

PERFORMANCE-BASED REMEDIATION (PBR) AT FORMER GALENA FORWARD OPERATING LOCATION (FOL), ALASKA

RAB Meeting, 13 April 2016, Galena, Alaska



Former Galena FOL PBR Contract

- Parsons Prime Contractor
- Partnering Team CH2M and Ahtna Engineering Services
- Remediation of 31 sites contaminated primarily with fuels and solvents
- Installation of remediation systems from 2015 to 2018





Field Activities Completed in 2015 (reviewed at October 2015 RAB)

- Installed four Pilot Test Soil Vapor Extraction (SVE) Systems at SS022 (B400), OW024 (OWS1833), SS019, and SS025
- Excavation at CSS002 (former Building 1812)
- Excavation at CST013 (former UST 1770)
- Time Critical Removal Action (TCRA) excavation at DP023 (Disposal Site West of Dike - DSWD)
- Confirmed Abandonment of USTs at CST011 (former Combat Alert Cell hangar)
- Annual Landfarm Operations
- Annual Groundwater Monitoring
- Sampling for Preliminary Design or Risk Calculations



SVE Pilot Test Locations







- SS002, SS025, and OW024 Pilot SVE Systems running all winter – monitored monthly
- SS019 SVE System shut down in October to evaluate emissions data - started back up in March
- Sampling of GAVTC Subsurface Depressurization System (Site CB001)
- Late April Pilot SVE Systems shut down for annual static soil vapor sampling



2016 Field Work

- DP023 TCRA Outside Galena Waste Disposal (July)
- Install six Bioventing and three SVE Systems (June to September)
- Install four Vertical Air Sparge Systems (July to September)
- Sulfate-Enhanced Bioremediation Injection at CSS002
- CSS001 (AST1569) Excavation (mid July/August)
- Annual Groundwater Monitoring (August)
- Landfarm Operations (June to September)
- 2017 Implement remaining remedies
- Operate remedies and prepare close out reports, as appropriate (through 2020)



DP023 TCRA Waste Disposal Summary

Soil and Debris Removed from Excavation

- Total of 300 supersacks of soil with potential PCBs (7 of 8 samples collected from supersacks had PCBs not detected (ND or <1.0 mg/kg)</p>
- 200-300 drums of tar waste
- 40 overpack drums with leaking drums and oil stained soil
- 6 drums of batteries
- 5 drums with transformers
- 20 cy of asbestos containing material
- About 10 cy of porous debris
- 48 truck loads of clean debris to landfill





2016 Remediation System Installations





Legend





Figure 1

Installation of 2016 Remediation Systems at the Former Galena FOL

Former Galena Forward Operating Location, Alaska
PARSONS

SIES'Remed/749388_Galena_FOL_PBR/Database/GISWholeSite/2016/Galena_2016RemeSys_Location_2016_Fig-1_11x17.mxd kh 12/17/2015



Bioventing and SVE System Installations

- **<u>Bioventing</u>** Injects air to stimulate aerobic biodegradation of petroleum hydrocarbons
- Six (6) Sites (SS016, ST010, CPL006, SS014/SS017, and CSS002)
- <u>SVE</u> Extracts air to remove VOCs like GRO, benzene, and TCE
- Three (3) Sites (SS015, ST009, and ST020)







SS016 - Former POL Fuel Lab

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Total of 5 shallow and 9 deep vent wells



ST010 - Southeast Runway Fuel Spill

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Total of 12 vent wells





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Area 3 - Total of 9 vent wells



Integrity - Service - Excellence



SS014/SS017 – Former Birchwood Hangar/Former Fuel Stands

Total of 32 shallow and 19 deep vent wells





CSS002 – Former Building 1812

Total of 4 shallow vent wells and 25 sulfate injection points



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Total of 8 deep vent wells





Total of 11 shallow and 8 deep vent wells





ST020 – Former Fuels Lab

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Vertical Air Sparge Systems

<u>Vertical Air Sparge</u> - Injects air *below the water table* to remove VOCs and stimulate aerobic biodegradation of petroleum hydrocarbons. May be combined with SVE.

- CST011 (UST1428)
- **CST014 (UST1859)**
- SS005
- **TU001**







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CST014 – Dining Hall



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SS005 – Former Wilderness Hall

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TU001 – Power Plant





CSS001 – Former RAPCON Building/Storage Yard





- Semi-annual RAB Meetings (April/October) What schedule works best for the Galena Community?
- Fall 2016 RAB will include a Proposed Plan Meeting for CERCLA Sites
- Questions and comments can also be directed to AFCEC Public Affairs, Toll Free (866) 725-7617, or via email at AFCEC.PA@us.af.mil.
- Air Force maintains Administrative Record for Final Documents at:

http://afcec.publicadmin-record.us.af.mil/

Questions?

Attachment 3

Perfluorinated Compounds (PFCs) Preliminary Assessment and Site Inspection

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Air Force Civil Engineer Center

Perfluorinated Compounds (PFCs) Release Determination Former Galena Forward Operating Location

AL Weilbacher BRAC Environmental Coordinator 13 April 2016

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•PFCs are used in a variety of industrial and commercial products such as leather products, paper and packaging, cookware, and firefighting foams

•Aqueous Film-Forming Foam (AFFF) containing PFCs has been used since 1970 by the Air Force for fire fighting purposes



- PFCs are considered an Emerging Contaminant (EC) by the U.S. Environmental Protection Agency (USEPA) because they:
 - Have possible pathways to enter the environment
 - Are persistent in the environment and resistant to typical environmental degradation processes
 - Present a potential unacceptable risk to human health or the environment
- Air Force is responding to these ECs since USEPA has released Provisional Health Advisories for PFCs



- USEPA established Provisional Health Advisories (PHAs) for two PFCs to protect humans from potential risk of exposure to these compounds through drinking water
 - > PFOS 0.2 micrograms per liter (μ g/L)
 - ➢ PFOA − 0.4 ug/L
- The Air Force calculated soil screening levels for the residential direct contact scenario (oral and dermal)
 - PFOS 5 milligrams per kilogram (mg/kg)
 - PFOA 12 mg/kg



- Actions beginning in 2014 include:
 - Determine if releases of PFCs have occurred at former Fire Training Areas (FTAs) by sampling soil and groundwater
 - Identify other potential PFC release locations including storage locations, aircraft crash sites, fire stations, and fire suppression systems
- For confirmed releases, the Air Force will determine if a pathway exists for PFCs to reach drinking water
- If the exposure pathway and risk evaluation results indicate an issue, the Air Force will work with Alaska Department of Environmental Conservation (ADEC) to initiate mitigation measures



PFC Evaluation at Former Galena FOL

- Soil and groundwater samples were collected at the former fire training area
- Preliminary Assessment (PA) of AFFF use was conducted for other locations
 - Interviewed former installation base personnel
 - Reviewed historical records
 - Reviewed installation drawings and blueprints
- Site Inspection (SI) planning will complete the PA to identify potential AFFF locations for further investigation
- SI sampling planned for Summer 2016



PFC Release Evaluation Findings for Former Galena FOL

- Data collected from former FTA indicate presence of PFCs
 - PFOS and PFOA were detected in soil and groundwater
 - Groundwater concentrations of PFOS and PFOA exceeded the USEPA PHAs
 - Soil concentrations of PFOS exceeded the Air Force screening level
- Eight (8) potential AFFF locations identified for further evaluation:
 - Buildings with dry fire suppression systems (B1428, B1573, B1879)
 - Fire stations (B1549, B1556)
 - AFFF Storage (B1769)
 - Civilian Plane Crash Site
 - Sanitary Sewer System





PFC Summary for Former Galena FOL

- PFCs detected in soil and groundwater at former FTA above USEPA PHAs and Air Force Residential Soil Screening Levels
- SI field work for AFFF areas planned for the Summer 2016
- After the SI, Air Force will conduct an exposure pathway and risk evaluation for confirmed PFC releases

