Contaminated Materials Management Plan[i]

ADEC File No. 1507.38.017

Gustavus Airport Apron, Runway, and Taxiway
Pavement Rehabilitation Project

State Project No. Z675170000

June 29, 2021

Prepared by

DOT&PF
Southcoast Region

Purpose

This Contaminated Materials Management Plan (CMMP) provides direction for managing disturbed contaminated materials during the Alaska Department of Transportation and Public Facilities' (DOT&PF) Gustavus Airport Apron, Runway, and Taxiway Pavement Rehabilitation project (State Project No. Z675170000) at the Gustavus Airport (GST) in Gustavus, Alaska. The planned work includes:

- resurface and rehabilitate existing taxiways, aprons, and runways;
- add new taxiways F and G;
- install new lighting as needed for taxiway F;
- expand, grade, and pave the General Aviation Apron, new taxiway F, and new taxiway G, including:
  - place 0-6' of fill in expanded General Aviation Apron area,
  - remove and replace existing hardstands and tie-downs; and
- groove and stripe where necessary.

Scope

This CMMP includes procedures for the handling and storage of PFAS-contaminated material, including soil excavation, asphalt grinding, transport of soil and asphalt, stockpiling of soil and asphalt, equipment decontamination, health and safety, and reporting procedures. The procedures contained herein do not preclude additional site- or project-specific requirements required to protect the health and safety of workers. The Contractor is responsible for performing due diligence to ensure the safety of their employees.

Procedures

In total, there will be 7,150 cubic yards (c.y.) of PFAS-contaminated material that is above the Alaska Department of Environmental Conservation (DEC) soil migration to groundwater cleanup level found in 18 AAC 75.341. Material will be produced through excavation, grinding, and concrete hardstand removal. See the table below for a breakdown of contaminated material:

Original Location*	Material Type	Method	Qty (c.y.)
G.A. Apron Expansion (culvert reorientation)	soil	excavation	110
G.A. Apron Expansion (clearing/grubbing)	soil	excavation	1800
Taxiway 'F'	soil	excavation	90
Runway 2/20	ground asphalt	grinding	150
G.A. Apron (section in front of DOT&PF building)	ground asphalt	grinding	2200
G.A. Apron (section near Expansion)	ground asphalt	grinding	1800
Heavy Aircraft Apron (section near AK Air building)	ground asphalt	grinding	1000
G.A. Apron	concrete chunks	excavation	230
Taxiways 'D' and 'E'	concrete/asphalt chunks	excavation	30

*See Attachment 1 for a map of locations.

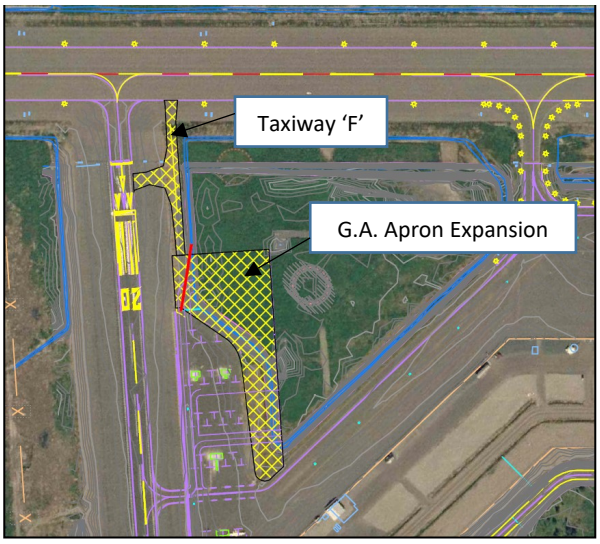
Contaminated soil produced during excavation will be returned to the area and approximate depth from which it came, i.e. removed and then replaced during electrical trenching, or may be stored in the PFAS-contaminated material storage cell (see Attachment 1 for cell location). Soil returned to area isn't expected to be more than 30 c.y. Contaminated asphalt produced during grinding that tested above the DEC soil migration to groundwater cleanup level found in 18 AAC 75.341 (quantities estimated in the table above) may only be: 1) blended into the base in area generated, 2) placed in G.A. Apron Expansion area and must be capped at completion, 3) temporarily stockpiled within the area generated, or 4) contained within the PFAS-contaminated material storage cell. Asphalt movement from these zones will also be tracked by the Contractor and final quantities and locations will be given to DOT&PF at project completion or upon request. Contaminated concrete will be placed in the G.A. Apron Expansion area and must be capped at project's completion or contained within the PFAS-contaminated material storage cell.

Asphalt that tested above non-detectable levels of PFAS but below DEC soil migration to groundwater cleanup level found in 18 AAC 75.341, will be treated separately from asphalt with non-detectable levels of PFAS. That asphalt, designated by yellow zones on the map in Attachment 1, may only be: 1) blended into the base in area generated, 2) may be used as a pad under the PFAS-contaminated material storage cell, or 3) stockpiled unlined in RAP Stockpile Location #2. RAP Stockpile Location #2 is near the former location of firefighting training and AFFF dispersal area which is known to be PFAS-contaminated. It is also a separate drainage system from any of the town's drinking water sources.

Excavation Procedures

1. Excavation activities shall be performed in a manner that minimizes worker exposure and protects the environment from site contaminants.
2. A designated work area shall be established around PFAS-contaminated excavation areas (see yellow hashed areas in diagram to the right: Contaminated Excavation Work Area Boundary). Soils will be excavated with excavators and loaded into dump trucks. For soils that will be stockpiled, dump trucks will transport soils across the project site to PFAS-contaminated material storage cell, reverse into the site through a single access point, and dump materials directly onto an approved liner. Soils will then be high-piled using a front-end loader.

Contaminated Excavation Work Area Boundary



3. All equipment leaving the PFAS-contaminated work area will be decontaminated (see Decontamination Procedures below) before driving to the stockpile area. If equipment comes into contact with contaminated soil in the stockpile area, it will also be decontaminated prior to leaving the stockpile area.
4. If contaminated soil that is to be returned to its original site needs to be temporarily stored, it will be placed on a lined containment area near where the material came from, covered and flagged

until it can be backfilled. No contaminated soil will be moved into a zone of lesser contamination, and movement of contaminated soils will be minimized where possible.

5. DOT&PF does not expect excavation dewatering to occur. If excavation dewatering is needed, the Contractor will obtain a DEC Excavation Dewatering General Permit. BMPs for dewatering in contaminated soil areas will be outlined during that process.
6. Operators will work from the safety of their respective equipment cabs. Manual labor to excavate soils is not expected. If manual/ground labor is necessary, personnel will wear proper PPE and follow decontamination procedures.

Asphalt Handling Procedures

1. Asphalt handling activities shall be performed in a manner that minimizes worker exposure and protects the environment from site contaminants.
2. Asphalt will be ground with a reclaimer, which pulverizes the asphalt in place and is then excavated into temporary stockpiles or loaded into dump trucks, or will be cold planed onto a belt and loaded into dump trucks. For asphalt that will be stockpiled, dump trucks will transport material across the project site to PFAS-contaminated material storage cell, back into the site through a single access point, and dump materials directly onto an approved liner. Materials will then be high-piled using a front-end loader.
3. Dust will be controlled via the project's Stormwater Pollution Prevention Plan, specifically Section 10.8 Dust Generation, which outlines that:

   > Dust will be controlled by spraying all disturbed areas, stockpiles and unpaved roads with water. Borrow material that is being hauled to the project site shall be kept slightly moist or covered to prevent wind transport during hauling. Use water trucks to increase the soil moisture levels. Re-apply as necessary to keep dust to a minimum. The minimum amount of water will be used to perform dust control. Avoid overwatering. Use reduced speeds on un-paved areas. Limit material loading during high winds. This is a temporary measure.

   Water used for dust control has tested negative for PFAS.
4. A 3" layer of clean fill material may be placed on top of contaminated zones to prevent contamination of equipment, reduce dust produced in contaminated zones, and reduce total contamination levels in those areas. If the clean layer of fill is used, equipment does not need to be decontaminated. All equipment used to handle, grind, compact, or transport PFAS-contaminated asphalt will be decontaminated (see Decontamination Procedures below) before working in another area of the airport. If equipment comes into contact with contaminated material in the stockpile area, it will also be decontaminated prior to leaving the stockpile area.
5. If contaminated asphalt that is to be returned to its original site needs to be temporarily stored, it will be placed on a lined containment area near where the material came from, covered and flagged until it can be backfilled. It may only be blended into the base, which will then be capped with uncontaminated asphalt.
6. Operators will work from the safety of their respective equipment cabs. Manual labor to excavate soils is not expected. If manual/ground labor is necessary, personnel will wear proper PPE and follow decontamination procedures.

Stockpile Procedures

Material from PFAS-contaminated areas will be stockpiled on a DOT&PF property (58° 25′ 15″ N 135° 41′ 30″ W) on the northeast side of the main runway, Runway 11/29 (see Attachment 1 for stockpile location). It is the former location of firefighting training and AFFF dispersal area. This site is located ~2,200' from the Airport Terminal well and ~3,400' from the NPS well. The closest surface water is ~190' from the storage site. An elevated pad will be built under the PFAS-contaminated material and liner to prevent inundation by airport-wide flooding events; the pad will be constructed of material already in the area or of excess non-PFAS-contaminated pulverized pavement and gravel from other areas of the project.

Stockpiling will meet all specifications listed in 18 AAC 75.370, in addition to the specifications listed here:

1. Excavated material must be segregated based on the intended cleanup alternatives and the specific hazardous substance present. Contaminated asphalt will be stockpiled separately from contaminated soil.
2. Soil stockpiles must be at least 100 feet from surface waters and at least 200 feet from public drinking water supply wells.
3. Stockpiles must be constructed to prevent effluent from migrating to clean areas by using bottom and top impermeable liners. The top liner will be a minimum 11 mil product or equivalent. The bottom liner will meet the general strength and thickness requirements of Table D below.

TABLE D. BOTTOM LINER SPECIFICATIONS		
Method	**Coated Fabric**	**Extruded Fabric**
Black carbon content (ASTM D 1603-06, updated March 2006)	2% or greater	2% or greater
Tensile strength (ASTM D 751-06, updated May 2006)	300 lbs (warp)	N/A
Mullen burst (ASTM D 751-06, updated May 2006)	500 psi	N/A
One inch tensile strength (ASTM D 882-02, updated June 2002)	N/A	45 lbs (warp)
One inch elongation MD (machine direction)	N/A	625%
Nominal thickness	20 mil	20 mil

4. Stockpiles will be constructed per the diagram in Attachment 2.
    a. Wattles (dry straw or similar commercial or locally constructed absorbents) will be placed at the base of each stockpile directly in contact with the soil. Wattles will be overlapped by 2' and tied together. The wattle becomes a part of the contaminant and will be treated as such during future remediation.
    b. Edges of the bottom liner will fold back up and over the wattle and stockpile base by a minimum of five feet to contain any "settlement" and subsequent leaks from within.
    c. The top liner will overlap the bottom liner's edge by at least three feet.

d. When excavation of PFAS-contaminated materials in complete, stockpiles and liners will be lashed down with ropes and anchored with 60 lb. sandbags which will be replaced as needed.

5. Stockpiles will be completely covered and weighted during hours of inactivity including during project construction (e.g.: evenings and weekends).
6. Efforts will be made to minimize water from rain or weather events from entering the stockpile during active work.
7. Stockpiles will be adequately marked.
    a. Traffic safety cones or candlestick bollards are required around the perimeter of the stockpile.
    b. Eight Public Health and Safety Signs (2 per side) will be placed around the perimeter of the stockpile at equidistant spacing. The signs will have a durable backboard and be weatherproof with letters readable from 20' away showing: contaminant of concern, point of contact for the Contractor (name and phone number), point of contact for the DOT&PF (name and phone number), state project number, and generation date. Signs will be maintained in readable condition and in place for the entirety of the soil's storage. See Attachment 3 for a template.
8. Stockpiles will be regularly inspected and maintained to ensure the cover remains intact, excessive water does not accumulate, wattles remain in place, signs are legible and in place, and safety warning devices (traffic cones or bollards) are present and upright. Stockpiles will be inspected daily during work days by the Contractor during project construction until the storage cell is filled and/or inactive for longer than a week and receives approval from a DOT&PF designated inspector that the cell is constructed to specifications and the site is secure; once approval is given by the inspector, stockpile inspections will occur once a week and after storm/wind events. After project's completion, the stockpile will be inspected by Gustavus DOT&PF staff a minimum of monthly and after storm/wind events. Inspections will be documented and records sent biannually to DOT&PF Statewide Aviation PFAS Program Manager (see Reporting Procedures below). Any access openings made to the liner (accidental tears, etc.) shall be immediately sealed off to prevent wind and rain intrusion.
    a. DOT&PF does not anticipate leachate will be generated at the stockpile during rain events because contaminated material will be securely covered. In the unlikely event that leachate does occur, it will be pumped out of the stockpile area and containerized and DEC will be notified.
9. If the stockpiles cannot be remediated in two years, DOT&PF will consult with DEC and request an extension if necessary.

Decontamination Procedures

All heavy equipment used in PFAS-contaminated excavation areas (see diagram Contaminated Excavation Work Area Boundary on page 3 of this document) that comes into contact with contaminated material will be brushed to remove visible soil before leaving the work area boundary. If equipment comes into contact with contaminated material in the stockpile area, it will also be brushed to remove

visible soil prior to leaving the stockpile area. Equipment used to grind asphalt will also be decontaminated by brushing to remove all material before beginning work in a different zone (red, yellow, or green zones on Attachment 1). Dump truck beds, unless contaminated material may fall from the bed while driving in/through uncontaminated zones, will not be decontaminated in between contaminated loads; they will be decontaminated before hauling uncontaminated loads or asphalt from a different zone (red, yellow, or green zones on Attachment 1) and at the end of each day. Hand tools are not anticipated to be used in the designated work area. If they are, they will be brushed to remove visible soil as well. Decontaminated equipment will be visually inspected for residual contamination periodically to ensure decontamination procedures are effective.

A decontamination station will be set up near the PFAS-contaminated excavation areas (see diagram Contaminated Excavation Work Area Boundary on page 3 of this document) for personnel entering and exiting the area. When exiting the work area, personnel will brush any contaminated soil from their work clothes, boots, and PPE (if applicable). Any contaminated PPE will be placed into a covered trash receptacle within the decontamination station, and full trash bags will be disposed of as solid waste.

A vehicle/equipment wash is established at the end of runway 2/20 and/or in front of the DOT&PF building. Both areas are known AFFF deployment areas and have tested above DEC regulatory levels. Because equipment is already being decontaminated, regular washes are not required but good practice.

Health and Safety Procedures

Before project work begins and any personnel new to site will have PFAS training. Training will be produced by DOT&PF Environmental staff and approved by the DOT&PF Regional Environmental Manager. Initial training for construction personnel and on-site engineering staff occurred on April 7, 2021 and was led by a DOT&PF Environmental Impact Analyst. Any new personnel to site will be required to review the training handout produced by DOT&PF. The Contractor will keep a log of all personnel who have received training. The training will cover: introduction to PFAS compounds, potential pathways of exposure, human health effects, ecological concerns, equipment decontamination, required PPE, and proper PPE removal. Training refreshers will occur quarterly during weekly safety meetings during project construction.

PPE will be required for all personnel working on the ground in PFAS-contaminated excavation areas (see diagram Contaminated Excavation Work Area Boundary on page 3 of this document). PPE selection will be based on work-task requirements and potential exposure; PPE that may be required are: standard work clothes or cotton overalls; reflective, high visibility safety vest, shirt, or jacket; safety-toe boots; safety glasses; hard hat; gloves; and disposable nitrile gloves (required for any personnel that may have dermal contact with contaminated material).

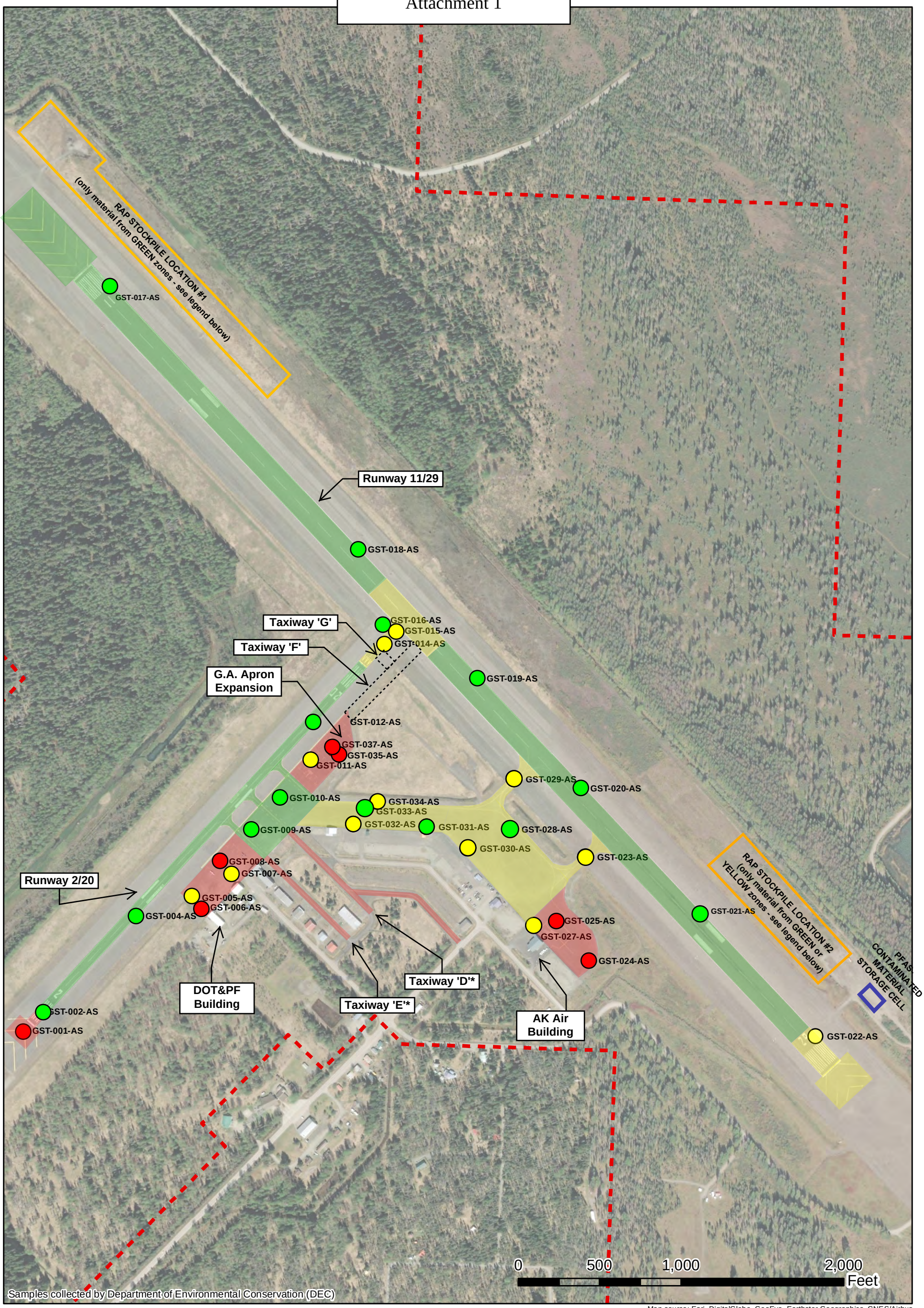
Reporting Procedures

When project work is complete, the Contractor will submit a report to DEC and DOT&PF that includes a summary of soil movement including how much material was placed in the stockpiles, how much PFAS-contaminated material was placed back in the ground, date and time of daily inspections during active

construction and any notes (accidental tears, runoff, etc.), and photographs. As outlined in the Stockpile Procedures above, Gustavus DOT&PF staff will conduct inspections during storage. DOT&PF will submit documentation of those inspections (a log of date, time, and any necessary notes such as accidental tears, flooding in the area, leachate, etc.) with photos biannually in May and October each year via email.

[i] This document replaces the April 28, 2021 version and the March 9, 2021 Soil Management Plan. The Soil Management Plan was retitled Contaminated Materials Management Plan to encompass all contaminated materials after testing determined that some sections of asphalt were also PFAS-contaminated. See the project website (http://dot.alaska.gov/sereg/projects/gustavus_airport/) for more information on testing and results.

Attachment 1



LEGEND

- PFAS Not Detected
- PFAS Detected Below Regulatory Limit
- PFAS Detected Above Regulatory Limit
- Airport Property Boundary

Asphalt may be: 1) recycled into new asphalt, 2) may be blended into the base, 3) may be used in yellow or red zones as fill, 4) may be used as a pad under the PFAS-contaminated liner cell, or 5) stockpiled unlined in RAP Stockpile Location #1 or RAP Stockpile Location #2.

Asphalt may be: 1) blended into the base in area generated, 2) may be used as a pad under the PFAS-contaminated liner cell, or 3) stockpiled unlined in RAP Stockpile Location #2

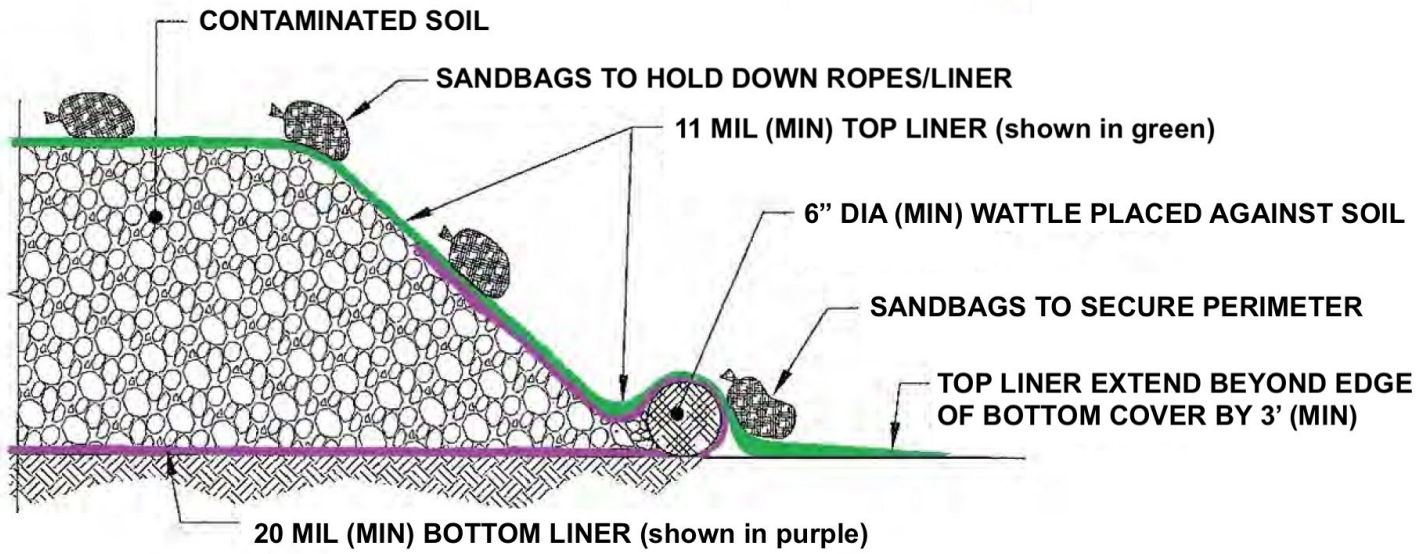
Asphalt may only be: 1) blended into the base in area generated, 2) placed in G.A. expansion area and must be capped at completion, 3) temporarily stockpiled within the area generated, or 4) contained within the PFAS-contaminated liner cell.

N

June 29, 2021

*Taxiways 'D' and 'E' were not tested, but are being classified red and treated as such due to adjacent test results and out of an abundance of caution.

Example of a Cross-Section Diagram of Proper Stockpile Storage:



Example of a Stockpile from Eielson AFB Restoration Program's Stockpiling Contaminated Soils Standard Operating Procedure:

PFAS-CONTAMINATED MATERIAL
DO NOT DISTURB

[CONTRACTOR COMPANY NAME]

[POC NAME] [POC PHONE #]

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

[POC NAME] [POC PHONE #]

STATE PROJECT NO. Z675170000

GENERATION DATE: MONTH/DATE/YEAR