Biak Training Center Brett Hall
Powell Butte, OR
Site Inspection
Oregon Army National Guard

Technical Project Planning (TPP) Meeting 1 & 2

Preliminary Assessments and Site Inspections (PA/SI) for Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites

25 January 2022

Agenda

- Introductions
- Safety Moment
- TPP Meeting Goals
- Army National Guard (ARNG) PA/SI Overview
- Biak Training Center Brett Hall ARNG PA Results
- Biak Training Center Brett Hall SI Overview
- Stakeholder Involvement
- Questions and Open Discussion

Introductions

- ARNG G9
  - Dave Connolly, PFAS Program Manager
  - Bonnie Packer, Nationwide Project Manager
  - Joe Davis
- United States Army Corps of Engineers (USACE)
  - Tim Peck, Nationwide Program Manager
  - Briana Niestrom, SI Project Manager
- Oregon Army National Guard (ORARNG)
  - James Arnold (Environmental Program Manager)
  - Kelly Toynton (Environmental Restoration / Compliance Program Manager)
- Oregon Department of Environmental Quality (Oregon DEQ)
  - Anna Ferris
  - Dan Hafley
  - Alyssa Leidel
- Oregon Health Authority (OHA)
  - Gregg Baird
  - Todd Hudson
- AECOM Technical Services, Inc.
  - Jeremy Haney, SI Task Manager
  - Anthony Palmieri, SI Senior Lead
  - Matt Costakis, SI Geologist

Safety Moment
Site Safety Procedures

- SI will follow USACE Engineering Manual (EM) 385-1-1 requirements:
  - Accident Prevention Plan addresses all component plans for EM 385-1-1, including Construction Support during drilling operations
  - Site Safety and Health Plan (SSHP) addresses project participants, training, and hazard identification and mitigation
- Health and safety documents prepared during SI planning phase
  - SSHP has been revised to incorporate COVID-19 updates and protective measures

TPP Meeting Goals

- TPP1:
  - Provide an overview of the ARNG PA/SI Program
    - Regulatory framework
  - Discuss PA Findings
  - Define objectives for SI data collection
  - Encourage stakeholder involvement
  - Review project schedule
  - Capture action items
- TPP2: Discuss proposed SI approach
- TPP3: Discuss SI findings
- Participants:
  - TPP1 and 2: ARNG, USACE, Oregon DEQ, OHA
  - TPP3: ARNG, USACE, Oregon DEQ, OHA, other local stakeholders

ARNG PA/SI Overview

Work Phases

Notes: *Current stage of activity

- Follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Process
- An interim removal action can be conducted or a No Further Action determination can be made at any phase

ARNG PA/SI Overview

- Activities centrally contracted through USACE and managed by ARNG G9
  - USACE Baltimore manages the contract, with technical project support from Alaska, Louisville, Omaha, Sacramento, Jacksonville, and Seattle Districts
  - Project support: chemistry, geology, risk screening
- ARNG evaluated 3,200 facilities in 54 states/territories with state ARNG input
- PA ranking (~200 facilities with potential for release)
  - Likelihood of release
  - Complete pathway to drinking water receptor
  - Priority assigned to facilities with highest likelihood of release near drinking water intake
- PA – facility-wide; SI – areas of interest (AOIs)

ARNG PA/SI Overview

- ARNG / ORARNG
  - Identify potential per- and polyfluoroalkyl substances (PFAS) release locations
  - Provide facility access and points of contact
  - Gather and provide appropriate documents
  - Identify/schedule personnel to interview
  - Supply final PA to the regulatory agencies
- SI Regulatory Involvement
  - CERCLA SI conducted in conjunction with the appropriate regulatory agency

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- Potential PFAS release areas: 2 identified during the PA and placed within 2 AOIs
- PFAS releases attributed to discharge of AFFF during non-ORARNG training events:
  - AFFF discharged to soil at Engine Academy Training Area during fire training events between 2000-2011 and 2013-2015
  - AFFF discharged to soil at Bomb Squad Training Area during FBI training events between 2016 and 2017

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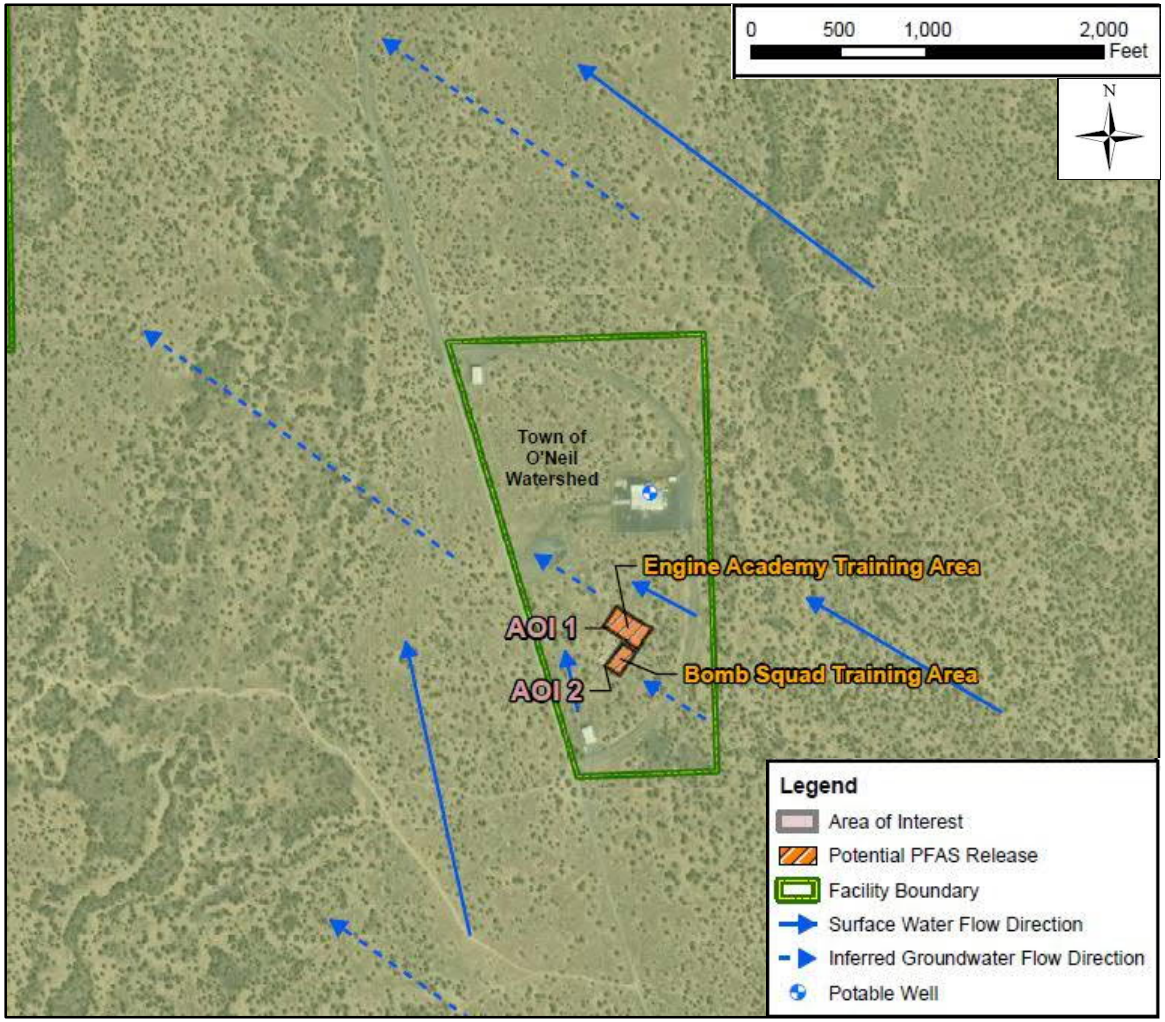
Summary of Findings and AOIs



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PA Findings: Engine Academy Training Area, AOI 1

- Located at the Military Operations Urban Terrain (MOUT) range ~660 ft southwest of facility building
- Releases occurred between 2000-2011 and between 2013-2015
- AFFF applied to wooden structures, no fires occurred or were set
- Concentrations and volumes of AFFF released are unknown

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PA Findings: Bomb Squad Training Area, AOI 2

- Located at MOUT range ~830 ft southwest of facility building
  - Adjacent to AOI 1
- Releases occurred between 2016-2017 during FBI training events
- AFFF released during bomb squad training exercises, no fires were set
- Concentrations and volumes of AFFF released are unknown

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SI Overview
Data Quality Objectives (DQOs)

- Primary SI DQOs
  - Confirm the presence/absence of a release
  - Gather data for conceptual site model (CSM):
    - Understanding the Source-Pathway-Receptor relationship is required to establish a sampling strategy
- Extended SI DQOs
  - Determine the presence/absence at facility boundary
  - Check for alternate sources
  - Measure PFAS at/near receptor, if warranted

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- Results compared to Office of the Secretary of Defense (OSD) Screening Levels (SLs) for soil and groundwater
  - Memorandum from the OSD dated 15 September 2021
  - SLs for groundwater based on direct ingestion
  - SLs for soil based on incidental ingestion; 0-2 ft compared to Residential SL, 2-15 ft compared to Industrial SL, >15 ft not compared to either SL
- AOIs exceeding OSD SLs will proceed to the next phase under CERCLA (i.e., Remedial Investigation)

Analyte	Residential (Soil) (µg/kg)[a] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a] 2-15 feet bgs	Tap Water (Groundwater) (ng/L)[a]
PFOA	130	1,600	40
PFOS	130	1,600	40
PFBS	1,900	25,000	600

Notes:

a.) Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater and Soil using United States Environmental Protection Agency's (USEPA's) Regional Screening Level Calculator. Hazard Quotient (HQ) = 0.1. 15 September 2021.

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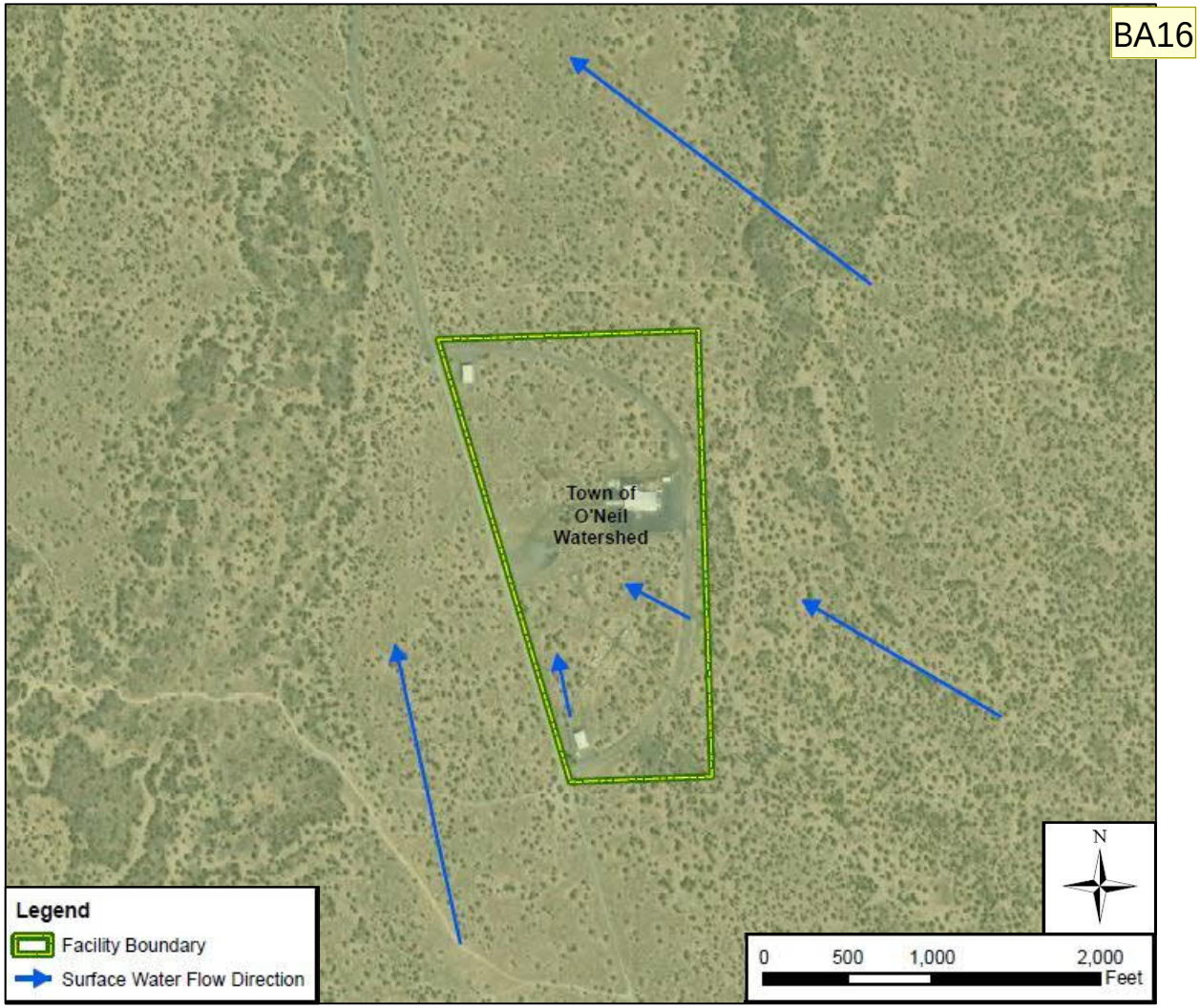
SI Overview: CSM – Surface Water Features



BA16 Update with site-specific SW figure

Borden, Andrew, 4/2/2020

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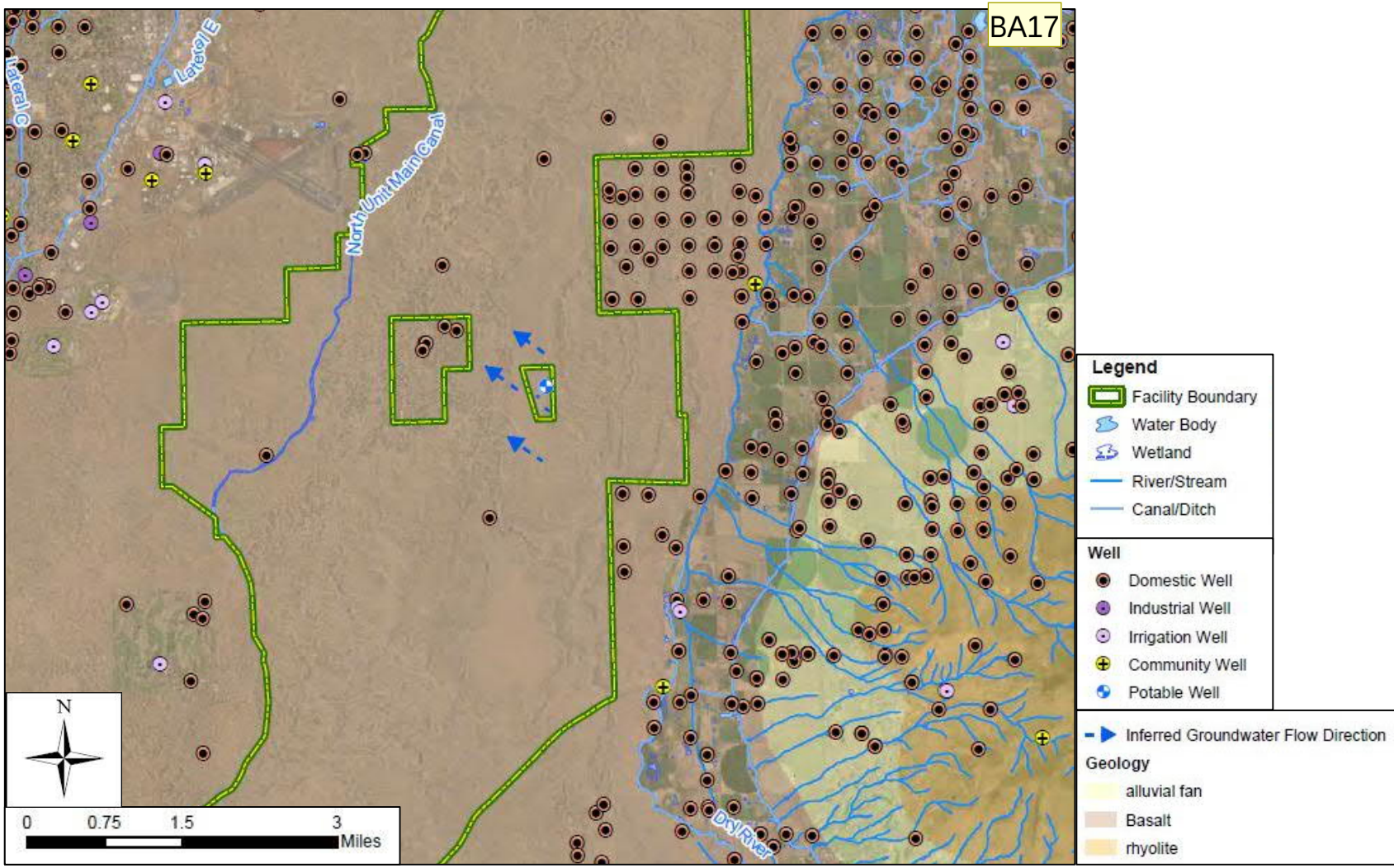
SI Overview: CSM – Groundwater Features



Slide 16

BA17 Update with site-specific GW figure

Borden, Andrew, 4/2/2020

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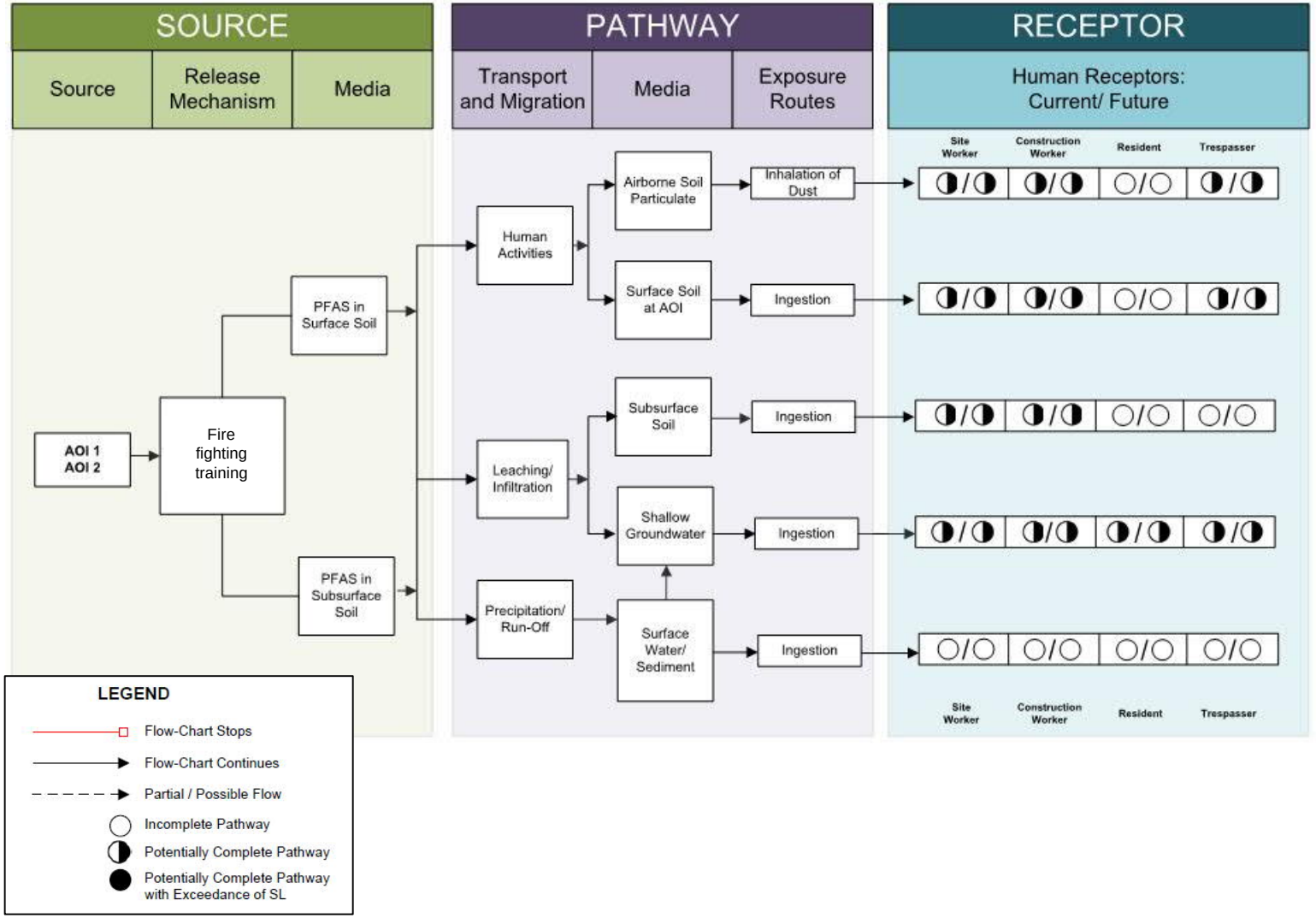

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- Finalize Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) Addendum
  - Draft Final submitted on 13 September 2021
  - Final to be submitted following the TPP 1&2 meeting
- Continuous soil cores to target depth or bedrock
  - Soil samples collected at surface, mid point, at soil/bedrock contact
- Continuous rock cores to target depth or first encountered groundwater
  - Samples collected from interbeds or zones of fine-grained, non-competent material, if present
- Collect a groundwater sample from permanent monitoring wells
- Survey permanent wells to assess groundwater gradient
  - May include the facility drinking water well

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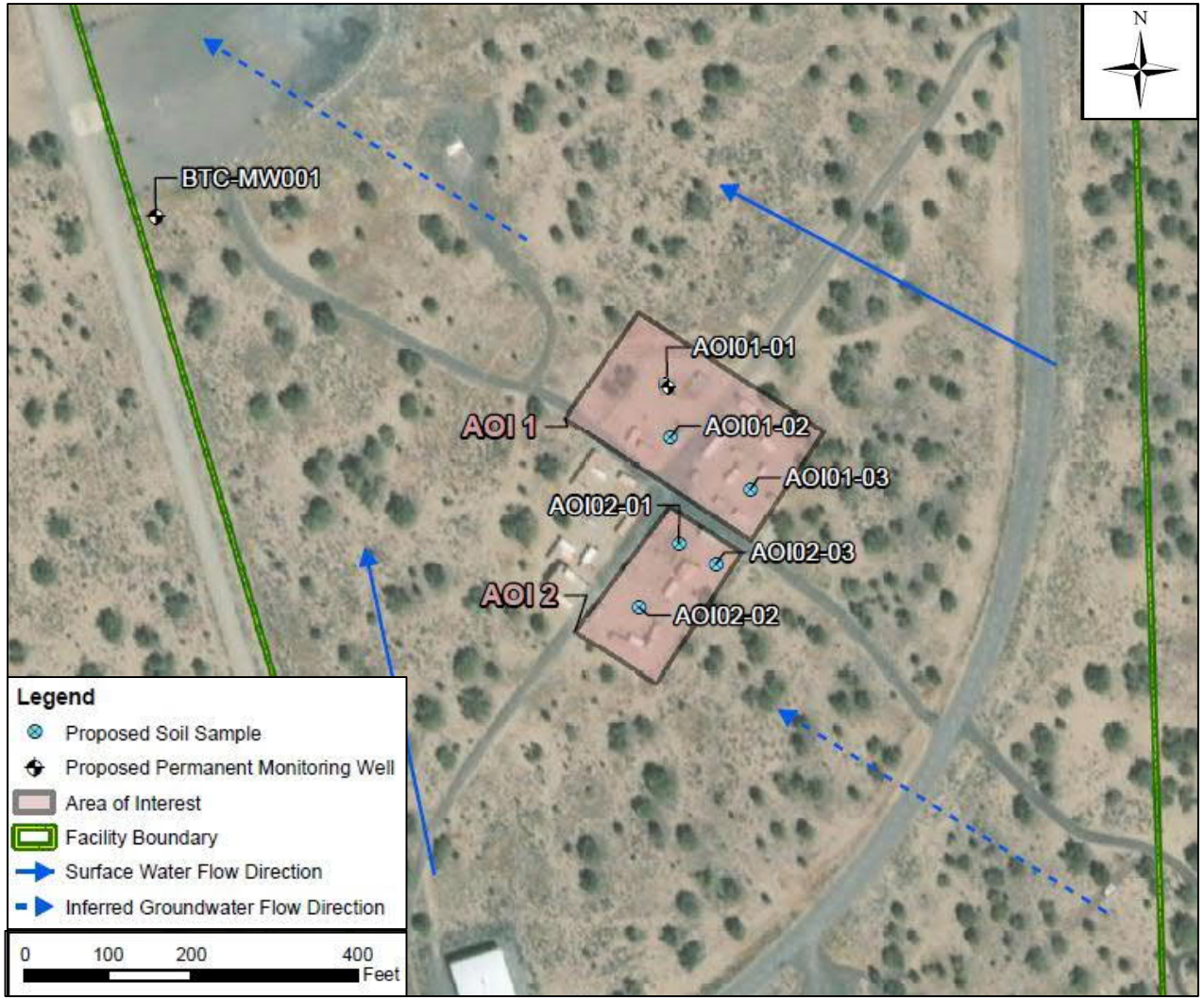
SI Overview: Proposed Sampling Locations



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AOI	Potential PFAS Release Area	# of Sonic Borings	Approximate Depth (feet bgs)	Groundwater Samples	Soil Samples	Surface Water/Sediment
1	Engine Academy Training Area	2 1	20 380	0 1	6 6*	0
2	Bomb Squad Training Area	3	20	0	9	0
--	Sitewide Locations	1	380	1	3*	0
Total (not including QC)		7	-	2	24	0

*Includes up to 3 interbed samples is fine-grained material is encountered.

- Sample locations will be refined in the field
  - Confirm placement is accessible and will meet DQOs at time of the utility mark-out

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Analytical Parameters

Perfluorooctanesulfonic acid (PFOS)	Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanoic acid (PFNA)
Perfluorooctanoic acid (PFOA)	Perfluorobutanesulfonic acid (PFBS)
Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)
Perfluorodecanoic acid (PFDA)	Perfluorotetradecanoic acid (PFTeDA)
Perfluorododecanoic acid (PFDoA)	Perfluorohexanoic acid (PFHxA)
Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUdA)
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)

- Analysis completed by Environmental Laboratory Accreditation Program (ELAP)/ National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory
- Level IV data package will be received from the laboratory
- Data will undergo Stage 2b validation as defined in the Department of Defense (DoD) General Data Validation Guidelines

Stakeholder Involvement

- Use TPPs and open communication to encourage stakeholder involvement
- Key involvement topics
  - Proposed approaches
  - Document review time for Oregon DEQ and other stakeholders
- Schedule:
  - Address remaining comments and issue Final UFP-QAPP Addendum: February 2022
  - Field Investigation: April - May 2022

Questions and Open Discussion

- Coordination
  - Utility mark-out and clearance process
  - Report distribution (paper, electronic, portable document format)
  - IDW handling
  - Site walk
  - Stakeholder relations
- Schedule

Acronyms

- AFFF – aqueous film forming foam
- AOI – areas of interest
- ARNG – Army National Guard
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- COVID-19 – Coronavirus Disease 2019
- CSM – conceptual site model
- DEQ – Department of Environmental Quality
- DQO – data quality objective
- ELAP – Environmental Laboratory Accreditation Program
- EM – Engineering Manual
- FTA – Fire Training Area
- MOUT– Military Operations on Urban Terrain
- NELAP – National Environmental Laboratory Accreditation Program
- ORARNG – Oregon Army National Guard
- PA – Preliminary Assessment
- PFAS – per- and polyfluoroalkyl substances
- PFOS – perfluorooctanesulfonic acid
- PFOA – perfluorooctanoic acid
- SI – Site Inspection
- SSHP – Site Safety and Health Plan
- TPP – Technical Project Planning
- UFP-QAPP – Uniform Federal Policy-Quality Assurance Project Plan
- USACE – United States Army Corps of Engineers