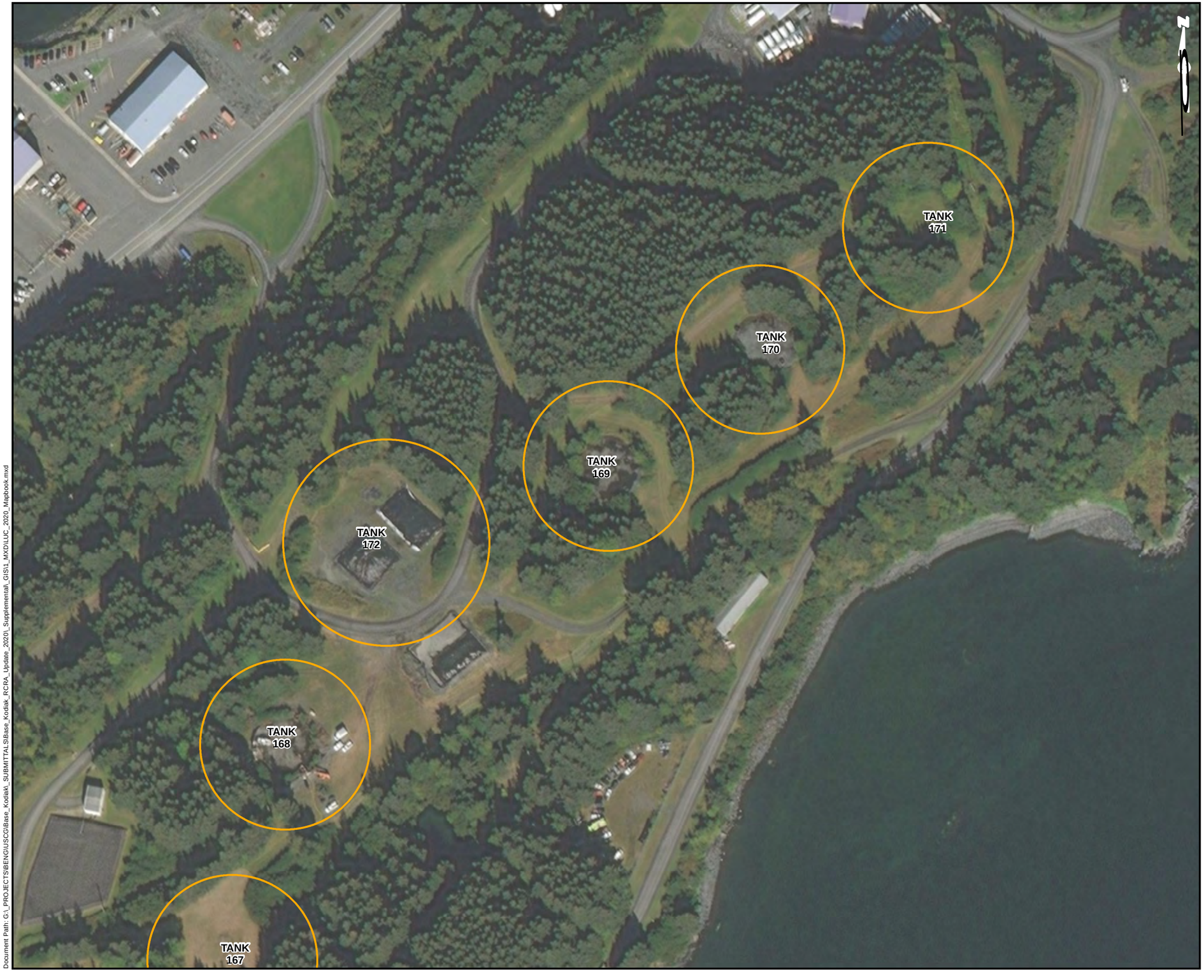
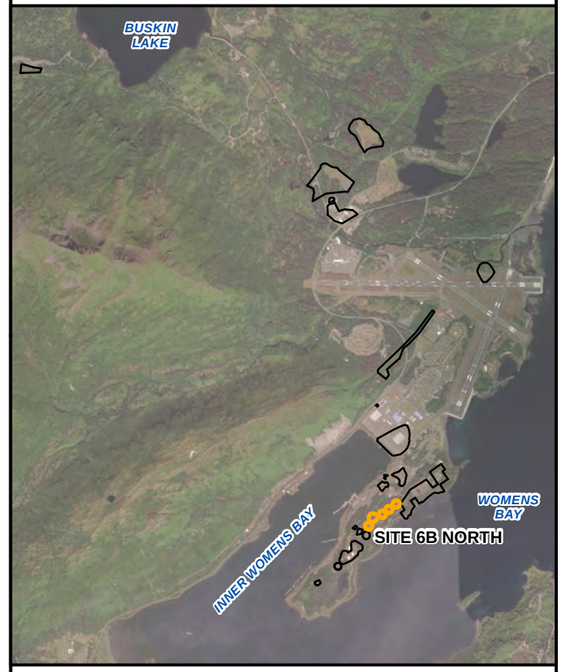
LAND USE CONTROL IMPLEMENTATION PLAN

USCG BASE KODIAK, KODIAK, ALASKA

SITE 6B





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Land Use Control

References

1. Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

ALASKA STATE PLANE COORDINATE SYSTEM ZONE 5, US FEET
HORIZONAL DATUM: NAD83 (2011) | VERTICAL DATUM: NAVD88

150 75 0 150 300

SCALE IN FEET

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