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# Project Closeout Report

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Containerized Hazardous, Toxic, and Radioactive Waste Project  
#F10AK0606-11

*C3, C4 - Point Carrew Garrison Area*

Yakutat Air Base Formerly Used Defense Site  
Yakutat, Alaska

January 2022



Prepared By:  
U.S. Army Corps of Engineers - Alaska District  
Environmental Engineering Branch  
P.O. Box 6898  
JBER, Alaska 99506-0898



## TABLE OF CONTENTS

1.	INTRODUCTION .....	1
1.1	SITE LOCATION AND BRIEF DESCRIPTION.....	1
1.2	YAKUTAT AIR BASE HISTORY .....	1
1.3	AREAS OF CONCERN C3 & C4 WWII HISTORY.....	2
1.4	AREAS OF CONCERN C3 & C4 POST-WWII HISTORY .....	3
1.5	REMEDIAL INVESTIGATIONS & ACTIONS AT AOCs C3 & C4.....	3
2.	SUMMARY OF DECISION .....	5
3.	REFERENCES .....	5

## LIST OF FIGURES

FIGURE 1 – LOCATION AND VICINITY MAP

FIGURE 2 – WWII YAKUTAT LANDING FIELD LAYOUT PLAN (1943)

FIGURE 3 – YAKUTAT RI AOC LAYOUT & SAMPLE RESULTS (2000)

FIGURE 4 – YAKUTAT RI AOCs C2 & C4 TEST PIT LOCATIONS & OBSERVATIONS (2016)

FIGURE 5 – YAKUTAT AOC C3/C4 REMOVAL ACTION FINAL RESULTS AND AOCs C3/C4 & C2 BOUNDARY

## LIST OF ATTACHMENTS

ATTACHMENT 1 – DECLARATION OF PROJECT CLOSURE DECISION

## Acronyms and Abbreviations

ADEC	Alaska Department of Environmental Conservation
AOC	Area of Concern
bgs	Below ground surface
CAA	Civil Aeronautics Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CON/HTRW	Containerized Hazardous, Toxic, and Radioactive Waste
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
FDE	Findings and Determination of Eligibility
FUDS	Formerly Used Defense Sites
GOCO	Government Owned, Contracted Operated
GRO	Gasoline Range Organics
HTRW	Hazardous, Toxic, and Radioactive Waste
INPR	Inventory Project Report
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
OCRRS	Ocean Cape Radio Relay Station
PAHs	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyl
RCA	Radio Corporation of America
RI	Remedial Investigation
SI	Site Inspection
START	Superfund Technical Assessment and Response Team
TRPH	Total recoverable petroleum hydrocarbon
ug/kg	Micrograms per kilogram
USACE	United States Army Corps of Engineers
WWII	World War II
YTT	Yakutat Tlingit Tribe

## **1. INTRODUCTION**

The legislation establishing the Defense Environmental Restoration Program (DERP), established pursuant to section 2701(a)(1) of title 10, United States Code, authorizes the Secretary of Defense to carry out response actions with respect to releases, or threatened releases, of hazardous substances at sites that were owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary at the time of the release and that were transferred from DoD control prior to 17 October 1986.

In 2015 a revised Inventory Project Report (INPR) was completed to delineate the existing -02 Hazardous, Toxic, or Radioactive Waste (HTRW) project into multiple containerized HTRW (CON/HTRW) projects (F10AK0606-04 through -19). CON/HTRW project -11 for the *C3, C4 – Point Carrew Garrison Area*, was created during this delineation and authorized in 2017. Alaska Department of Environmental Conservation (ADEC) includes Areas of Concern AOCs C3 and C4 in the “Yakutat AFB Point Carrew Garrison OU”. The ADEC File No. is 1530.38.011 and the Hazard ID is 1986.

CON/HTRW Project F10AK0606-11 is recommended for project closeout by the United States Army Corps of Engineers, Alaska District (USACE) based on the conclusions of the 2019 and 2020 removal action reports that the site no longer contains contamination at levels posing an imminent and substantial endangerment to human health or the environment.

This Project Closeout Report is issued by USACE pursuant to ER 200-3-1, paragraph 4-7.4.1.1.

### **1.1 SITE LOCATION AND BRIEF DESCRIPTION**

Yakutat, Alaska is approximately 225 miles northwest of Juneau and 380 miles southeast of Anchorage, Alaska at 59° 33' N Latitude, 139° 44' W Longitude (Section 30, Township 27 South, Range 34 East, Copper River Meridian). Located at the mouth of Yakutat Bay, the community is bounded by the Wrangell-Saint Elias Mountains and Yakutat Bay to the north, the Tongass National Forest to the south and east, and the Gulf of Alaska to the west (Figure 1). The FUDS sites, scattered around the Yakutat Air Base, are not connected via road to other permanent Southeast Alaska communities, and are only accessible by air or water.

### **1.2 YAKUTAT AIR BASE HISTORY**

U.S. military interest in Yakutat began by Executive Order in 1929 with the creation of the Yakutat Bay Naval Reservation. As early as 1936, the War Department was considering Yakutat as a site for a military airfield. Soon after World War II (WWII) began in Europe (September 1939) the Civil Aeronautics Administration (CAA) embarked on a program of building and improving airfields in Alaska with both commercial and tactical values in mind. The first government use of the area was a CAA radio range commissioned in June 1940 on a site near Yakutat village. The War Department acquired 46,083 acres from the Department of the Interior (U.S. Forest Service), Department of the Navy, and the Department of Commerce (Lighthouse Reserves) for the establishment of an "Auxiliary Landing Field and Staging Area". In October 1940, Army Engineer troops arrived to begin construction of the Yakutat Landing Field (also known as the Yakutat Air Base). Constructed

by military engineers and members of the Civilian Conservation Corps, the landing field was completed on June 15, 1943.

The Yakutat Air Base was intended as an advanced airfield supporting pursuit and bombardment aircraft against Japanese invasion forces. However, as western Aleutian bases expanded and the Japanese were stopped on Attu and Kiska, its military value diminished significantly, and no aircraft were permanently assigned. Instead, the base served as a ferrying post and temporary station for aircraft squadrons and as a refueling stop between the 48 contiguous states and points in Alaska.

In December 1943, after the Japanese were expelled from the Aleutians, military activities were gradually reduced with personnel and equipment being transferred elsewhere. In April of 1944, the Yakutat Air Base was placed in caretaker status until the end of the war. A similar reduction took place at the seaplane base, which was officially closed on July 22, 1944.

The Yakutat Air Base was declared surplus by the Army in December 1945 and ceased operations in 1946. On December 1, 1945, the CAA assumed responsibility for maintenance and operation of the airfield, leading to the transfer of the airfield and its associated facilities from the Army to CAA on April 4, 1947. The improvements, equipment, and materials that were not transferred to the CAA were declared excess by the War Department to the War Assets Administration for disposal in June 1948, pursuant to the Surplus Property Act of 1944.

Beginning in 1946, ownership of the air base property was relinquished and retransferred to the original owners: Department of the Interior, Bureau of Land Management (Tract B containing 42,437 acres - in two portions: July 1946 and March 1947), the Department of Commerce (Tract C, 147 acres – November 1948), and the Department of the Navy (Tract A, 3,500 acres – March 1949). When the Yakutat Bay Naval Reservation was revoked in 1953, 266 acres were withdrawn for the use of the CAA, known as the Air-Navigation Site Withdrawal, and the remaining acreage was returned to the Tongass National Forest.

### **1.3 AREAS OF CONCERN C3 & C4 WWII HISTORY**

The AOCs C3 and C4 are located on Phipps Peninsula north of Ankau Slough, approximately 1.2 miles from Ocean Cape. The AOCs are approximately 59.550568° North Latitude and -139.839415° West Longitude (Figure 1). Historical layout plans from 1943 show an access road leading to a powerhouse and Building No. 1035 (Figure 2). A small Coast Artillery outpost, comprised of a base end station and harbor entrance control point, operated at Ocean Cape briefly during World War II. Constructed in 1942 by the 244th Coast Artillery Corps as part of the harbor defense installations at Point Carrew, base end stations were positioned at Ocean Cape and Khantaak Island to cover the entrance to Yakutat Bay. The radar installation was started in February 1943 and completed by September. By mid-summer 1943, tactical operations were reduced because Alaska action had shifted so far to the west that the possibility of enemy attack had dwindled. In September 1943, the Coast Artillery garrison troops were transferred westward except for a small detachment left to operate the radar installation. That personnel transfer permitted the closing down of the Point Carrew garrison area except for the Ocean Cape outpost. The radar installation was in operation for about three months before it was disassembled and shipped to another station.

Yakutat Landing Field layout plans from 1943 show a powerhouse near the northside of Point Carrew Road, approximately 1.4 miles from Ocean Cape.

#### 1.4 AREAS OF CONCERN C3 & C4 POST-WWII HISTORY

After the war the access road leading to a powerhouse and Building No. 1035 was left intact. This road access provided for easy dumping after DoD relinquished control of the site in 1948. AOCs C3 and C4 consist of a small contiguous area. During the initial FUDS investigation, multiple AOCs were designated in the vicinity based on potential sources of contamination. AOCs C3 and C4 are proposed to be closed in this report. The adjacent AOC C2 is not included in this project and will be addressed separately. In general, C2 is on the east side, C3 in the middle, and C4 on the west side of the area (Figure 3). In some RI reports the overall area is treated as one site, and in others there is ambiguity in differentiating the AOCs, but typically AOCs C3 & C4 are treated as one site while C2 is another.

**AOC C3.** AOC C3 is the area around the former WWII powerhouse, Building No. 1035 foundations and former fuel storage tank associated with the buildings.

**AOC C4.** AOC C4 is the area south and west of AOC C3 which had partially buried, severely rusted pipes, gasoline cans, 55-gallon drums, and other surface debris. The debris was attributed to be from WWII.

**AOC C2.** AOC C2 is the location of a dumpsite east of the former powerhouse and Building No. 1035. AOC C2 and consists of a flat, relatively open area with surrounding surface water ponds and muskeg. There is evidence that AOC C2 was an unauthorized dump during the operations (1960-1976) of the nearby Ocean Cape Radio Relay Station (OCRRS). The OCRRS has been identified as a Potential Responsible Project (PRP) and therefore any further DoD action at AOC C2 will be conducted under the HTRW/PRP FUDS Property F10AK0747-04, *OCEAN CAPE RR SITE, Ocean Cape RR GOCO*. AOC C2 is not being closed at this time.

#### 1.5 REMEDIAL INVESTIGATIONS & ACTIONS AT AOCs C3 & C4

**1984 Debris Removal.** USACE removed military-generated surface debris from AOCs C2/C3/C4 during an area-wide debris cleanup and site restoration project in 1984 (USACE, 1984). This debris reportedly included a debris pile, multiple 55-gallon drums, and miscellaneous trash.

**1994 USACE Field Investigation.** In 1994 USACE conducted a field investigation at AOC C2. One sediment sample was collected near a potentially leaking drum located in the surface debris area. Petroleum odor and a fuel sheen were generated when adjacent sediment was disturbed. Diesel Range Organics (DRO) test results from that sample were estimated at 4,700 mg/kg. Total recoverable petroleum hydrocarbon (TRPH) and Gasoline Range Organics (GRO) were also detected at 9,000 and 29 mg/kg, respectively. DRO and TRPH sample results were estimated because the high concentration of fuel in the sample diluted the matrix spike. GRO sample results were estimated because the chromatogram did not match the typical gasoline fingerprint. It was estimated the area of contaminated sediment associated with the landfill to be 1,000 square feet. The depth of contamination was not determined.

**1997 EPA START Site Inspection (SI).** In 1997 the Environmental Protection Agency (EPA), Region 10 conducted a Superfund Technical Assessment and Response Team (START) Site Inspection (SI) at the Point Carrew Garrison drum dump (AOC C2). Elevated levels of bis(2-ethylhexyl)phthalate (150 ug/kg), 4,4'-dichlorodiphenyldichloroethane (34,500 ug/kg), aldrin (6,770 ug/kg), Aroclor 1242 (1300,000 ug/kg JK\*), Aroclor 1260 (71,000 ug/kg), and lead (29.9301 ug/kg) were detected at the Point Carrew garrison drum dump. None of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-regulated contaminants detected exceeded regulatory guidelines (EPA 1997). \*J= Estimated. K= Unknown biased.

**1997 YTT Field Investigation.** In 1997 YTT conducted a field investigation at the site. A water sample collected from the trench in the landfill in AOC 2 (24-03) was analyzed with a detectable concentration of the PCB Aroclor 1242 (0.051 mg/L) (AGRA 1997).

**2000 USACE Remedial Investigation.** During a 2000 Remedial Investigation (RI) USACE performed analytical sampling of soil, surface water and groundwater. The sampling included the previously detected chemicals, bis(2-ethylhexyl)phthalate, 4,4'-dichlorodiphenyldichloroethane (DDD), aldrin, Aroclor 1242, Aroclor 1260, and lead. A maximum concentration of 2,400 mg/kg DRO in soil was reported, exceeding the 230 milligrams per kilogram (mg/kg) ADEC Method 2 cleanup level. All groundwater analytical results were below ADEC groundwater cleanup levels (USACE, 2003).

**2006 USACE Remedial Investigation.** A 2006 RI delineated the extent of DRO contamination using a rapid optical screening tool (ROST)/laser-induced fluorescence (LIF) technology. The results showed one medium size plume at AOC C2 and one hot spot area at AOC C4 (USACE, 2006). Correlation samples were analyzed for GRO, DRO and Residual Range Organics. At AOC C2, DRO exceeded the ADEC cleanup level at one location (646 mg/kg), and at AOC C4 there were two exceedances at 1,720 and 2,400 mg/kg.

**2016 USACE Supplemental Remedial Investigation.** In 2016 USACE conducted a supplemental RI to further delineate the DRO contamination in soil and resampled the groundwater. The RI also identified polynuclear aromatic hydrocarbon (PAH) soil contamination at both AOC C2 and C4. At AOC C4, soil contamination extends from the surface through the vadose and saturated zones.

Debris identified in test pits at AOC C2 during the RI includes glass bottles, cans, plastic bags, shoes, oil filters, tires, lumber, scrap metal, pipes, steel cable, and plastic sheeting. At AOC C2, a lens of soil contamination was found to start about 2 feet below ground surface (bgs) and extend to about 7 feet bgs. Used oil filters and oily waste were commingled with soil and are the likely source of contamination (Figure 4) (USACE 2016).

**2018 Removal Action.** In 2018, USACE excavated and disposed of approximately 740 tons of DRO and PAH contaminated soil at AOCs C3 and C4. The excavation was advanced to the vertical boundary between AOCs C3/C4 and C2. Analytical sidewall soil samples between AOCs C3/C4 and AOC C2 indicated that DRO and PAH contaminated soil remained in AOC C2. The remaining contamination on the boundary will be addressed as part of the work conducted on AOC C2. All the confirmation soil samples, and other sidewall samples contained analytes less than the ADEC

Method 2, Table B2 cleanup levels, confirming that soil removal has been completed for AOCs C3 and C4 (Figure 5).

One source and one downgradient groundwater monitoring well was installed at AOC C4 after the removal action was complete. Analytical groundwater results indicated that the source monitoring well did not contain analytes above cleanup levels, while the downgradient well (18C4-MW02) contained DRO (2.16 mg/L) in excess of the ADEC Table C Groundwater Cleanup Level (1.5 mg/L). The ecological Conceptual Site Model and an Ecoscoping forms were updated and reported no remaining unacceptable ecological risk (USACE 2019).

**2020 Removal Action.** As part of 2020 Removal Action, USACE re-developed and resampled the two groundwater monitoring wells at AOC C4. Both monitoring wells were sampled for PAHs and DRO. PAHs were not detected in either well, DRO was not detected in the source well, but was detected at a concentration of 0.456J mg/L in the downgradient well, below the groundwater cleanup level of 1.5 mg/L DRO. After sampling, all the groundwater wells for AOCs C3/C4 were decommissioned (USACE 2021). Based on the resampling results from the monitoring wells there is no remaining unacceptable human health or ecological risk.

Based on the 2018 Removal Action and the resampling of the monitoring wells in 2020, the site cleanup is complete. Accordingly, no further DoD action is warranted at the *C3, C4 – Point Carrew Garrison Area Surface Debris* site.

## 2. SUMMARY OF DECISION

Based on the results of the 2018 and 2020 Removal Action reports, USACE has determined that no further DoD action is required at the *C3, C4 – Point Carrew Garrison Area Surface Debris* (F10AK0606-11), and project closeout is protective of public health, welfare, and the environment.

This decision may be reviewed and modified in the future if any new information becomes available indicating the presence of eligible CON/HTRW that may cause an unacceptable risk, or pose an imminent and substantial endangerment, to human health or the environment.

## 3. REFERENCES

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U.S. Army Corps of Engineers (USACE). 1942. Yakutat Army Air Base, Plot Plan Harbor Battery, Dec 10, 1942, N-59A-42, YAK FO/82, Y-64. F10AK0606--\_01.04\_0502\_a.

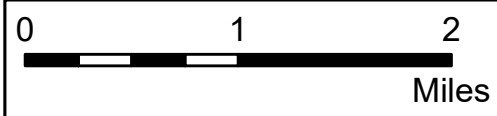
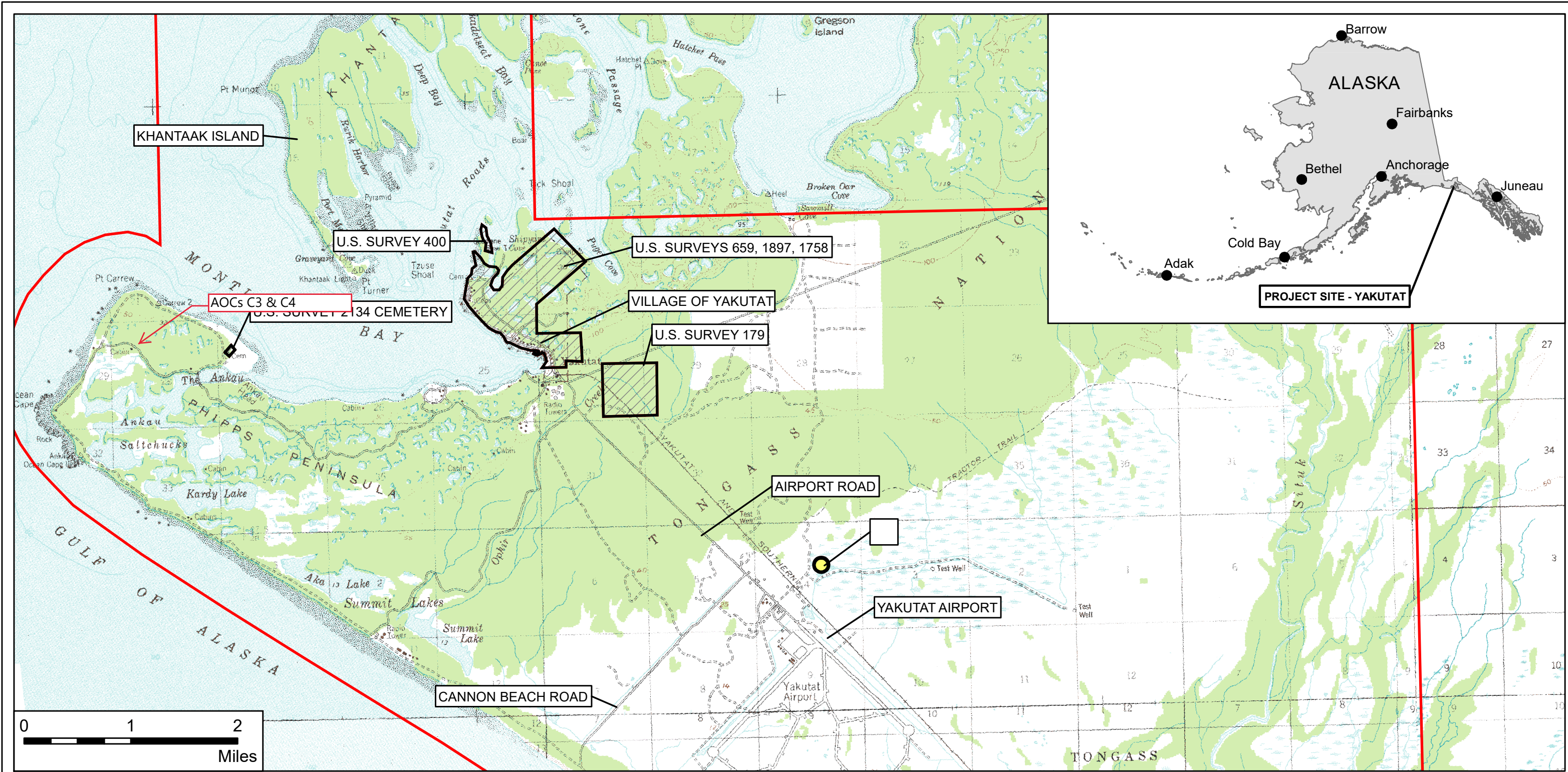
----- . 1943. Yakutat Landing Field Alaska, Utilities & Building Numbers, Harbor Battery Area, Sheet No. 1 of 2, February 25, 1943, Revised July 8, 1943, File No. N-59A-15, YAK FO/93. F10AK0606--\_01.04\_0533\_a.

----- . 1945. Yakutat Landing Field Alaska, Layout Plan, Sheet No. 11 of 11, 2nd revision January 22, 1945, Supersedes Dwg. Dated Feb.15, 1943, File No. N-59-36, 15-04-288. F10AK0606--\_01.04\_0519\_a.



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- 2016b. Ocean Cape Radio Relay Site, Yakutat, Alaska Fuds No. F10AK0747 Historic Photo Analysis, Final Report, November 2016. F10AK0606--\_01.04\_0575\_a
- 2019. Final Removal Action Report, 2018 CON/HTRW Removal Actions, Yakutat Air Base Formerly Used Defense Sites, F10AK0606-05 (C6), F10AK0606-07 (M2), F10AK0606-11 (C2, C3, C4), F10AK060611\_02.13\_0001\_a.
- 2021. Final Report, 2020 CON/HTRW Removal Action, Yakutat Air Base Formerly Used Defense Sites, F10AK0606-05 (C6), June. F10AK060605\_02.13\_0002\_a
- U.S. War Assets Administration (WAA). 1948. Declaration of Surplus Real Property; 602 Yakutat Airfield and Garrison Site, Alaska – ENGLT. Form-1005 Correction Report, 17 December. F10AK060602--\_01.06\_0502\_a.

## **FIGURES**



Coordinate System: WGS 1984 UTM Zone 7N, Projection: Transverse Mercator, Datum: WGS 1984

**REFERENCES**  
 BACKGROUND MAPS ARE USGS TOPOGRAPHIC MAPS:  
 YAKUTAT B-5, 1959, 1:63,360  
 YAKUTAT C-5, 1970, 1:63,360  
 YAKUTAT C-4, 1972, 1:63,360  
 YAKUTAT, ALASKA 1982, 1:250,000

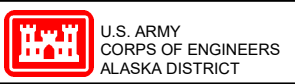
**NOTES**  
 1. FUDS PROPERTY BOUNDARY IS BASED ON MAP TITLED "REAL ESTATE, YAKUTAT AIR BASE MILITARY RESERVATION" DATED 16 APRIL 1949.

**ACRONYMS AND ABBREVIATIONS**  
 USGS - U.S. GEOLOGICAL SURVEY

- AOC E1 Approximate Location
- FUDS Property Boundary
- Non-FUDS Property



P.M.:	TR
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DATE:	6/10/2021

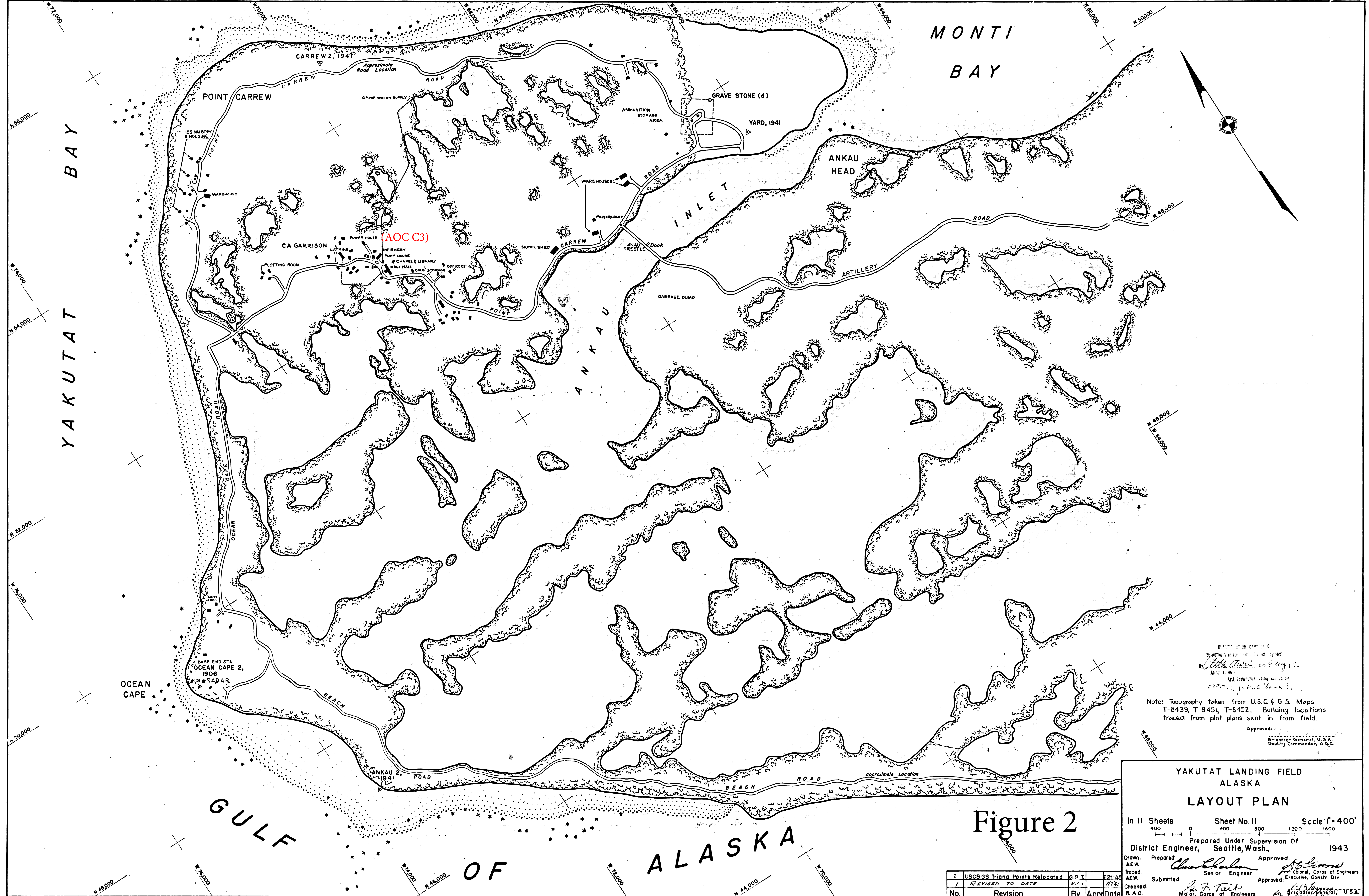


**LOCATION AND VICINITY MAPS**  
 2021 Closeout Report Project 11 - AOC C3 & C4

YAKUTAT AIR BASE FUDS - F10AK0606  
 YAKUTAT, ALASKA

**FIGURE 1**

Document Path: D:\Yakutat\Closeout\_Figures1\_MXD\01\_LocVicMap\_12\_E1\_NWDD.mxd



DESIGNED BY: [Signature]  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 Note: Topography taken from U.S.C. & G.S. Maps T-8439, T-8451, T-8452. Building locations traced from plot plans sent in from field.  
 Approved: [Signature]  
 Brigadier General, U.S.A.  
 Deputy Commander, A.B.C.

Figure 2

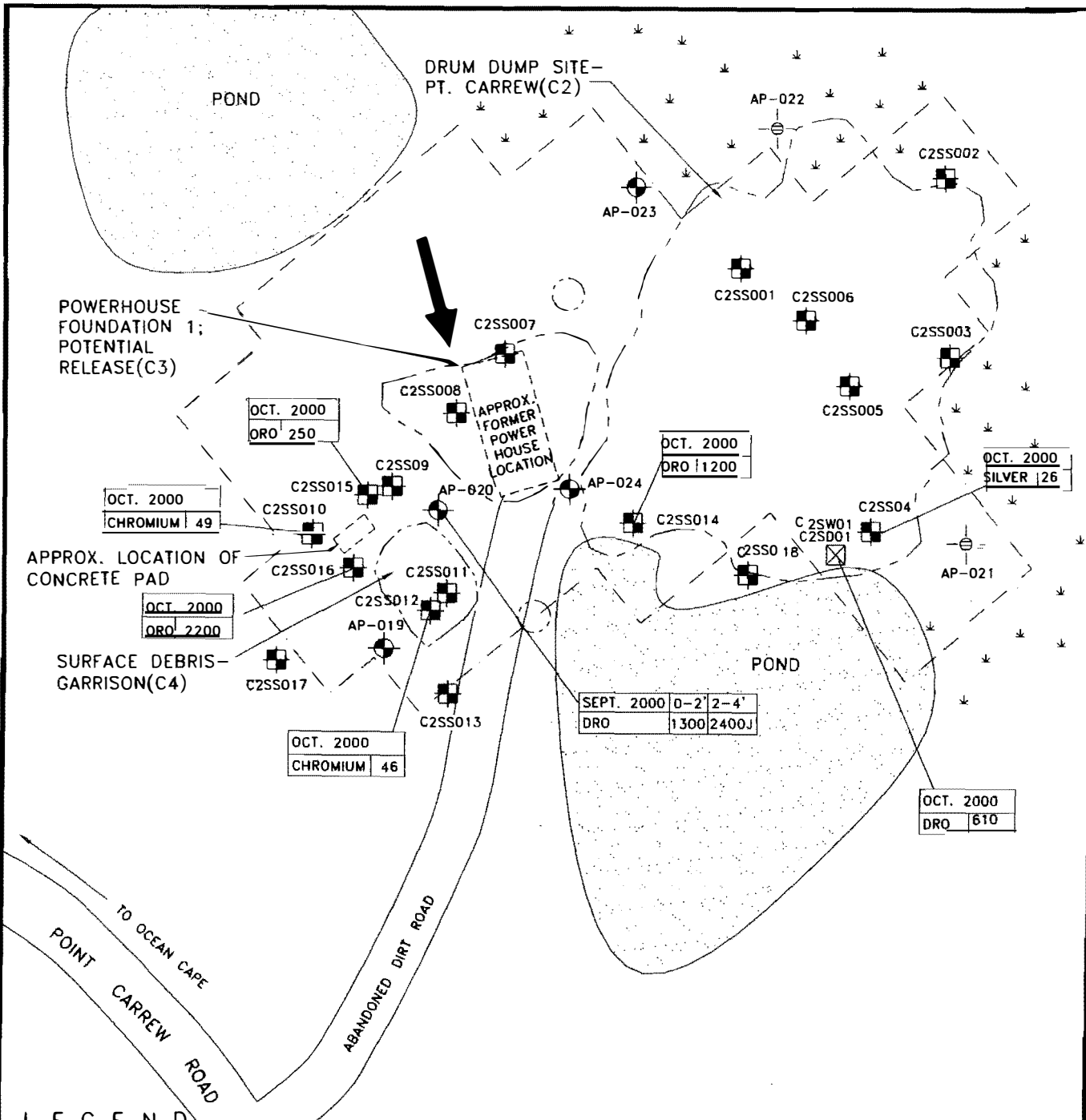
**YAKUTAT LANDING FIELD ALASKA LAYOUT PLAN**

In 11 Sheets Sheet No. 11 Scale: 1" = 400'

Prepared Under Supervision of District Engineer, Seattle, Wash., 1943

Drawn: Prepared [Signature] Approved: [Signature]  
 A.E.W. [Signature] Senior Engineer  
 Traced: Submitted [Signature] Approved, Executive, Constr. Div.  
 Checked: [Signature] Major, Corps of Engineers  
 R.A.C. [Signature] Brigadier General, U.S.A.  
 Engineer, A.B.C.

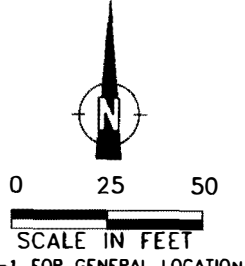
No.	Revision	By	Appr	Date
2	USC&GS Triang. Points Relocated	G.P.T.		2-21-43
1	REVISED TO DATE	R.V.		7/12/43



**LEGEND**

- ⊠ SEDIMENT AND WATER SAMPLE LOCATION
- ⊞ SURFACE SOIL SAMPLE LOCATION
- ⊖ SOIL BORING, LOCATION
- ⊙ MONITORING WELL LOCATION
- ⬇ WETLAND AREA
- GEOPHYSICAL SURVEY AREA
- - - GEOPHYSICAL ANOMALY
- ORO DIESEL RANGE ORGANICS
- ➔ APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTE: AT LOCATIONS WHERE MULTIPLE SAMPLES WERE TAKEN, THE HIGHEST RESULT IS SHOWN. ANALYTICAL SAMPLE RESULTS REPORTED IN mg/Kg

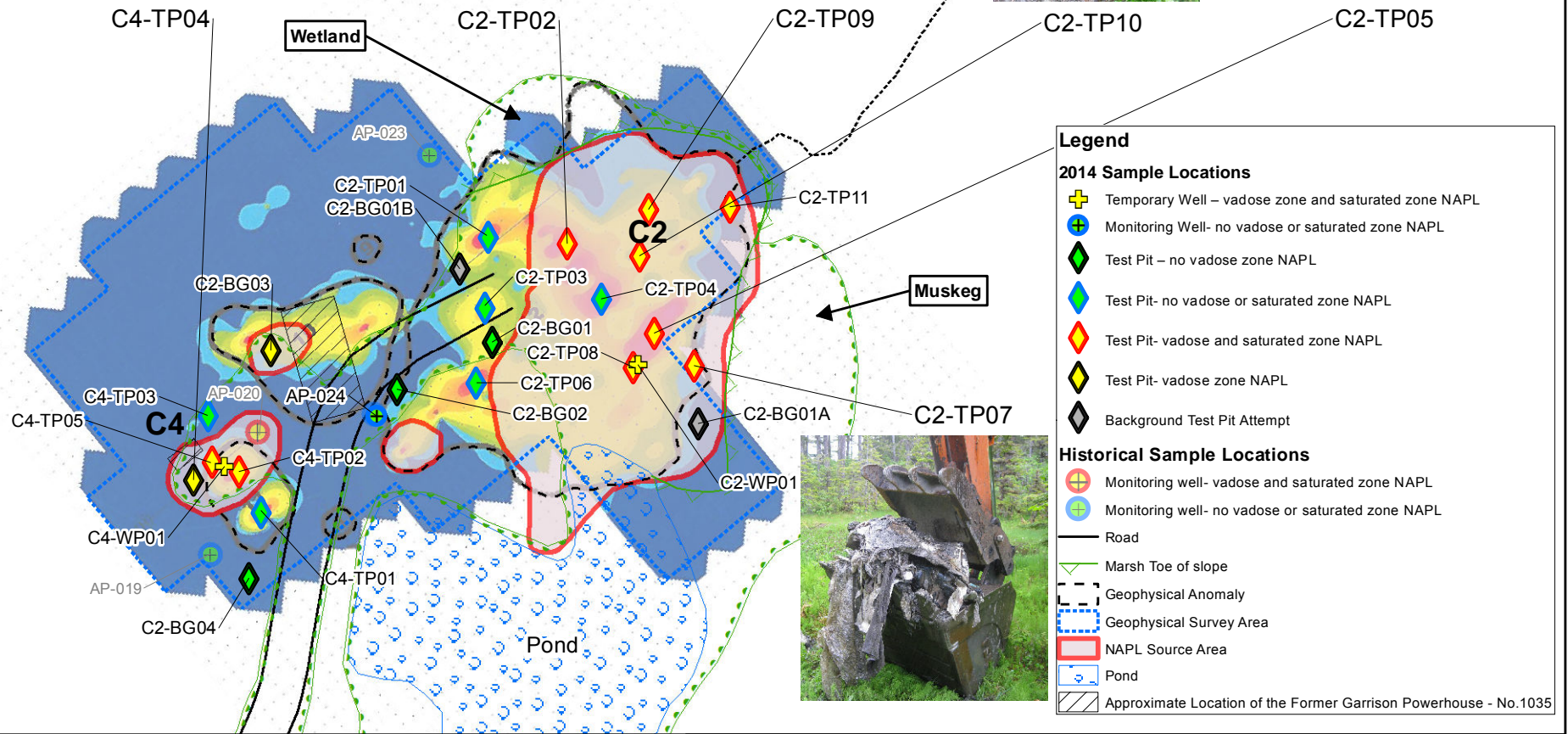


SOURCE: McCLINTOCK LAND ASSOCIATES/TERRASAT

SEE FIGURE 1-1 FOR GENERAL LOCATION

**FIGURE 3**  
POINT CARREW GARRISON  
CONCERN C2, C3 & C4

2000 REMEDIAL  
INVESTIGATION REPORT  
YAKUTAT AREA RI/FS  
YAKUTAT, ALASKA



**Legend**

**2014 Sample Locations**

- Temporary Well – vadose zone and saturated zone NAPL
- Monitoring Well- no vadose or saturated zone NAPL
- Test Pit – no vadose zone NAPL
- Test Pit- no vadose or saturated zone NAPL
- Test Pit- vadose and saturated zone NAPL
- Test Pit- vadose zone NAPL
- Background Test Pit Attempt

**Historical Sample Locations**

- Monitoring well- vadose and saturated zone NAPL
- Monitoring well- no vadose or saturated zone NAPL

- Road
- Marsh Toe of slope
- Geophysical Anomaly
- Geophysical Survey Area
- NAPL Source Area
- Pond
- Approximate Location of the Former Garrison Powerhouse - No.1035



**FIGURE 4**

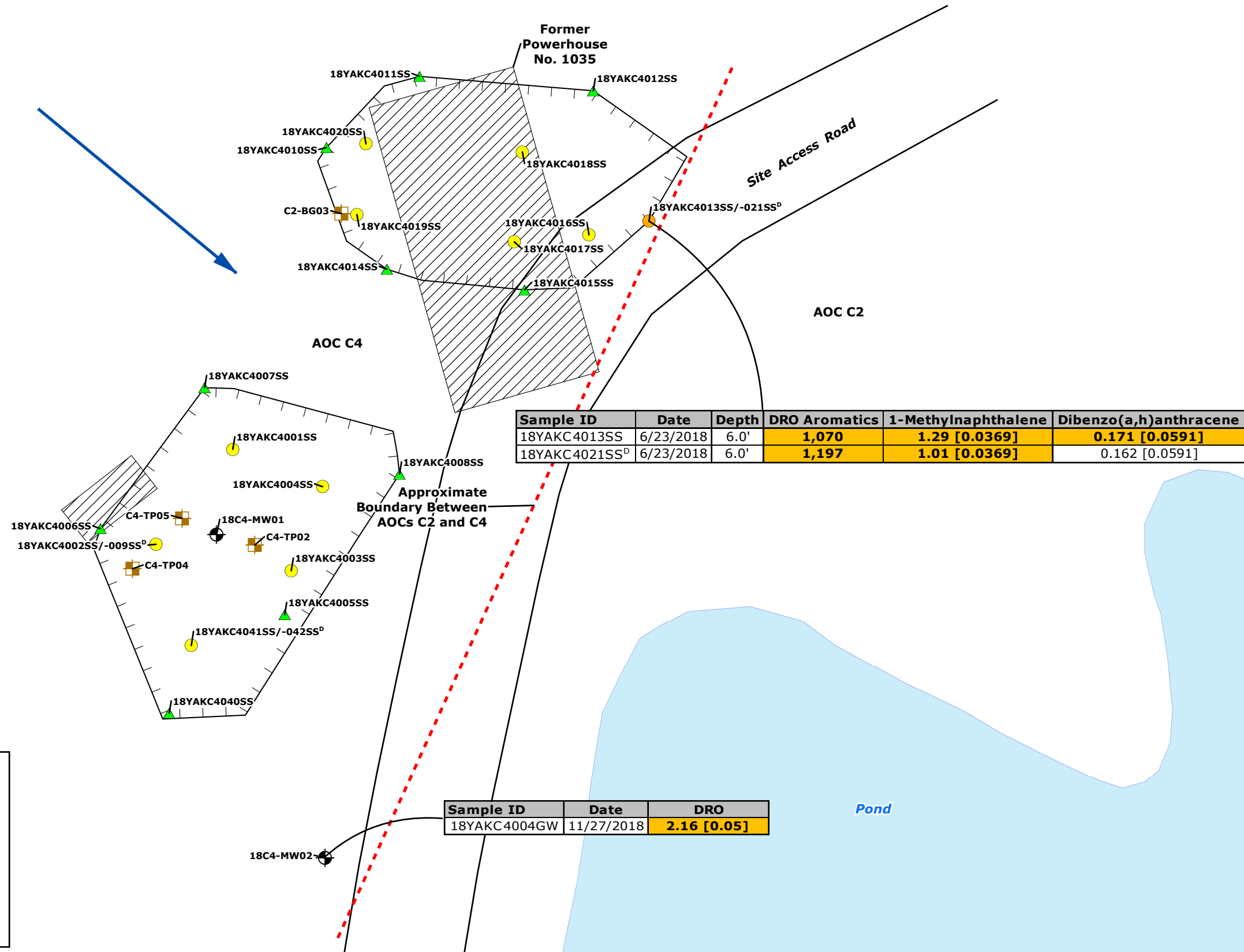
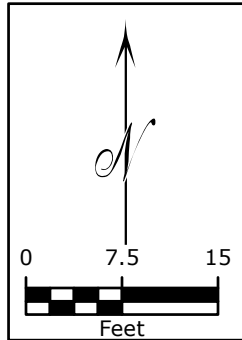
**AOCs C2 and C4  
Test Pit Locations and Observations**

US Army Corps  
of Engineers  
Alaska District

5-12

0 25 50  
Feet  
1 in = 60 ft

2014 Supplemental RI Report  
Site: Yakutat Air Base  
Drawn: AECOM  
Date: 1/22/2016



Sample ID	Date	Depth	DRO Aromatics	1-Methylnaphthalene	Dibenzo(a,h)anthracene
18YAKC4013SS	6/23/2018	6.0'	1,070	1.29 [0.0369]	0.171 [0.0591]
18YAKC4021SS <sup>D</sup>	6/23/2018	6.0'	1,197	1.01 [0.0369]	0.162 [0.0591]

Sample ID	Date	DRO
18YAKC4004GW	11/27/2018	2.16 [0.05]

Contaminant of Concern	ADEC Cleanup Level
<b>Soil</b>	
DRO Aromatics	90 mg/kg <sup>a</sup>
1-Methylnaphthalene	0.41 mg/kg <sup>b</sup>
Dibenzo(a,h)anthracene	0.17 mg/kg <sup>b</sup>
<b>Groundwater</b>	
DRO	1.5 mg/L <sup>c</sup>

**Notes:**  
 Results are only shown for samples and analytes that exceeded cleanup levels  
 All soil concentrations in milligrams per kilogram  
 All groundwater concentrations in milligrams per liter  
 a = Table B2 (18 AAC 75) for Over 40-Inch Zone  
 b = most stringent on Table B1 (18 AAC 75) for Over 40-Inch Zone  
 c = Table C (18 AAC 75) Groundwater Cleanup Levels  
 D = field duplicate sample  
 DRO = diesel range organics  
 mg/kg = milligrams per kilogram  
 mg/L = milligrams per liter  
 [LOD] = laboratory limit of detection

- Legend**
- ▲ 2018 Sidewall Sample Location
  - 2018 Floor Sample Location
  - 2018 Floor Sample Location Exceedance
  - ⊕ 2018 Monitoring Well Sample Location
  - ⊕ 2014 Test Pit (Soil Exceedance)
  - Approximate Boundary Between AOCs C2 and C4
  - Road
  - ← Approximate Groundwater Flow Direction
  - ▨ Excavation
  - ▨ Former Building
  - ▨ Pond

FIGURE 5  
 YAKUTAT, AK  
 YAKUTAT AIR BASE FUDS  
 C3 C4 POINT CARREW GARRISON AREA POL SOIL  
 REMOVAL & AOC BOUNDARY MAP



DATE: 8/30/2021  
 SCALE: 1" = 15'

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