DOCKETED	
Docket Number:	99-AFC-01C
Project Title:	Elk Hills Power Project - Compliance
TN #:	266898
Document Title:	Corrected_Appendix D Soil Management Plan¬_Part C
Description:	This upload replaces and supersedes docket upload TN# 266443 for CRC's Appendix D, Soil Management Plan for CalCapture, Part C
Filer:	Daniel I. Padilla
Organization:	California Resources Corporation
Submitter Role:	Applicant
Submission Date:	10/29/2025 9:22:28 AM
Docketed Date:	10/29/2025

FINAL SOIL MANAGEMENT PLAN
Former NPR-1 Closure Project
Elk Hills Oil Field
Elk Hills, California

Prepared for:

California Resources Elk Hills, LLC.
900 Old River Road
Bakersfield, CA 93311

Prepared by:

Langan Engineering & Environmental Services, Inc.
18575 Jamboree Road, Suite 150
Irvine, California 92612

REGISTERED PROFESSIONAL ENGINEER
ELIZABETH JH KIMBREL
NO. C 85887
Exp. 9/30/2024
CIVIL
STATE OF CALIFORNIA

Elizabeth Kimbrel, PE
Senior Project Engineer

PROFESSIONAL GEOLOGIST
DORINDA SHIPMAN
NO. 215
CERTIFIED HYDROGEOLOGIST
Exp. 12/31/2023
STATE OF CALIFORNIA

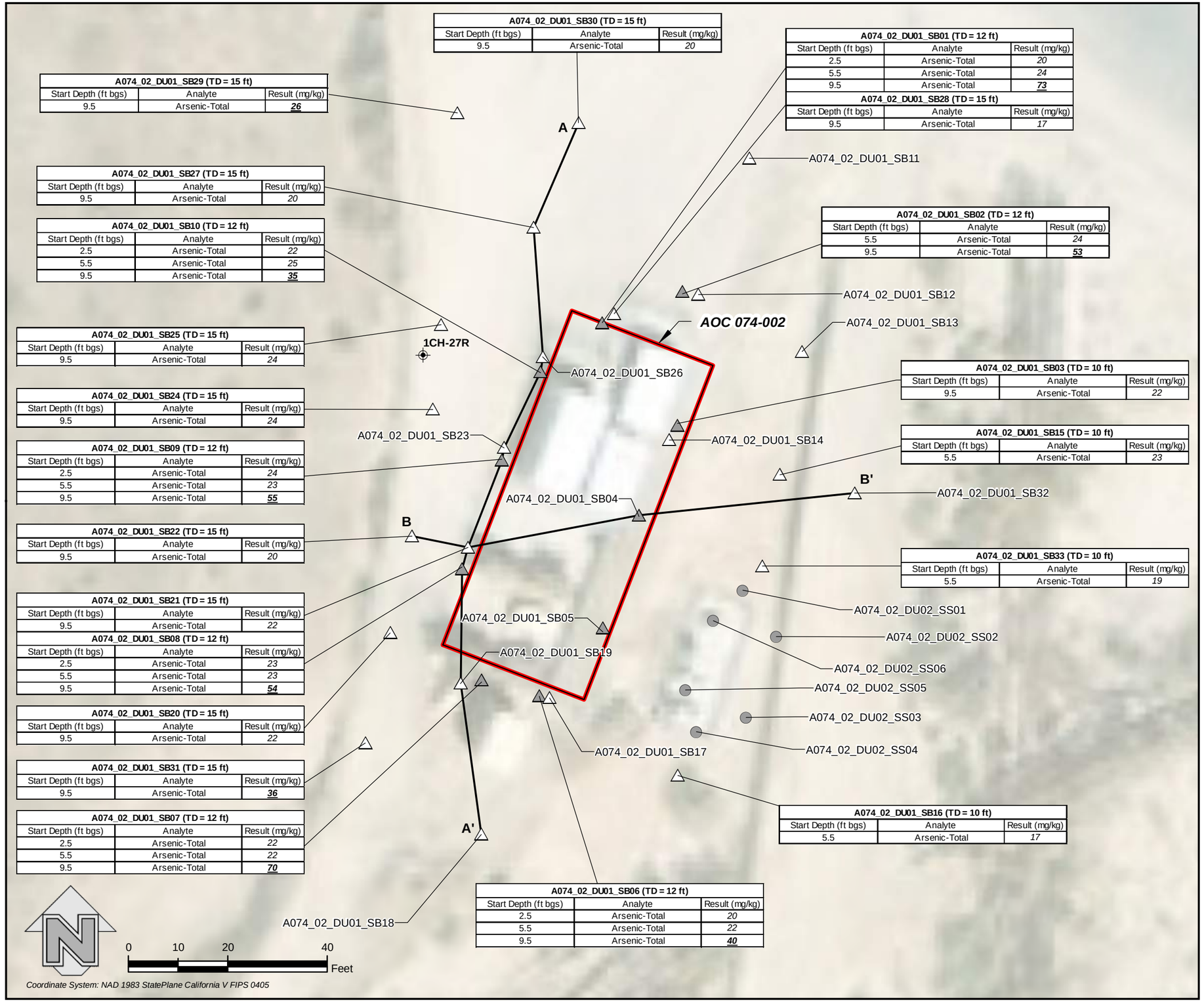
Dorinda Shipman, PG, CHG, CEM
Principal/Vice President

16 November 2022
Project No. 700040402

AOC 074-002 and -003

Reference

Ahtna, 2020. *Draft Interim Measures/ Removal Action Work Plan AOC 074-002 and AOC 074-003*. 6 November.



A074_02_DU01_SB30 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*20*

A074_02_DU01_SB29 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	***26***

A074_02_DU01_SB27 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*20*

A074_02_DU01_SB10 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*22*
5.5	Arsenic-Total	*25*
9.5	Arsenic-Total	***35***

A074_02_DU01_SB25 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*24*

A074_02_DU01_SB24 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*24*

A074_02_DU01_SB09 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*24*
5.5	Arsenic-Total	*23*
9.5	Arsenic-Total	***55***

A074_02_DU01_SB22 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*20*

A074_02_DU01_SB21 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*22*

A074_02_DU01_SB08 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*23*
5.5	Arsenic-Total	*23*
9.5	Arsenic-Total	***54***

A074_02_DU01_SB20 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*22*

A074_02_DU01_SB31 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	***36***

A074_02_DU01_SB07 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*22*
5.5	Arsenic-Total	*22*
9.5	Arsenic-Total	***70***

A074_02_DU01_SB06 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*20*
5.5	Arsenic-Total	*22*
9.5	Arsenic-Total	***40***

A074_02_DU01_SB01 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*20*
5.5	Arsenic-Total	*24*
9.5	Arsenic-Total	***73***

A074_02_DU01_SB28 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*17*

A074_02_DU01_SB02 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*24*
9.5	Arsenic-Total	***53***

A074_02_DU01_SB03 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*22*

A074_02_DU01_SB15 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*23*

A074_02_DU01_SB33 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*19*

A074_02_DU01_SB16 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*17*

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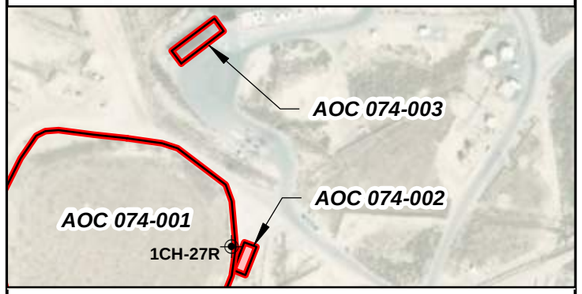

Legend

- Well
- Soil Boring (2018)
- Soil Boring (2015)
- Surface Sample (2015)
- A — A' Cross Section
- Preliminary Area of Concern Boundary

Screening Level

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	*16*	***26***

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 074-002 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.

AOC 074-002 ARSENIC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 074-002	27R	3.0-1

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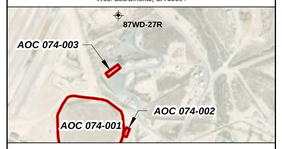


Legend

- Well
- Soil Boring (2018)
- Soil Boring (2015)
- Surface Sample (2015)
- A — A' Cross Section
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	16	26

Notes

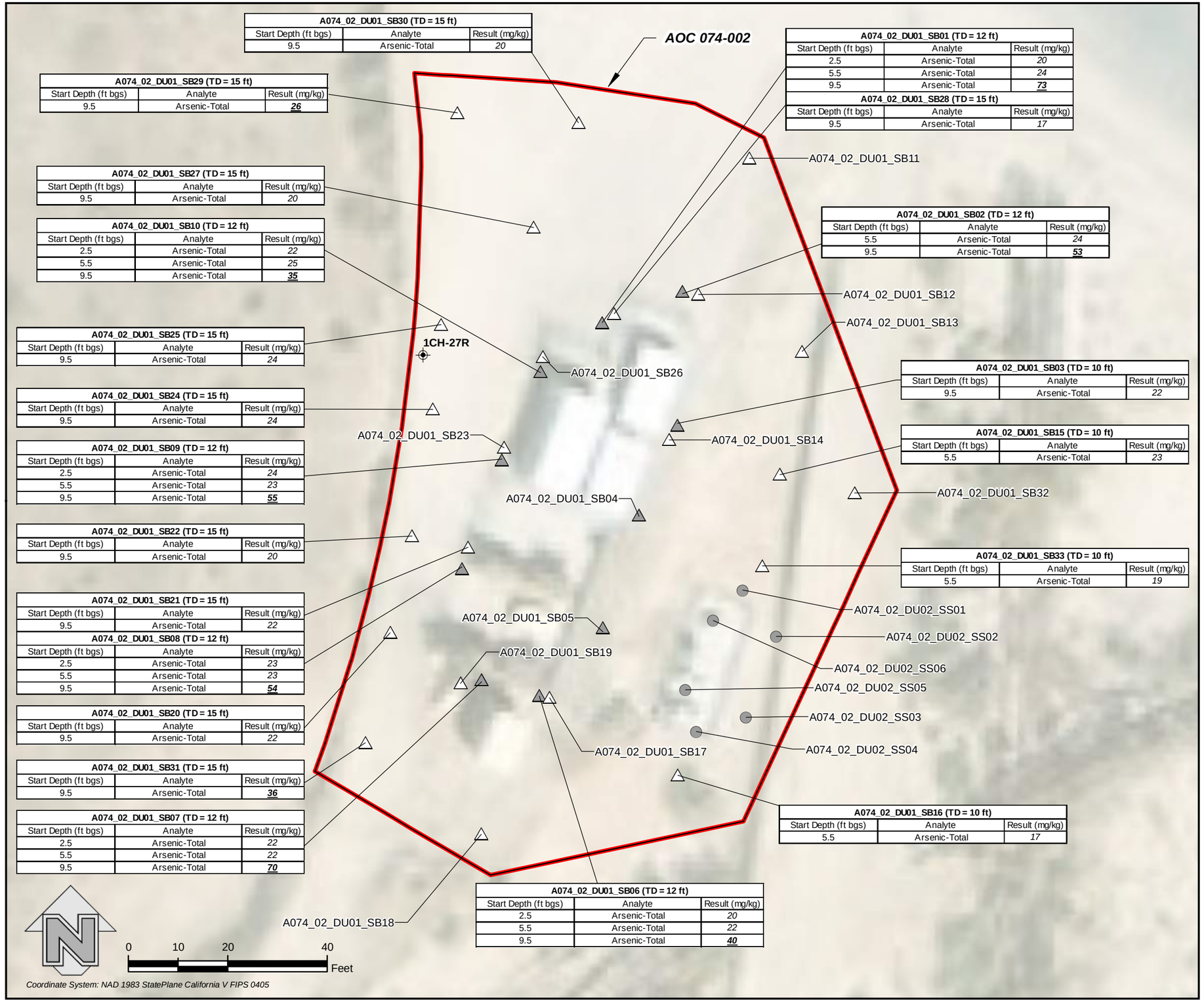
1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 074-003 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.

AOC 074-003 ARSENIC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 074-003	27R	3.0-2



A074_02_DU01_SB30 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	20

A074_02_DU01_SB29 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	**26**

A074_02_DU01_SB27 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	20

A074_02_DU01_SB10 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	22
5.5	Arsenic-Total	25
9.5	Arsenic-Total	**35**

A074_02_DU01_SB25 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	24

A074_02_DU01_SB24 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	24

A074_02_DU01_SB09 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	24
5.5	Arsenic-Total	23
9.5	Arsenic-Total	**55**

A074_02_DU01_SB22 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	20

A074_02_DU01_SB21 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	22

A074_02_DU01_SB08 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	23
5.5	Arsenic-Total	23
9.5	Arsenic-Total	**54**

A074_02_DU01_SB20 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	22

A074_02_DU01_SB31 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	**36**

A074_02_DU01_SB07 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	22
5.5	Arsenic-Total	22
9.5	Arsenic-Total	**70**

A074_02_DU01_SB01 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	20
5.5	Arsenic-Total	24
9.5	Arsenic-Total	**73**

A074_02_DU01_SB28 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	17

A074_02_DU01_SB02 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	24
9.5	Arsenic-Total	**53**

A074_02_DU01_SB03 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	22

A074_02_DU01_SB15 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	23

A074_02_DU01_SB33 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	19

A074_02_DU01_SB16 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	17

A074_02_DU01_SB06 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	20
5.5	Arsenic-Total	22
9.5	Arsenic-Total	**40**

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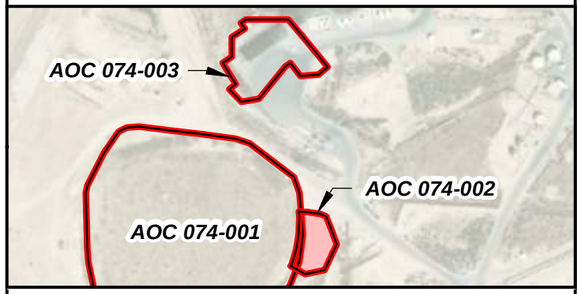

Legend

- Well
- Soil Boring (2018)
- Soil Boring (2015)
- Surface Sample (2015)
- Area of Concern Boundary

Screening Level

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	16	**26**

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 074-002 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.

074-002 AREA OF CONCERN BOUNDARY

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 074-002	27R	5.5-1

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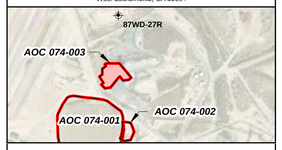


Legend

- Well
- Soil Boring (2018)
- Soil Boring (2015)
- Surface Sample (2015)
- Area of Concern Boundary

Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	16	26

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 074-003 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.

074-003 AREA OF CONCERN BOUNDARY

FORMER NAVAL PETROLEUM RESERVE NO.1

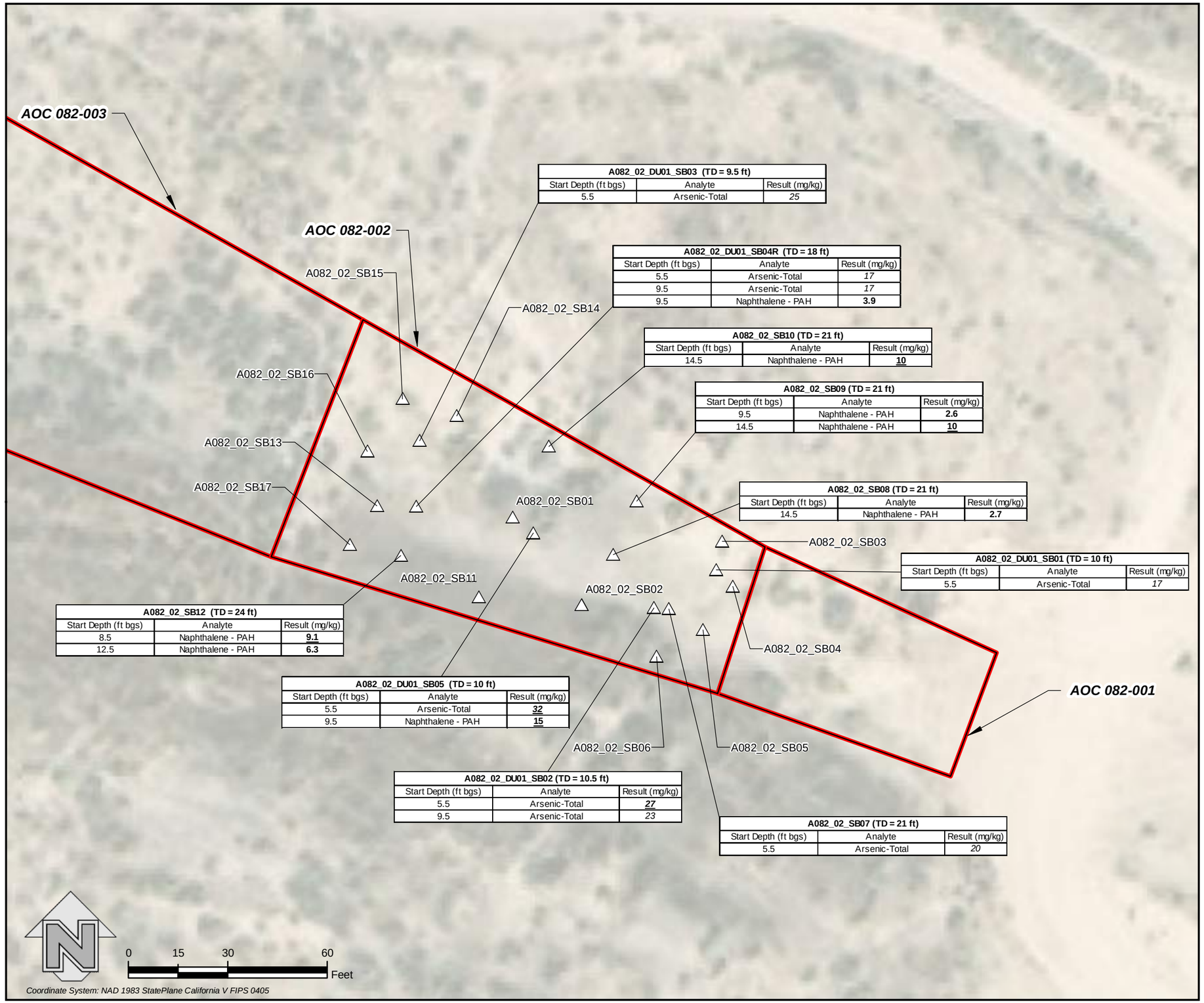
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 074-003	27R	5.5-2

AOC 082-002

Reference

Ahtna, 2020. *Draft Interim Measures/ Removal Action Work Plan AOC 082-002*. 18 September.



A082_02_DU01_SB03 (TD = 9.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*25*

A082_02_DU01_SB04R (TD = 18 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*17*
9.5	Arsenic-Total	*17*
9.5	Naphthalene - PAH	**3.9**

A082_02_SB10 (TD = 21 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Naphthalene - PAH	**10**

A082_02_SB09 (TD = 21 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene - PAH	**2.6**
14.5	Naphthalene - PAH	**10**

A082_02_SB08 (TD = 21 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Naphthalene - PAH	**2.7**

A082_02_DU01_SB01 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*17*

A082_02_SB12 (TD = 24 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
8.5	Naphthalene - PAH	**9.1**
12.5	Naphthalene - PAH	**6.3**

A082_02_DU01_SB05 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	***32***
9.5	Naphthalene - PAH	**15**

A082_02_DU01_SB02 (TD = 10.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	***27***
9.5	Arsenic-Total	*23*

A082_02_SB07 (TD = 21 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	*20*

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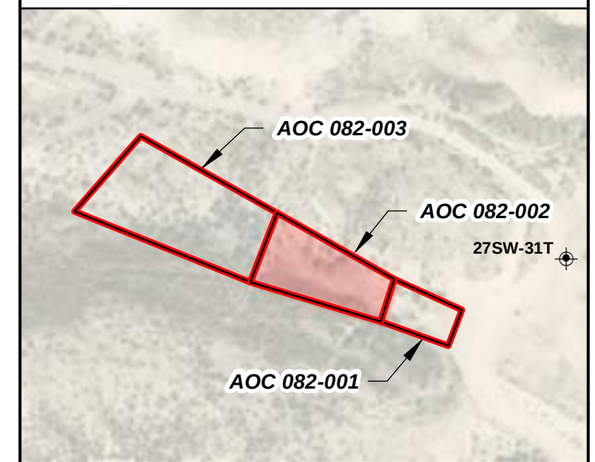

Legend

- Soil Boring
- Well
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	*16*	***26***
Analyte	**Residential (mg/kg)**	**Commercial/Industrial (mg/kg)**
Naphthalene	**2.0**	**6.5**

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. Well location provided by DOGGR, 2018.
5. AOC 082-002 boundary is preliminary and subject to change.
6. TD = total depth of soil boring below ground surface.

COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 082-002	31T	3.0-1

Ahtna
Facility Services, Inc.
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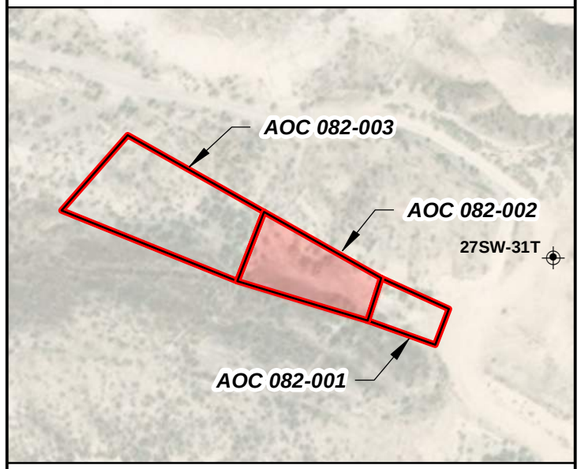


Legend

- 7' Depth of Impacted Soil
- Soil Boring
- Well
- Impacted Area
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 082-002 boundary is preliminary and subject to change.
5. Well location provided by DOGGR, 2018.

AREA EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO.1

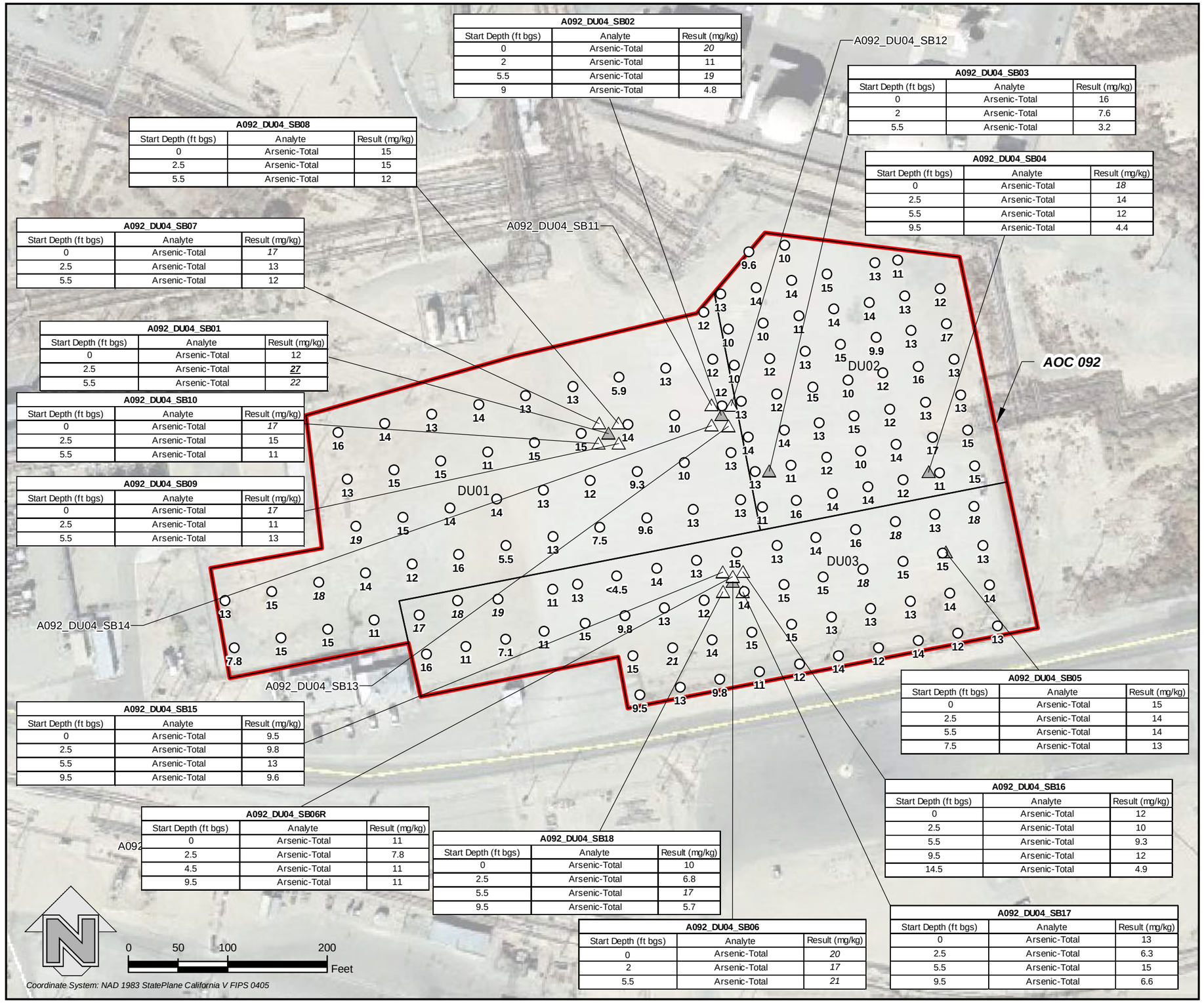
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 082-002	31T	4.3-1

AOC 092

Reference

Ahtna, 2017. *Supplemental Sampling Investigation, RFI Implementation Report AOC 092*. 20 December.



A092_DU04_SB02		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*20*
2	Arsenic-Total	11
5.5	Arsenic-Total	*19*
9	Arsenic-Total	4.8

A092_DU04_SB03		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	16
2	Arsenic-Total	7.6
5.5	Arsenic-Total	3.2

A092_DU04_SB04		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*18*
2.5	Arsenic-Total	14
5.5	Arsenic-Total	12
9.5	Arsenic-Total	4.4

A092_DU04_SB08		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	15
2.5	Arsenic-Total	15
5.5	Arsenic-Total	12

A092_DU04_SB07		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*17*
2.5	Arsenic-Total	13
5.5	Arsenic-Total	12

A092_DU04_SB01		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	12
2.5	Arsenic-Total	***27***
5.5	Arsenic-Total	*22*

A092_DU04_SB10		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*17*
2.5	Arsenic-Total	15
5.5	Arsenic-Total	11

A092_DU04_SB09		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*17*
2.5	Arsenic-Total	11
5.5	Arsenic-Total	13

A092_DU04_SB05		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	15
2.5	Arsenic-Total	14
5.5	Arsenic-Total	14
7.5	Arsenic-Total	13

A092_DU04_SB15		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	9.5
2.5	Arsenic-Total	9.8
5.5	Arsenic-Total	13
9.5	Arsenic-Total	9.6

A092_DU04_SB16		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	12
2.5	Arsenic-Total	10
5.5	Arsenic-Total	9.3
9.5	Arsenic-Total	12
14.5	Arsenic-Total	4.9

A092_DU04_SB06R		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	11
2.5	Arsenic-Total	7.8
4.5	Arsenic-Total	11
9.5	Arsenic-Total	11

A092_DU04_SB18		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	10
2.5	Arsenic-Total	6.8
5.5	Arsenic-Total	*17*
9.5	Arsenic-Total	5.7

A092_DU04_SB06		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	*20*
2	Arsenic-Total	*17*
5.5	Arsenic-Total	*21*

A092_DU04_SB17		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	13
2.5	Arsenic-Total	6.3
5.5	Arsenic-Total	15
9.5	Arsenic-Total	6.6

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3100 Beacon Boulevard
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Legend

- ○ - Surface Sample Location
- 13 - XRF Arsenic Result (mg/kg)
- △ Soil Boring Location
- ▲ Previous Soil Boring Location (2015)
- Decision Unit Boundary
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Background Level (mg/kg)	Commercial/Industrial (ug/m3)
Arsenic-Total	*16*	***26***

Notes:

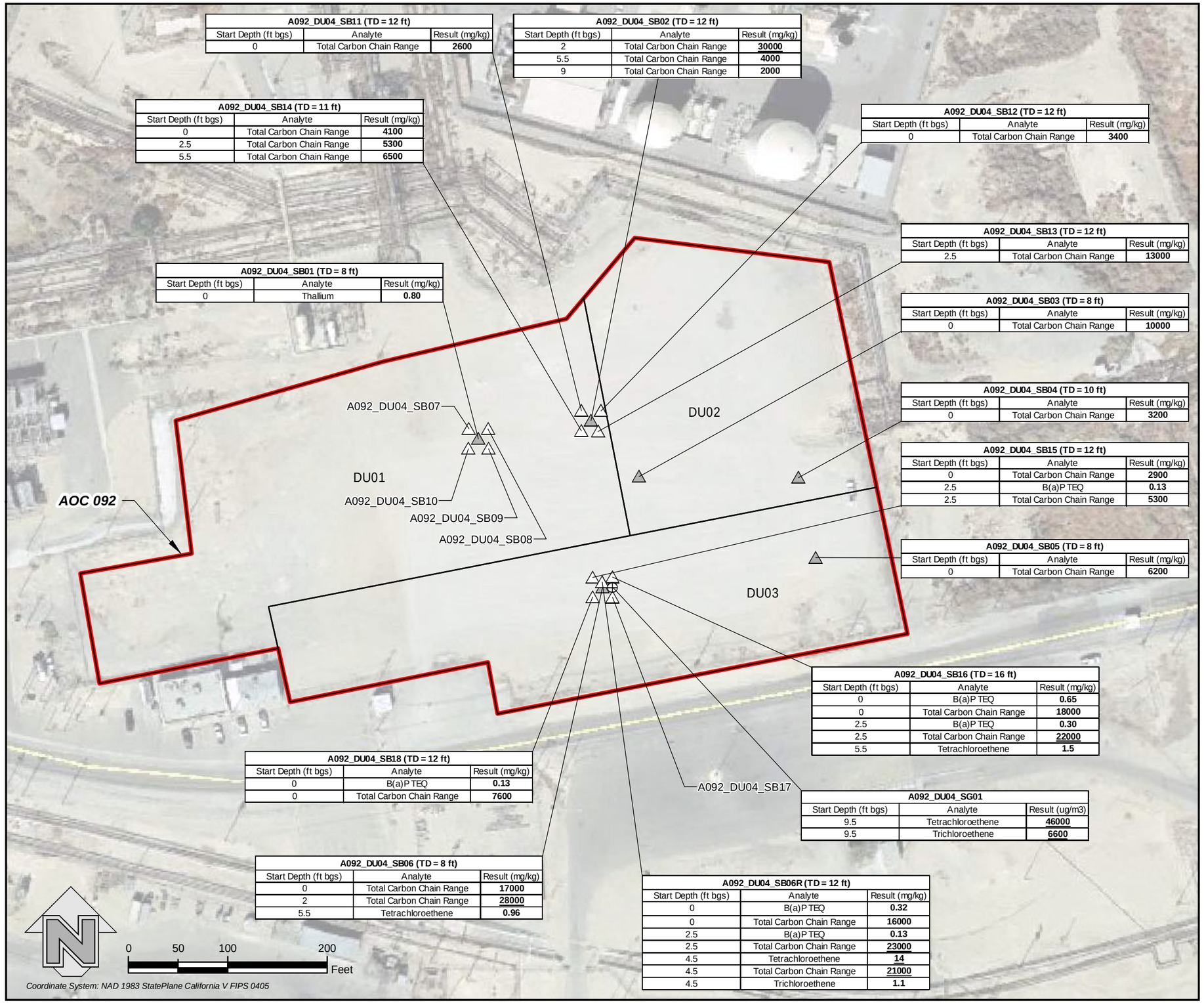
1. Image credit Google Earth: October 20, 2016.
2. Survey data provided by Giuliani & Kull, Inc. 2015.
3. Soil samples located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 092 boundary is preliminary and subject to change.
5. DU04 consists of the subsurface area within the preliminary AOC 092 boundary.

AOC 092 ARSENIC RESULTS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 092	35R	5.0-1



A092_DU04_SB11 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**2600**

A092_DU04_SB02 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2	Total Carbon Chain Range	**30000**
5.5	Total Carbon Chain Range	**4000**
9	Total Carbon Chain Range	**2000**

A092_DU04_SB14 (TD = 11 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**4100**
2.5	Total Carbon Chain Range	**5300**
5.5	Total Carbon Chain Range	**6500**

A092_DU04_SB12 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**3400**

A092_DU04_SB13 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Total Carbon Chain Range	**13000**

A092_DU04_SB01 (TD = 8 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Thallium	**0.80**

A092_DU04_SB03 (TD = 8 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**10000**

A092_DU04_SB04 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**3200**

A092_DU04_SB15 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**2900**
2.5	B(a)P TEQ	**0.13**
2.5	Total Carbon Chain Range	**5300**

A092_DU04_SB05 (TD = 8 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**6200**

A092_DU04_SB16 (TD = 16 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	B(a)P TEQ	**0.65**
0	Total Carbon Chain Range	**18000**
2.5	B(a)P TEQ	**0.30**
2.5	Total Carbon Chain Range	**22000**
5.5	Tetrachloroethene	**1.5**

A092_DU04_SB18 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	B(a)P TEQ	**0.13**
0	Total Carbon Chain Range	**7600**

A092_DU04_SG01		
Start Depth (ft bgs)	Analyte	Result (ug/m3)
9.5	Tetrachloroethene	**46000**
9.5	Trichloroethene	**6600**

A092_DU04_SB06 (TD = 8 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Total Carbon Chain Range	**17000**
2	Total Carbon Chain Range	**28000**
5.5	Tetrachloroethene	**0.96**

A092_DU04_SB06R (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	B(a)P TEQ	**0.32**
0	Total Carbon Chain Range	**16000**
2.5	B(a)P TEQ	**0.13**
2.5	Total Carbon Chain Range	**23000**
4.5	Tetrachloroethene	**14**
4.5	Total Carbon Chain Range	**21000**
4.5	Trichloroethene	**1.1**

Legend

- ⊕ Soil Gas Sample Location
- △ Soil Boring Location
- ▲ Previous Soil Boring Location (2015)
- Decision Unit Boundary
- Preliminary Area of Concern Boundary

Soil Gas Screening Levels

Analyte	Residential (ug/m3)	Commercial/Industrial (ug/m3)
Tetrachloroethene	**230**	**2000**
Trichloroethene	**240**	**3000**

Screening Levels

Analyte	Residential (mg/kg)	Commercial/Industrial (mg/kg)
Thallium	**0.78**	**12**
B(a)P TEQ	**0.11**	**1.3**
Total Carbon Chain Range	**1800**	**18000**
Tetrachloroethene	**0.59**	**2.7**
Trichloroethene	**0.94**	**6.0**

Notes:

1. Image credit Google Earth: October 20, 2016.
2. Survey data provided by Giuliani & Kull, Inc. 2015.
3. Soil samples located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 092 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.
6. DU04 consists of the subsurface area within the preliminary AOC 092 boundary.
7. See Figure 5.0-1 for arsenic results.

AOC 092 RESULTS EXCEEDING SCREENING LEVELS (NON-ARSENIC)

FORMER NAVAL PETROLEUM RESERVE NO.1

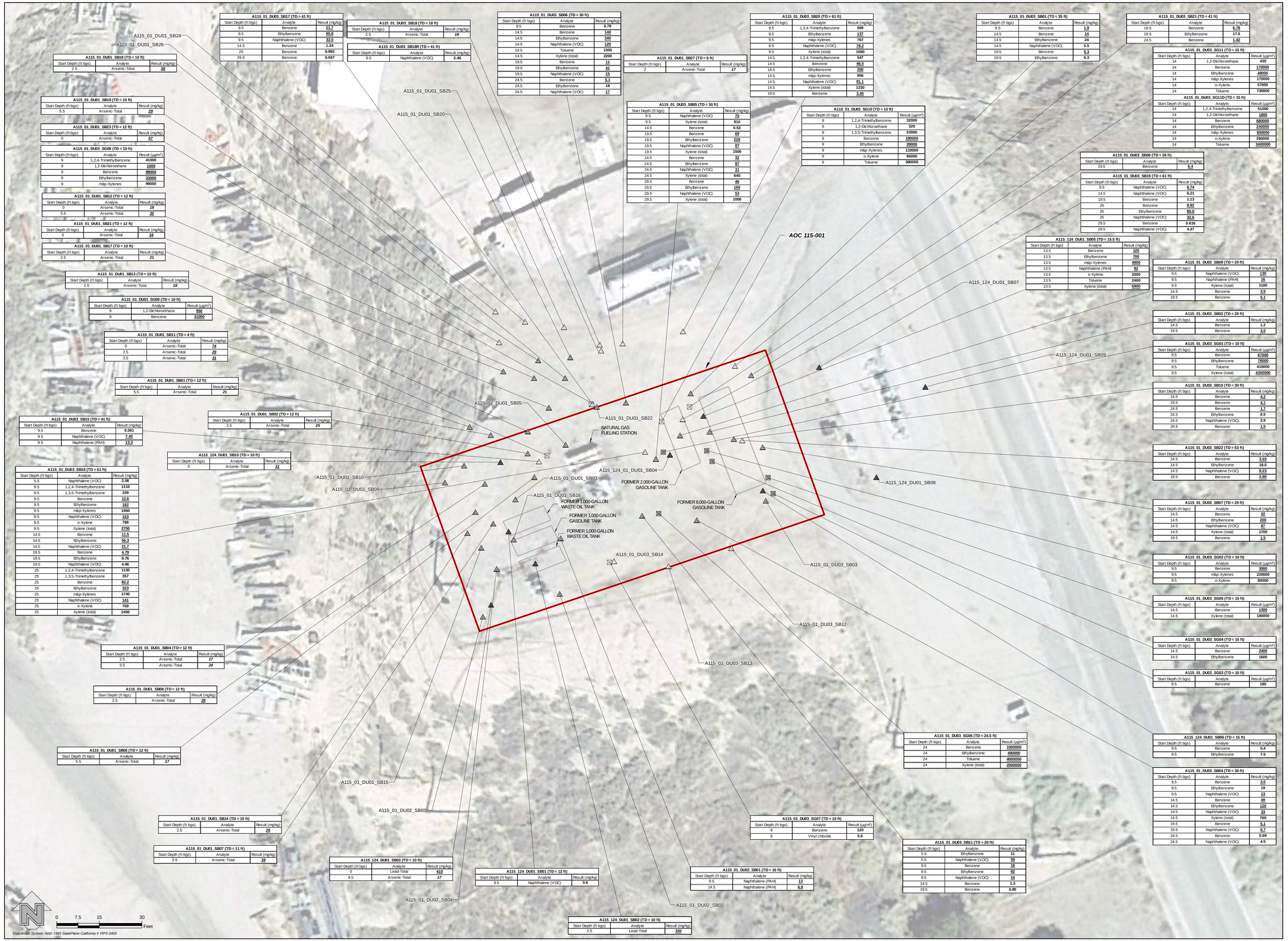
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 092	35R	5.0-2

AOC 115-001

Reference

Ahtna, 2021. *Draft Interim Measures/ Removal Action Work Plan AOC 115-001*. 12 February



A115_01_DU03_SB17 (TD = 41 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	21.7
9.5	Ethylbenzene	95.8
9.5	Naphthalene (VOC)	32.0
14.5	Benzene	1.34
25	Benzene	0.992
29.5	Benzene	0.597

A115_01_DU03_SB18 (TD = 18 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	18

A115_01_DU03_SB18R (TD = 41 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (VOC)	2.46

A115_01_DU01_SB18 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	38

A115_01_DU01_SB19 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	29

A115_01_DU01_SB23 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	57

A115_01_DU03_SG09 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9	1,2,4-Trimethylbenzene	41000
9	1,2-Dichloroethane	1000
9	Benzene	99000
9	Ethylbenzene	33000
9	m&p-Xylenes	99000

A115_01_DU01_SB12 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	18
5.5	Arsenic-Total	35

A115_01_DU01_SB21 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	34

A115_01_DU01_SB17 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	21

A115_01_DU01_SB13 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	18

A115_01_DU03_SG08 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9	1,2-Dichloroethane	950
9	Benzene	31000

A115_01_DU01_SB11 (TD = 4 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Arsenic-Total	74
2.5	Arsenic-Total	29
3.5	Arsenic-Total	31

A115_01_DU01_SB01 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	21

A115_01_DU03_SB15 (TD = 41 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	0.361
9.5	Naphthalene (VOC)	7.42
9.5	Naphthalene (PAH)	13.3

A115_01_DU01_SB02 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	25

A115_124_DU01_SB10 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5	Arsenic-Total	31

A115_01_DU03_SB16 (TD = 61 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Naphthalene (VOC)	2.08
9.5	1,2,4-Trimethylbenzene	1110
9.5	1,3,5-Trimethylbenzene	339
9.5	Benzene	12.6
9.5	Ethylbenzene	162
9.5	m&p-Xylenes	1950
9.5	Naphthalene (VOC)	153
9.5	o-Xylene	798
9.5	Xylene (total)	2750
14.5	Benzene	11.5
14.5	Ethylbenzene	56.1
14.5	Naphthalene (VOC)	21.7
19.5	Benzene	4.78
19.5	Ethylbenzene	9.76
19.5	Naphthalene (VOC)	4.06
25	1,2,4-Trimethylbenzene	1130
25	1,3,5-Trimethylbenzene	357
25	Benzene	82.2
25	Ethylbenzene	323
25	m&p-Xylenes	1740
25	Naphthalene (VOC)	141
25	o-Xylene	708
25	Xylene (total)	2450

A115_01_DU01_SB04 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	17
5.5	Arsenic-Total	24

A115_01_DU01_SB08 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	48

A115_01_DU01_SB06 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Arsenic-Total	17

A115_01_DU01_SB14 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	26

A115_01_DU01_SB07 (TD = 11 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	29

A115_01_DU03_SB06 (TD = 30 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	0.78
14.5	Benzene	140
14.5	Ethylbenzene	340
14.5	Naphthalene (VOC)	120
14.5	Toluene	1300
14.5	Xylene (total)	2200
19.5	Benzene	11
19.5	Ethylbenzene	41
19.5	Naphthalene (VOC)	15
24.5	Benzene	3.1
24.5	Ethylbenzene	18
24.5	Naphthalene (VOC)	17

A115_01_DU01_SB27 (TD = 6 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2	Arsenic-Total	17

A115_01_DU03_SB05 (TD = 30 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (VOC)	70
9.5	Xylene (total)	910
14.5	Benzene	0.53
19.5	Benzene	69
19.5	Ethylbenzene	220
19.5	Naphthalene (VOC)	87
19.5	Xylene (total)	1500
24.5	Benzene	32
24.5	Ethylbenzene	87
24.5	Naphthalene (VOC)	31
24.5	Xylene (total)	640
29.5	Benzene	46
29.5	Ethylbenzene	160
29.5	Naphthalene (VOC)	53
29.5	Xylene (total)	1000

A115_01_DU03_SB20 (TD = 61 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	1,2,4-Trimethylbenzene	569
9.5	Ethylbenzene	137
9.5	m&p-Xylenes	767
9.5	Naphthalene (VOC)	78.2
9.5	Xylene (total)	1080
14.5	1,2,4-Trimethylbenzene	547
14.5	Benzene	46.5
14.5	Ethylbenzene	200
14.5	m&p-Xylenes	956
14.5	Naphthalene (VOC)	81.1
14.5	Xylene (total)	1330
19.5	Benzene	3.45

A115_01_DU03_SG10 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9	1,2,4-Trimethylbenzene	32000
9	1,2-Dichloroethane	320
9	1,3,5-Trimethylbenzene	53000
9	Benzene	180000
9	Ethylbenzene	39000
9	m&p-Xylenes	110000
9	o-Xylene	96000
9	Toluene	380000

A115_01_DU03_SB01 (TD = 35 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	1.9
14.5	Benzene	14
14.5	Ethylbenzene	24
14.5	Naphthalene (VOC)	5.5
19.5	Benzene	6.3
19.5	Ethylbenzene	6.3

A115_01_DU03_SB21 (TD = 41 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
19.5	Benzene	6.78
19.5	Ethylbenzene	17.4
24.5	Benzene	1.42

A115_01_DU03_SG11 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
14	1,2-Dichloroethane	430
14	Benzene	170000
14	Ethylbenzene	49000
14	m&p-Xylenes	170000
14	o-Xylene	57000
14	Toluene	730000

A115_01_DU03_SG11D (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
14	1,2,4-Trimethylbenzene	51000
14	1,2-Dichloroethane	1800
14	Benzene	680000
14	Ethylbenzene	240000
14	m&p-Xylenes	850000
14	o-Xylene	290000
14	Toluene	3400000

A115_01_DU03_SB08 (TD = 26 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
19.5	Benzene	6.4

A115_01_DU03_SB19 (TD = 61 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (VOC)	6.74
14.5	Naphthalene (VOC)	6.21
19.5	Benzene	1.13
25	Benzene	8.92
25	Ethylbenzene	80.0
25	Naphthalene (VOC)	32.6
29.5	Benzene	0.616
29.5	Naphthalene (VOC)	4.47

A115_124_DU01_SB05 (TD = 15.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
13.5	Benzene	120
13.5	Ethylbenzene	700
13.5	m&p-Xylenes	4900
13.5	Naphthalene (PAH)	92
13.5	o-Xylene	2000
13.5	Toluene	2400
13.5	Xylene (total)	6900

A115_01_DU03_SB09 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (VOC)	130
9.5	Naphthalene (PAH)	16
9.5	Xylene (total)	1100
14.5	Benzene	3.9
19.5	Benzene	5.1

A115_01_DU03_SB02 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Benzene	1.2
19.5	Benzene	3.0

A115_01_DU03_SG01 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9.5	Benzene	67000
9.5	Ethylbenzene	78000
9.5	Toluene	410000
9.5	Xylene (total)	4300000

A115_01_DU03_SB10 (TD = 30 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Benzene	4.2
19.5	Benzene	4.1
24.5	Benzene	1.7
24.5	Ethylbenzene	6.5
24.5	Naphthalene (VOC)	2.9
29.5	Benzene	1.3

A115_01_DU03_SB22 (TD = 53 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Benzene	3.03
14.5	Ethylbenzene	18.0
14.5	Naphthalene (VOC)	8.23
19.5	Benzene	2.80

A115_01_DU03_SB07 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Benzene	22
14.5	Ethylbenzene	200
14.5	Naphthalene (VOC)	87
14.5	Xylene (total)	1700
19.5	Benzene	1.5

A115_01_DU03_SG02 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9.5	Benzene	3000
9.5	m&p-Xylenes	220000
9.5	o-Xylene	80000

A115_01_DU03_SG05 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
14.5	Benzene	1300
14.5	Xylene (total)	180000

A115_01_DU03_SG04 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
14.5	Benzene	2400
14.5	Ethylbenzene	1600

A115_01_DU03_SG03 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9.5	Benzene	180

A115_124_DU01_SB06 (TD = 15 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	0.4
9.5	Ethylbenzene	7.5

A115_01_DU03_SB04 (TD = 30 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Benzene	3.0
9.5	Ethylbenzene	19
9.5	Naphthalene (VOC)	13
14.5	Benzene	49
14.5	Ethylbenzene	120
14.5	Naphthalene (VOC)	33
14.5	Xylene (total)	760
19.5	Benzene	5.1
19.5	Naphthalene (VOC)	6.7
24.5	Benzene	0.69
24.5	Naphthalene (VOC)	4.5

A115_01_DU03_SG06 (TD = 24.5 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
24	Benzene	1500000
24	Ethylbenzene	490000
24	Toluene	4000000
24	Xylene (total)	2500000

A115_01_DU03_SG07 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
9	Benzene	120
9	Vinyl chloride	5.6

A115_01_DU03_SB11 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
5.5	Ethylbenzene	11
5.5	Naphthalene (VOC)	59
9.5	Benzene	18
9.5	Ethylbenzene	82
9.5	Naphthalene (VOC)	14
14.5	Benzene	1.3
19.5	Benzene	0.80

A115_01_DU02_SB01 (TD = 16 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (PAH)	13
14.5	Naphthalene (PAH)	6.9

A115_124_DU01_SB03 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Lead-Total	410
9.5	Arsenic-Total	17

A115_124_DU01_SB01 (TD = 12 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Naphthalene (VOC)	3.6

A115_124_DU01_SB02 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Lead-Total	330

Ahtna Facility Services, Inc.
P. 916.403.5300 www.afsiak.com F. 916.326.1590
3100 Beacon Boulevard
West Sacramento, CA 95691

Legend

- Soil Boring (2018)
- Soil Boring (2017)
- Soil Boring (2014)
- Soil Gas Sample (2017)
- Former Tank Location
- Preliminary Area of Concern Boundary

Soil Gas Screening Levels

Analyte	Residential (µg/m³)	Commercial/Industrial (µg/m³)
1,2,4-Trimethylbenzene	31500	260000
1,2-Dichloroethane	55	470
1,3,5-Trimethylbenzene	31500	260000
Benzene	49	420
Ethylbenzene	550	4900
m&p-Xylenes	50000	440000
o-Xylene	50000	440000
Toluene	155000	1300000
Vinyl chloride	4.8	160
Xylene (total)	50000	440000

Soil Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	16	26
Analyte	Residential (mg/kg)	Commercial/Industrial (mg/kg)
1,2,4-Trimethylbenzene	300	1800
1,3,5-Trimethylbenzene	270	1500
Benzene	0.33	1.4
Ethylbenzene	5.8	25
Lead-Total	80	320
m&p-Xylenes	550	2400
Naphthalene	2.0	6.5
o-Xylene	650	2800
Toluene	1100	5300
Xylene (total)	580	2500

Notes

1. Aerial photography provided by Goolge Earth: August 20, 2018.
2. Survey data provided by DOE, 2011.
3. Soil Samples located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 115-001 boundary is preliminary and subject to change.
5. TD = Total depth of soil boring below ground surface.

COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 115-001	36S	3.0-1

Ahtna
Facility Services, Inc.
P. 916.403.5300 www.afsiak.com F. 916.329.1590
3100 Beacon Boulevard
West Sacramento, CA 95691

Legend

- 8' Depth of Impacted Soil
- Soil Boring (2018)
- Soil Boring (2017)
- Soil Boring (2014)
- Soil Gas Sample (2018)
- Soil Gas Sample (2017)
- Impacted Area
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Google Earth: August 20, 2018.
2. Survey data provided by DOE, 2011.
3. AOC 115-001 boundary is preliminary and subject to change.

AREAS EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO.1

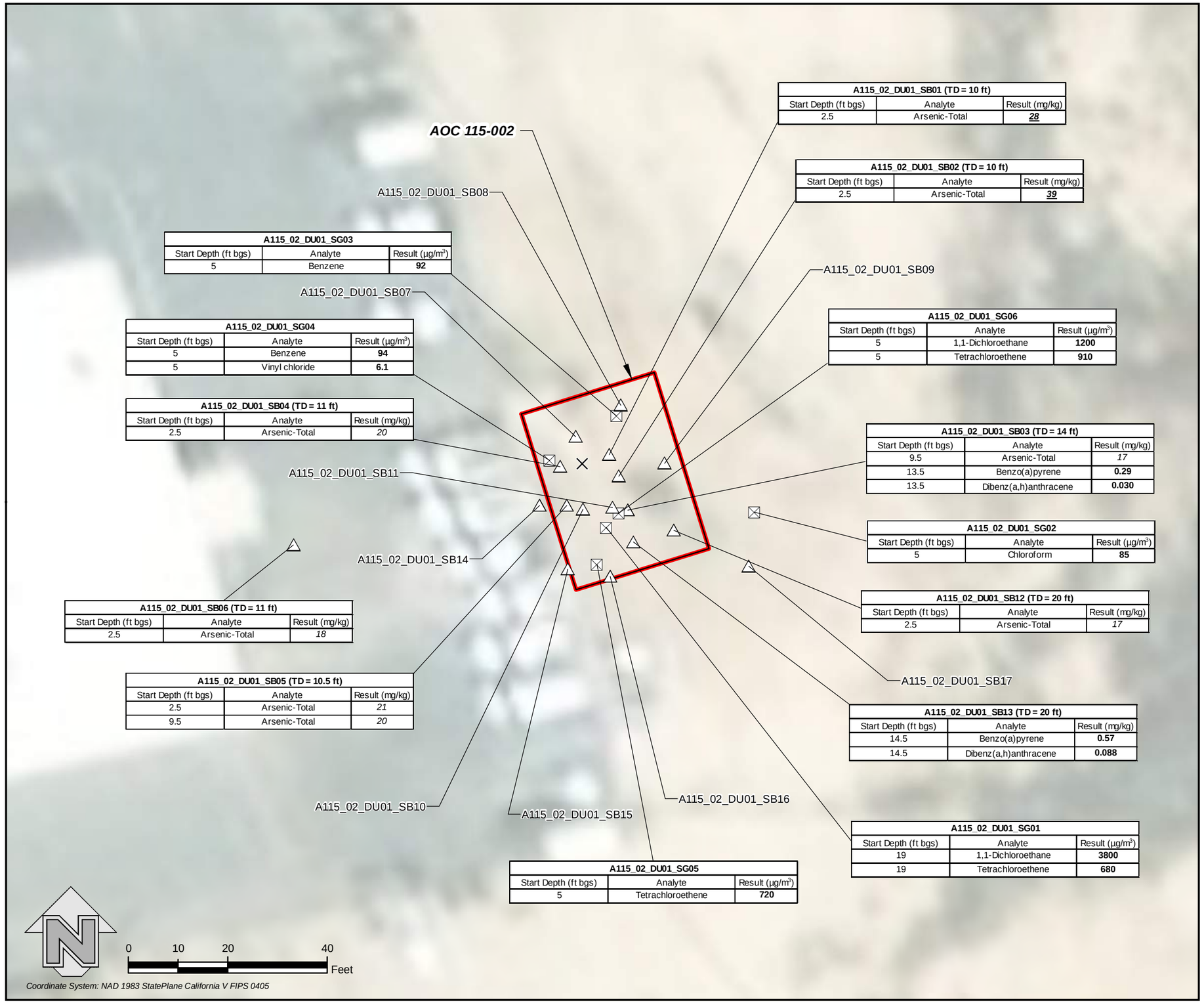
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 115-001	36S	4.3-1

AOC 115-002

Reference

Ahtna, 2019. *Draft Interim Measures/Removal Action Work Plan AOC 115-002*. 15 November.



A115_02_DU01_SB01 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	***28***

A115_02_DU01_SB02 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	***39***

A115_02_DU01_SG03		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
5	Benzene	**92**

A115_02_DU01_SG04		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
5	Benzene	**94**
5	Vinyl chloride	**6.1**

A115_02_DU01_SG06		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
5	1,1-Dichloroethane	**1200**
5	Tetrachloroethene	**910**

A115_02_DU01_SB04 (TD = 11 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*20*

A115_02_DU01_SB03 (TD = 14 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
9.5	Arsenic-Total	*17*
13.5	Benzo(a)pyrene	**0.29**
13.5	Dibenz(a,h)anthracene	**0.030**

A115_02_DU01_SG02		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
5	Chloroform	**85**

A115_02_DU01_SB06 (TD = 11 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*18*

A115_02_DU01_SB12 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*17*

A115_02_DU01_SB05 (TD = 10.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	*21*
9.5	Arsenic-Total	*20*

A115_02_DU01_SB13 (TD = 20 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
14.5	Benzo(a)pyrene	**0.57**
14.5	Dibenz(a,h)anthracene	**0.088**

A115_02_DU01_SG01		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
19	1,1-Dichloroethane	**3800**
19	Tetrachloroethene	**680**

A115_02_DU01_SG05		
Start Depth (ft bgs)	Analyte	Result (µg/m³)
5	Tetrachloroethene	**720**

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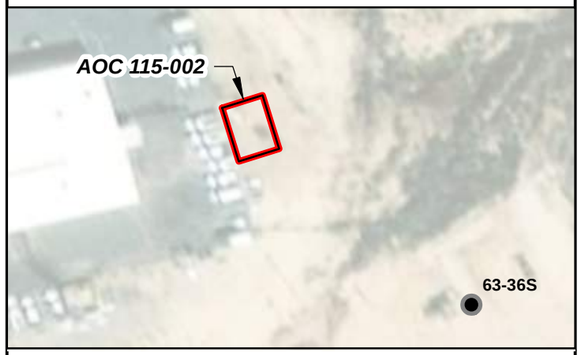


Legend

- Approximate Location of Former 1,000 Gallon Waste Oil UST
- Soil Boring
- Soil Gas Sample
- Well
- Preliminary Area of Concern

Soil Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	*16*	***26***
Analyte	**Residential (mg/kg)**	**Commercial/Industrial (mg/kg)**
Benzo(a)pyrene	**0.11**	**1.3**
Dibenz(a,h)anthracene	**0.028**	**0.31**

Soil Gas Screening Levels

Analyte	Residential (µg/m³)	Commercial/Industrial (µg/m³)
1,1-Dichloroethane	**900**	**7700**
Benzene	**49**	**420**
Chloroform	**60**	**530**
Tetrachloroethene	**230**	**2000**
Vinyl chloride	**4.8**	**160**

Notes

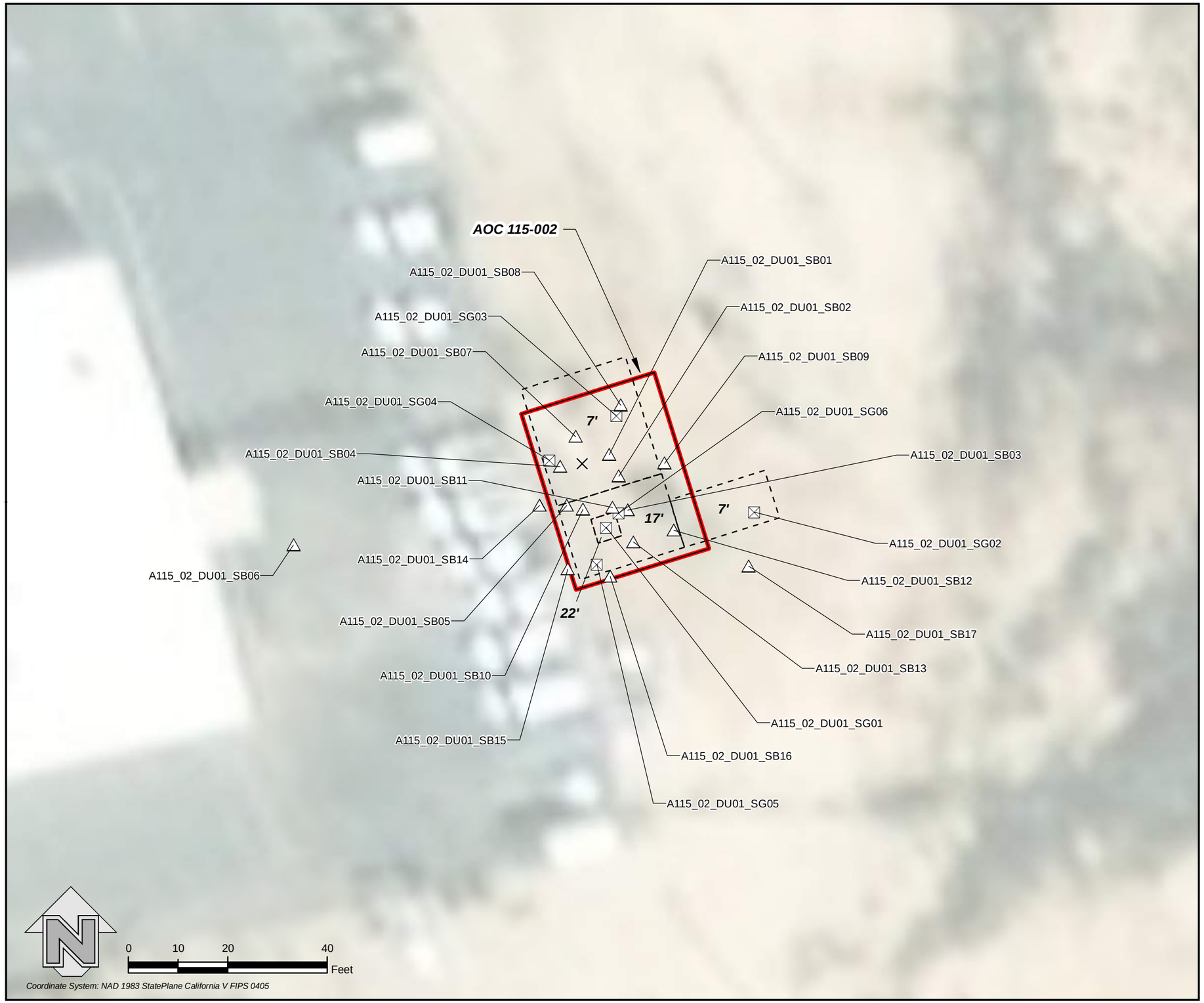
1. Aerial photography provided by Kern County, CA, 2011.
2. AOC 115-002 boundary surveyed by AFSI, 2016.
3. Soil samples and preliminary boundary located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 115-002 boundary is preliminary and subject to change.
5. Well location provided by DOGGR, 2018.
6. TPH results are provided in Table 3.0-1.
7. TD = total depth of soil boring below ground surface.

COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 115-002	36S	3.0-1



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Legend

- 7' Depth of Impacted Soil
- × Approximate Location of Former 1,000 Gallon Waste Oil UST
- △ Soil Boring
- ⊠ Soil Gas Sample
- ● Well
- Impacted Area
- Preliminary Area of Concern

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. AOC 115-002 boundary surveyed by AFSI, 2016.
3. Soil samples and preliminary boundary located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 115-002 boundary is preliminary and subject to change.
5. Well location provided by DOGGR, 2018.

AREA EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO.1

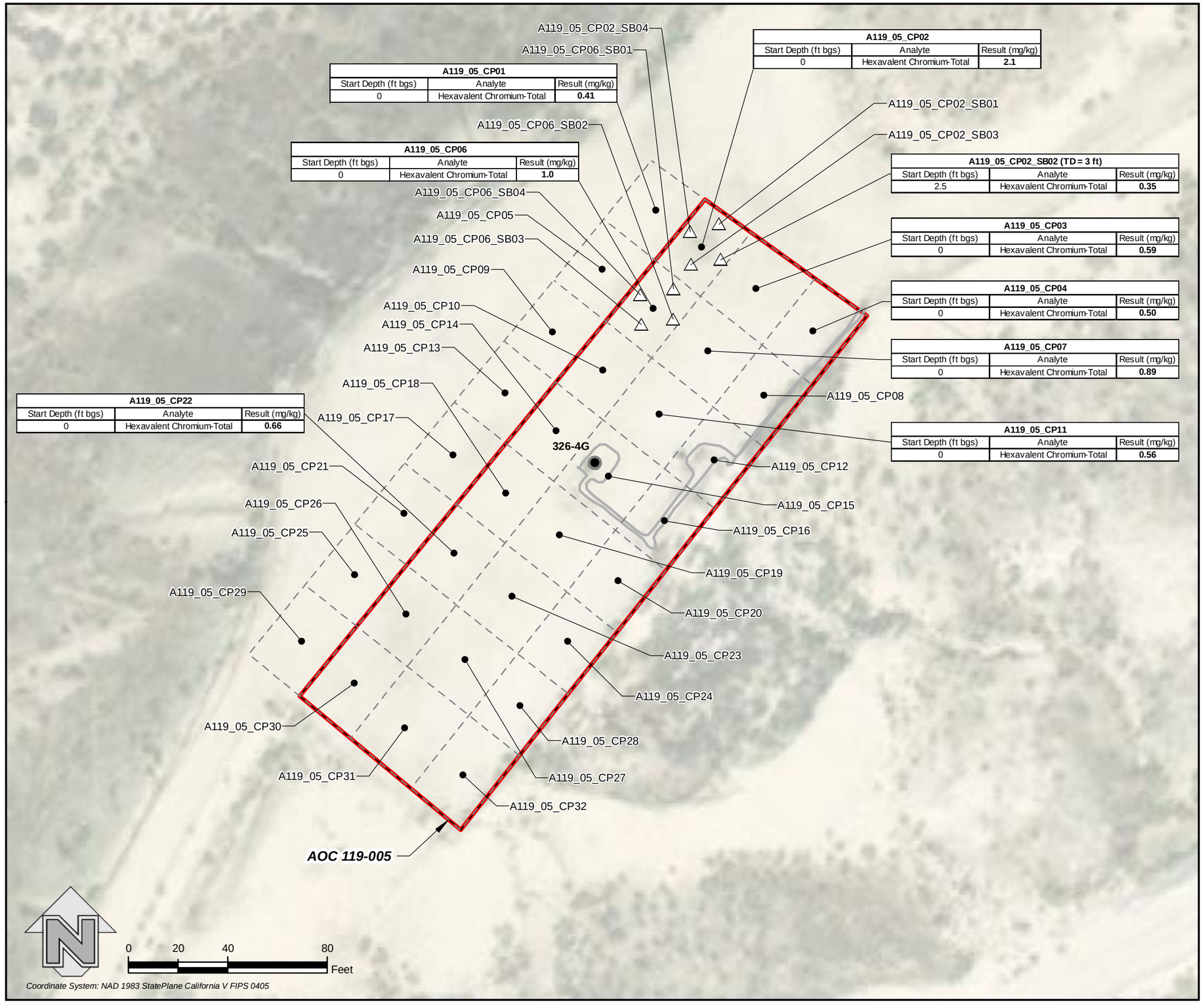
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 115-002	36S	4.3-1

AOC 119-005 and -018

Reference

Ahtna, 2020. *Draft Interim Measures/Removal Action Work Plan AOC 119-005 and AOC 119-018*. 30 November.



A119_05_CP01		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.41**

A119_05_CP02		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**2.1**

A119_05_CP06		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.0**

A119_05_CP02_SB02 (TD = 3 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Hexavalent Chromium-Total	**0.35**

A119_05_CP03		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.59**

A119_05_CP04		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.50**

A119_05_CP07		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.89**

A119_05_CP22		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.66**

A119_05_CP11		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.56**

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Legend

- Sample Reference Point
- Soil Boring
- Well
- 2020 Investigation Sample Area
- Infrastructure
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Residential (mg/kg)	Commercial/Industrial (mg/kg)
Hexavalent Chromium-Total	**0.30**	**6.2**

Notes

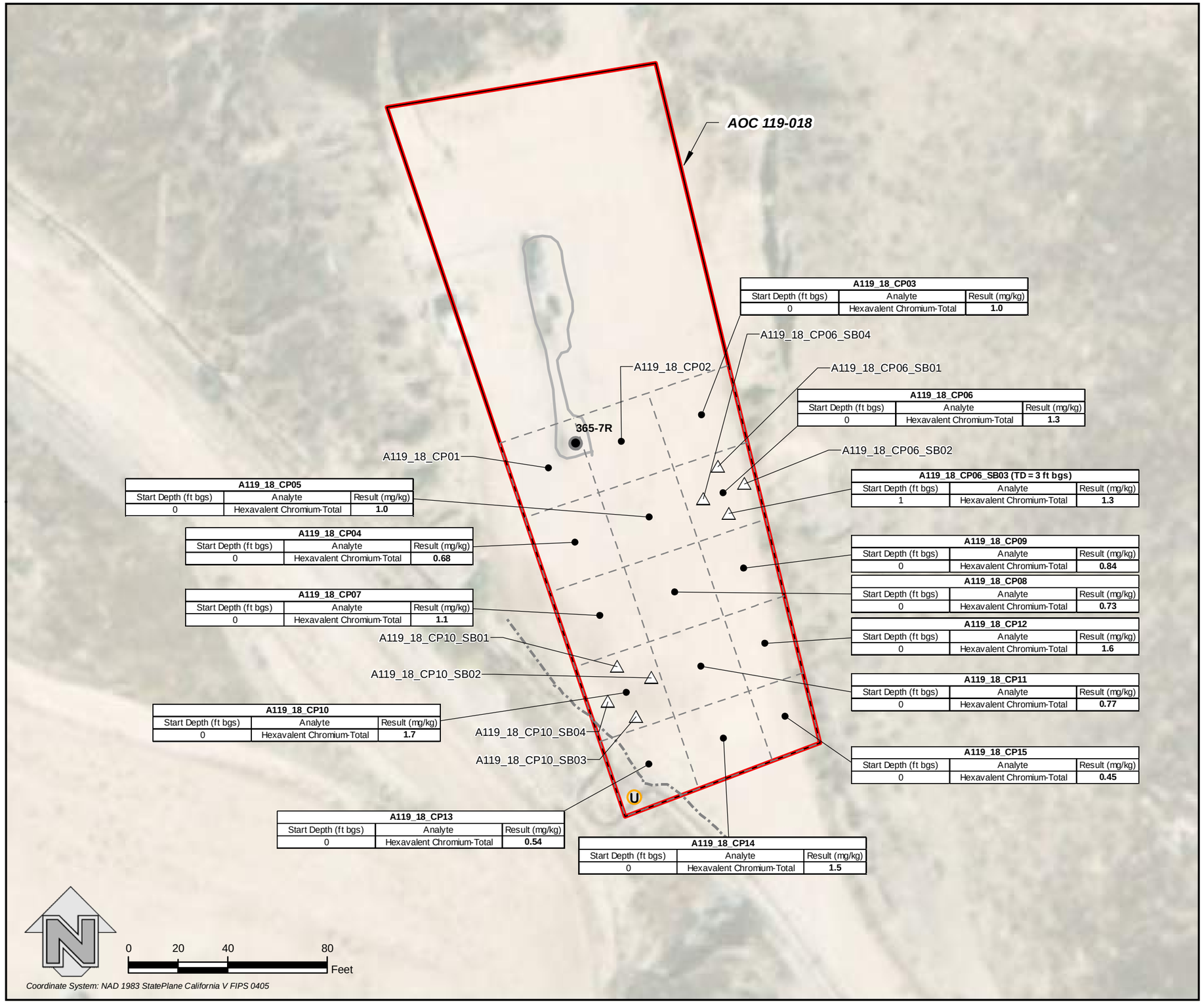
1. Aerial photography provided by Esri Online World Imagery, accessed November 2020.
2. Survey data provided by DOE, 2011.
3. Soil samples and well located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 119-005 boundary is preliminary and subject to change.
5. TD = Total depth below ground surface.

AOC 119-005 COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 119-005	4G	3.0-1



A119_18_CP03		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.0**

A119_18_CP06		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.3**

A119_18_CP06_SB03 (TD = 3 ft bgs)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
1	Hexavalent Chromium-Total	**1.3**

A119_18_CP05		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.0**

A119_18_CP04		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.68**

A119_18_CP09		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.84**

A119_18_CP08		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.73**

A119_18_CP07		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.1**

A119_18_CP12		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.6**

A119_18_CP11		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.77**

A119_18_CP10		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.7**

A119_18_CP15		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.45**

A119_18_CP13		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**0.54**

A119_18_CP14		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium-Total	**1.5**

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Legend

- U Power Pole
- Sample Reference Point
- Soil Boring
- Well
- Pipe
- 2020 Investigation Sample Area
- Infrastructure
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Residential (mg/kg)	Commercial/Industrial (mg/kg)
Hexavalent Chromium-Total	**0.30**	**6.2**

Notes

1. Aerial photography provided by Esri Online World Imagery, accessed November 2020.
2. Survey data provided by DOE, 2011.
3. Soil samples and well located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 119-018 boundary is preliminary and subject to change.
5. TD = Total depth below ground surface.

AOC 119-018 COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 119-018	7R	3.0-2

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Legend

- 2' Depth of Impacted Soil
- Sample Reference Point
- Well
- Impacted Area
- Infrastructure
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Esri Online World Imagery, accessed November 2020.
2. Survey data provided by DOE, 2011.
3. Soil samples and well located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 119-005 boundary is preliminary and subject to change.

AOC 119-005 AREA EXCEEDING CLEANUP GOAL

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 119-005	4G	4.3-1

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Legend

- 2' Depth of Impacted Soil
- Sample Reference Point
- Soil Boring
- Well
- Pipe
- Impacted Area
- Infrastructure
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Esri Online World Imagery, accessed November 2020.
2. Survey data provided by DOE, 2011.
3. Soil samples and well located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 119-018 boundary is preliminary and subject to change.

AOC 119-018 AREA EXCEEDING CLEANUP GOAL

FORMER NAVAL PETROLEUM RESERVE NO.1

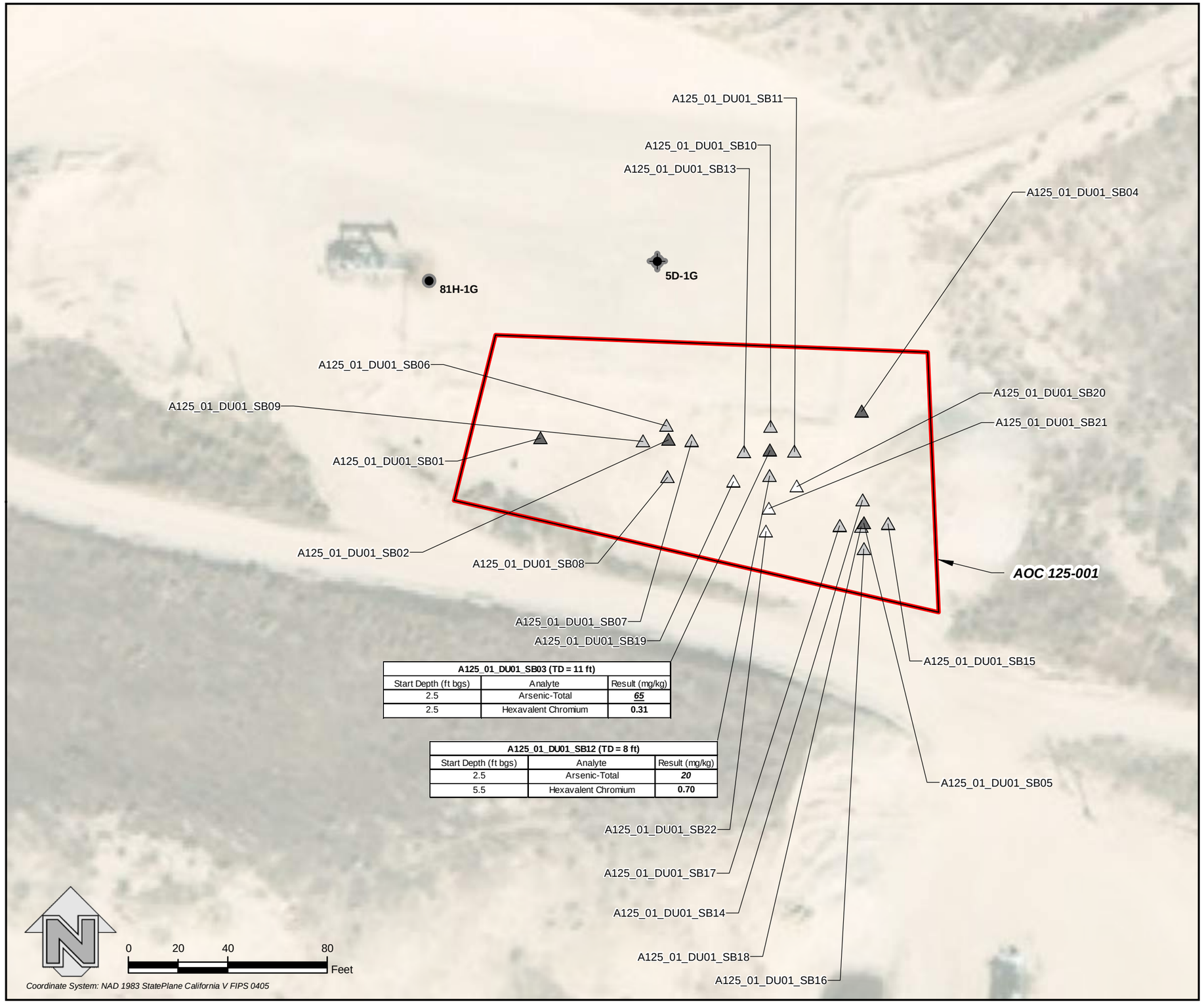
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 119-018	7R	4.3-2

AOC 125-001

Reference

Ahtna, 2020. *Draft Interim Measures/ Removal Action Work Plan AOC 125-001*. 6 November.



A125_01_DU01_SB03 (TD = 11 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	***65***
2.5	Hexavalent Chromium	**0.31**

A125_01_DU01_SB12 (TD = 8 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	***20***
5.5	Hexavalent Chromium	**0.70**

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Legend

- Abandoned Well
- Active Well
- Soil Boring (2018)
- Soil Boring (2017)
- Soil Boring (2013)
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	***16***	***26***
Analyte	**Residential (mg/kg)**	**Commercial/Industrial (mg/kg)**
Hexavalent Chromium	**0.30**	**6.2**

Notes

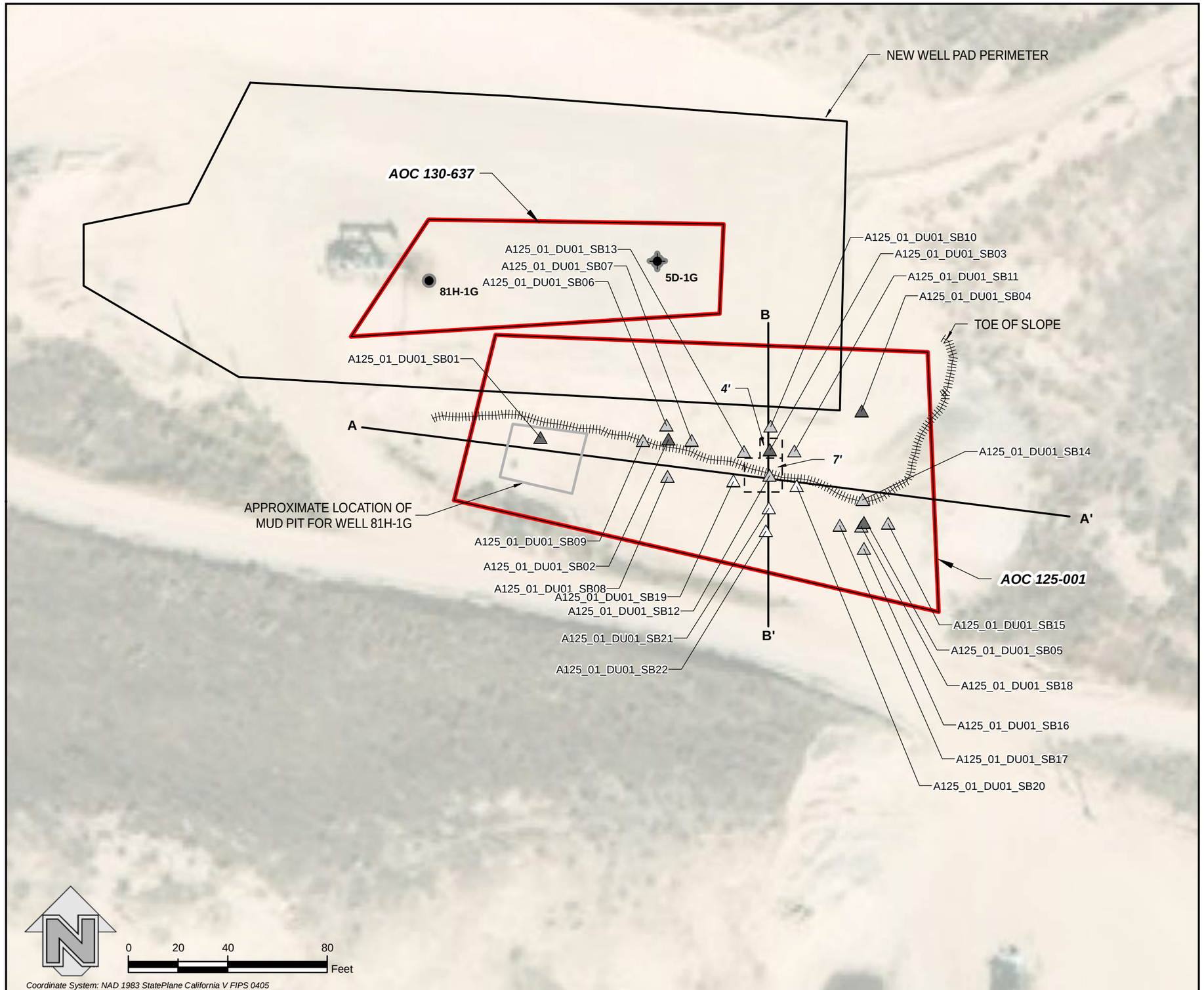
1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 125-001 boundary is preliminary and subject to change.
5. TD = total depth of soil boring below ground surface.

COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-001	1G	3.0-1



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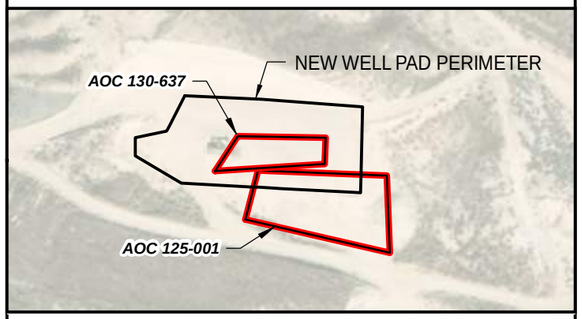


Legend

- 4' Depth of Impacted Soil
- Active Well
- Abandoned Well
- Soil Boring (2018)
- Soil Boring (2017)
- Soil Boring (2013)
- A—A' Cross Section
- Impacted Area
- Slope
- Mud pit
- New Well Pad Perimeter
- Preliminary Area of Concern Boundary

Notes

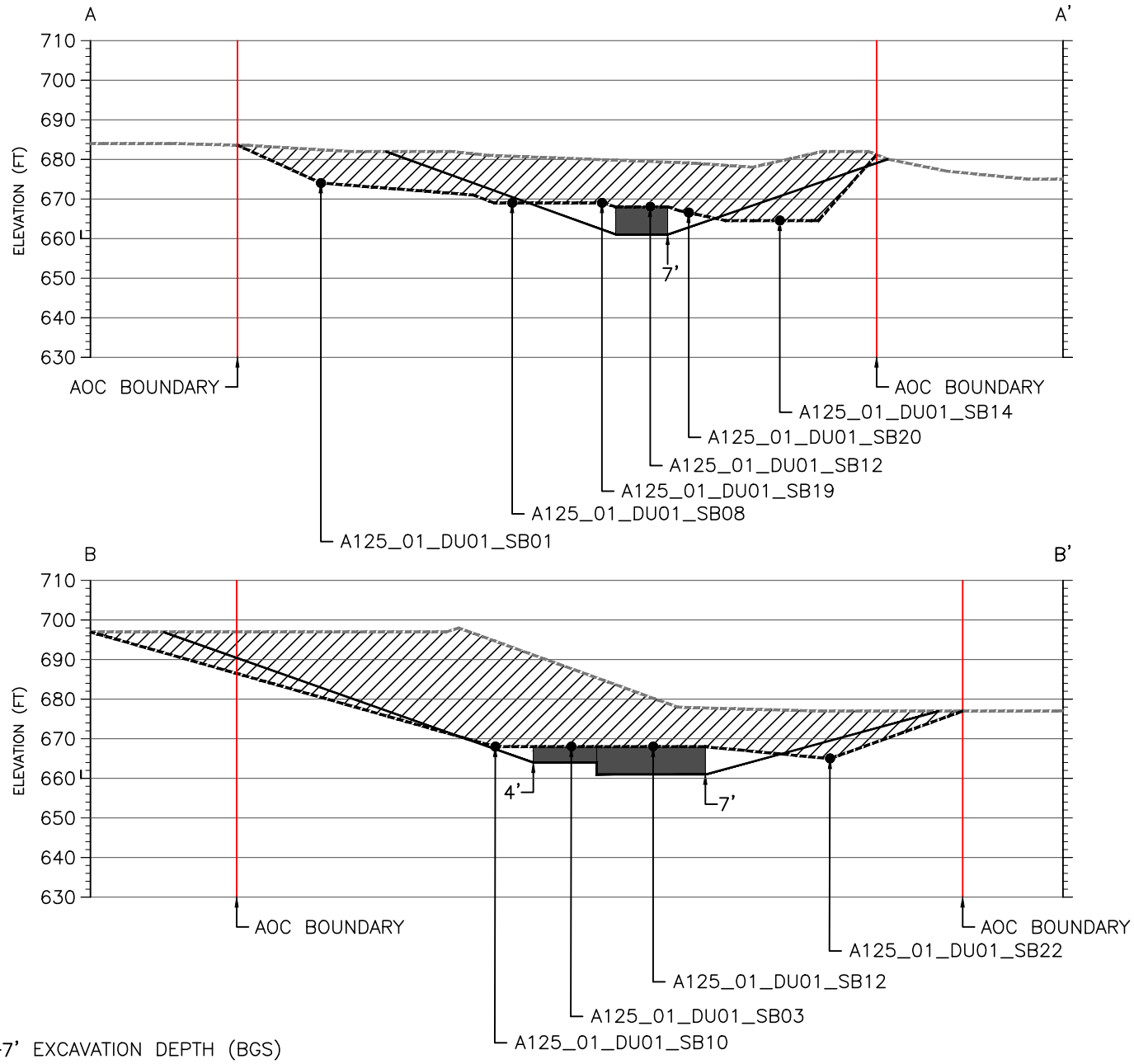
1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. Soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 125-001 and AOC 130-637 boundaries are preliminary and subject to change.

AREA EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-001	1G	4.3-1



7' EXCAVATION DEPTH (BGS)

● TOP OF SOIL BORING

EXISTING GROUND SURFACE

PREVIOUS GROUND SURFACE

PROPOSED EXCAVATION SURFACE

WELL PAD OVERBURDEN

IMPACTED SOIL

2X VERTICAL EXAGGERATION

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CROSS SECTIONS OF AREA EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO. 1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-001	1G	4.3-2

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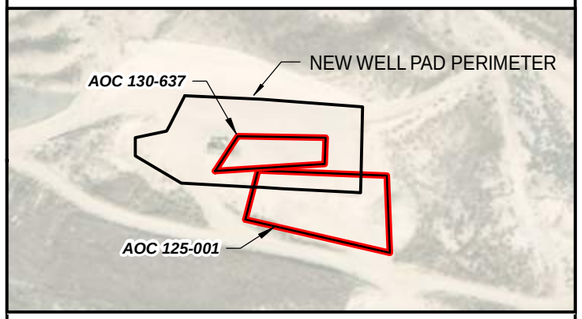


Legend

- *4'* Depth of Impacted Area
- Abandoned Well
- Active Well
- Impacted Area Vertex
- Slope
- Impacted Area
- Limit of Excavation
- Mud pit
- New Well Pad Perimeter
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Kern County, CA, 2011.
2. Survey data provided by DOE, 2011.
3. AOC 125-001 and AOC 130-637 boundaries are preliminary and subject to change.
4. Refer to Table 6.0-1 for the impacted area vertex coordinates, provided in California State Plane Zone 5 US Feet.

IMPACTED AREA AND EXCAVATION BOUNDARY

FORMER NAVAL PETROLEUM RESERVE NO.1

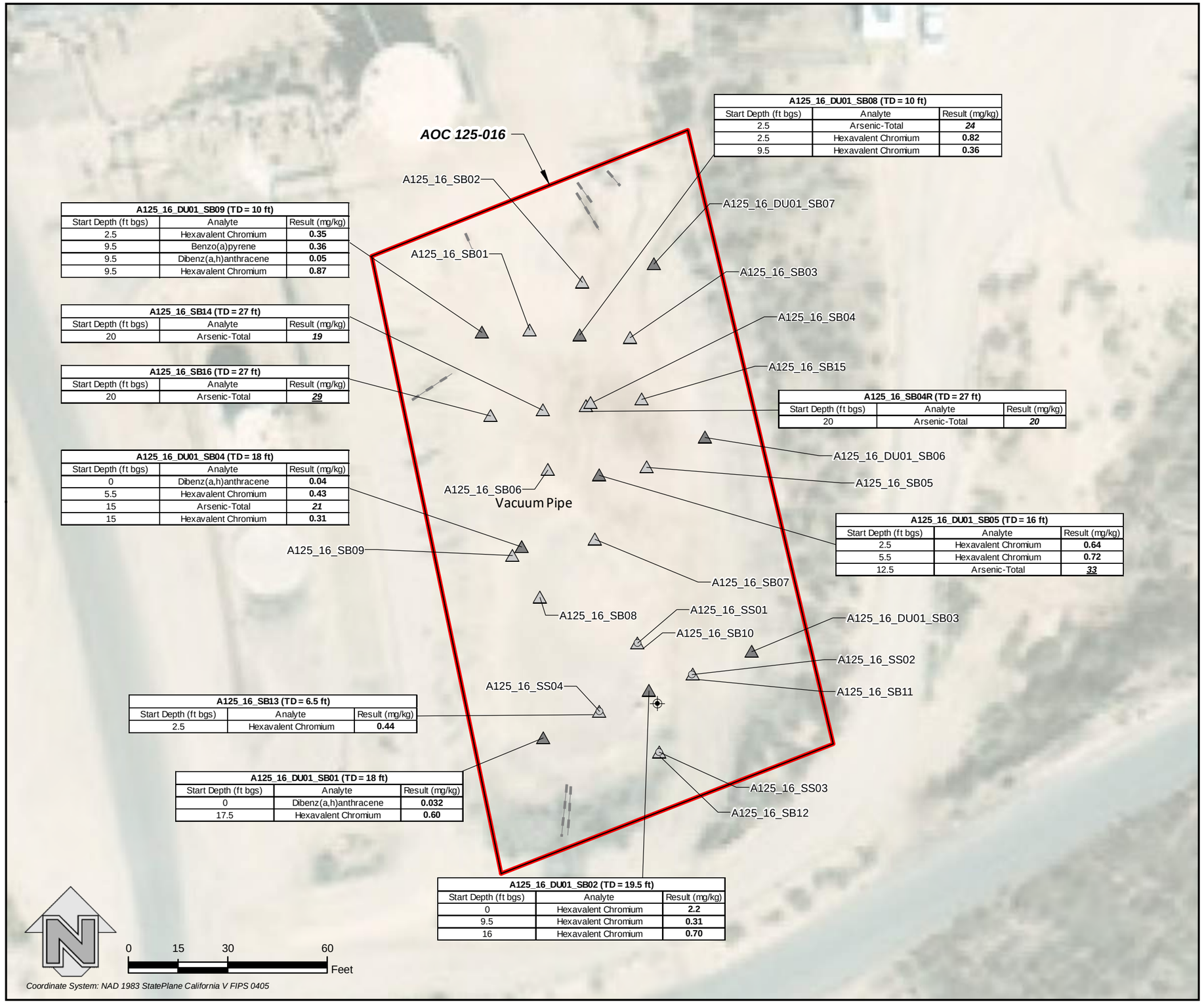
KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-001	1G	6.0-1

AOC 125-016

Reference

Ahtna, 2021. *Draft Interim Measures/ Removal Action Work Plan AOC 125-016.* 12 February.



A125_16_DU01_SB08 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Arsenic-Total	***24***
2.5	Hexavalent Chromium	**0.82**
9.5	Hexavalent Chromium	**0.36**

A125_16_DU01_SB09 (TD = 10 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Hexavalent Chromium	**0.35**
9.5	Benzo(a)pyrene	**0.36**
9.5	Dibenz(a,h)anthracene	**0.05**
9.5	Hexavalent Chromium	**0.87**

A125_16_SB14 (TD = 27 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
20	Arsenic-Total	***19***

A125_16_SB16 (TD = 27 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
20	Arsenic-Total	***29***

A125_16_SB04R (TD = 27 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
20	Arsenic-Total	***20***

A125_16_DU01_SB04 (TD = 18 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Dibenz(a,h)anthracene	**0.04**
5.5	Hexavalent Chromium	**0.43**
15	Arsenic-Total	***21***
15	Hexavalent Chromium	**0.31**

A125_16_DU01_SB05 (TD = 16 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Hexavalent Chromium	**0.64**
5.5	Hexavalent Chromium	**0.72**
12.5	Arsenic-Total	***33***

A125_16_SB13 (TD = 6.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
2.5	Hexavalent Chromium	**0.44**

A125_16_DU01_SB01 (TD = 18 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Dibenz(a,h)anthracene	**0.032**
17.5	Hexavalent Chromium	**0.60**

A125_16_DU01_SB02 (TD = 19.5 ft)		
Start Depth (ft bgs)	Analyte	Result (mg/kg)
0	Hexavalent Chromium	**2.2**
9.5	Hexavalent Chromium	**0.31**
16	Hexavalent Chromium	**0.70**

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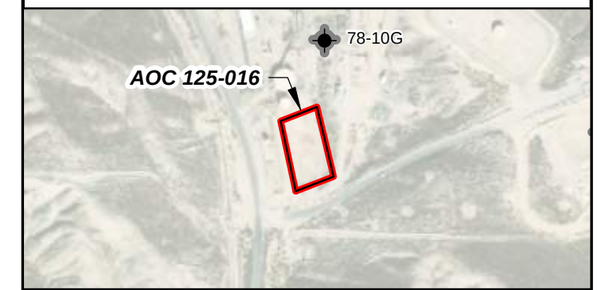


Legend

- Surface Sample (2020)
- Soil Boring (2020)
- Soil Boring (2015)
- Vacuum Pipe
- Well
- Approximate Location of Inlet Pipe
- Preliminary Area of Concern Boundary

Screening Levels

Analyte	Background (mg/kg)	Action Level (mg/kg)
Arsenic-Total	***16***	***26***
Analyte	**Residential (mg/kg)**	**Commercial/Industrial (mg/kg)**
Benzo(a)pyrene	**0.11**	**1.3**
Dibenz(a,h)anthracene	**0.028**	**0.31**
Hexavalent Chromium	**0.30**	**6.2**

Notes

1. Aerial photography provided by Esri Online World Imagery, accessed December 2020.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 125-016 boundary is preliminary and subject to change.
5. TD = total depth of soil boring below ground surface.

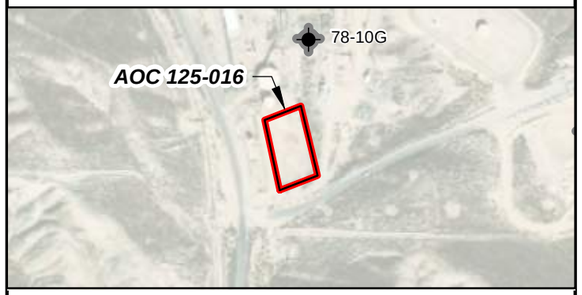
COC RESULTS EXCEEDING SCREENING LEVELS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-016	10G	3.0-1

Ahtna
Facility Services, Inc.
P. 916.403.5300 www.afsiak.com F. 916.329.1590
3100 Beacon Boulevard
West Sacramento, CA 95691



Legend

- Soil Boring (2020)
- Soil Boring (2015)
- Vacuum Pipe
- Well
- Approximate Location of Inlet Pipe
- Impacted Area
- Preliminary Area of Concern Boundary

Notes

1. Aerial photography provided by Esri Online World Imagery, accessed December 2020.
2. Survey data provided by DOE, 2011.
3. Surface samples and soil borings located using Trimble GeoXH receiver with Virtual Reference Station real-time data correction.
4. AOC 125-016 boundary is preliminary and subject to change.

AREA EXCEEDING CLEANUP GOALS

FORMER NAVAL PETROLEUM RESERVE NO.1

KERN COUNTY, CALIFORNIA

Location	Section Designator	Figure No.
AOC 125-016	10G	4.3-1