Minor

OPERATION AND MAINTENANCE

Activity Plan

Isolation of Water Utilities to 235-11F, 607-3F, 701-4F, and 720-F –

Site Index 563

Prepared by: _____ 8/16/22

Kimberly A. Price
ECA, F-Area Complex

Date

Approved by: _____ 8/16/22

Donnie Parkman
Operations Manager, F-Area Complex

Date

Approved by: Yolanda Brown 8/16/22

Yolanda Brown
Radiological Protection, F-Area Complex

Date

Approved by: _____ 8/17/22

George McKinney
Construction Manager

Date

1. INTRODUCTION

This Operations and Maintenance (O&M) Plan is being written to support work activities planned for the isolation of utilities from Buildings 235-11F, 607-3F, 701-4F, and 720-F. The work will involve digging to locate the domestic water lines and performing isolations on the lines to support deactivation of Building 235-F. The work will be performed while protecting human health and the environment and minimizing the impact to long term characterization and remediation efforts. This activity is within Site Index (SI) 563 (F-Area Process Sewer Lines as Abandoned, No Building Number (NBN) of the Federal Facility Agreement (FFA, Reference 1). SI's are also called RCRA/CERCLA Units.

This plan is characterized as "minor intrusive activity" based on the soil excavation meeting the definition of both "minor" and "intrusive" as defined in Reference 2.

2. AREA DESCRIPTION AND CONDITIONS

The proposed work scope includes five domestic water isolation locations. All locations have been evaluated and it has been determined that only one location requires this O&M plan. The area in which the activity will be conducted is east of the paved road directly in front of the east entrance to Building 701-4F in F Area. The area is near the border of Industrial Wastewater Outfalls F-02 and F-05. The location of the domestic water line and isolations to be conducted is shown on Attachments 1 and 2. Attachment 2 shows approximate locations for SI 563 as a dark red area. The following large structures are located in this portion of the drainage basin:

- 235-F
- 292-2F Sand Filter Fan House
- 294-2F Sand Filter for 235-F
- 294-1F F Canyon Sand Filter
- 701-4F Gatehouse Entrance to 235-F
- 720-F Central Alarm Station

For a discussion of the SI, see "Revision 0 for Appendix C for Fiscal Year 2019" of Reference 1. SI 563 is located in the drainage basin of Upper Three Runs. The location of the work is shown as a yellow dot with black "X" on the portion of the Outfall Map provided in Attachment 1 and on the aerial image in Attachment 3. These SIs are in the FFA because of possible radiological or chemical contamination from past processes at 235-F. To date, there has been no remediation of the unit; the current status of the unit is inactive. A photo of the actual location is provided in Attachment 4.

3. O & M ACTIVITY

A. O&M Activity Description

The scope of the activity is to locate and isolate domestic water lines and valves associated with the utilities to Buildings 235-11F, 607-3F, 701-4F, and 720-F. Excavation is expected to be 6 to 8 feet and will be done by hand. SRNS Site Infrastructure and Construction will perform the work in accordance with the provisions of Asset Suite Work Order #1931043-02 (Reference 3) and AHA-SUD-20967 Rev. 0 (Reference 4). The activity occurs within an identified SI. EXCAVATED SOILS WILL EITHER BE RETURNED TO THE ORIGINAL LOCATION OF SOIL DISTURBANCE, RELOCATED BY SITE UTILITIES/CONSTRUCTION, OR DISPOSED PER RPD GUIDANCE (DETERMINED BY SOIL SAMPLING RESULTS), GENERATOR CERTIFICATION OFFICIAL (GCO), AND THE ENVIRONMENTAL COMPLIANCE AUTHORITY (ECA).

B. O&M Activity Sampling and Monitoring for Health and Safety

This identified unit is in the FFA because of possible radiological contamination from abandoned process sewer lines from F-Area operations.

Radiological surveys will be required at the excavation site. If radiological contamination is encountered, RP will determine if protective equipment and personnel access restrictions are required.

Worker health and safety will be directed and controlled as required in the Assisted Hazard Analysis (AHA).

C. Health and Safety Plan

The health and safety concerns involve worker exposure to potential radiological contamination. RP shall provide for radiological monitoring during the excavation activities.

The work will be completed in accordance with the requirements stated in the AHA. The safety requirements and personal protective equipment described in the AHA are appropriate for the potential hazards related to the RCRA/CERCLA unit.

D. Characterization and Sampling Plan for the Affected Area within the Unit

A soil sampling plan has been prepared for this work evolution. The soil sampling plan (Attachment 6) should be included in the work package. If unexpected contamination is found, the SRNS On-Scene Coordinator (OSC) may request additional work scope and sampling from soil disturbed by the activity. Material removed as part of the excavation will be handled or returned as backfill as determined by radiological soil sampling results.

E. Contaminated Materials Management and/or Disposal

All waste will be disposed in accordance with guidance from RP, GCO, and the ECA. Clean soil will be returned to the excavation or relocated by Site Utilities/Construction once the water line isolations are complete.

F. Environmental Plans and Permit Modification Requests

This activity is not expected to involve other environmental plans/permits, required maintenance and inspections, or erosion control practices.

4. CONTINGENCY PLAN

During implementation of the activity, if the conditions change at any time such that the activity is no longer considered "minor" (as defined in Reference 2) or any other unanticipated event occurs, the Project Manager, the Project Construction Manager, or the ECA shall:

- Immediately notify the SRNS-OSC. If necessary, the SRSN-OSC will notify the DOE-OSC.
- Stop work, secure the area, contain and stabilize the area, and determine any necessary change to the activity plan.
- Notify the SRNS-OSC of the findings and proposed path forward. The SRNS-OSC will communicate the information to the DOE-OSC and obtain concurrence on the path forward.

5. DOCUMENTATION & REPORTING

F Area Complex will transmit the following documentation to the SRNS-OSC within twenty days of the completion of the activity:

- The signed O&M plan
- Any sampling and characterization data collected

The following information is not expected to be generated by this activity, but, if generated, will be forwarded to the SRNS-OSC:

- The quantity (if any) of any contaminated materials generated, and
- The disposal location of any contaminated material, if generated.

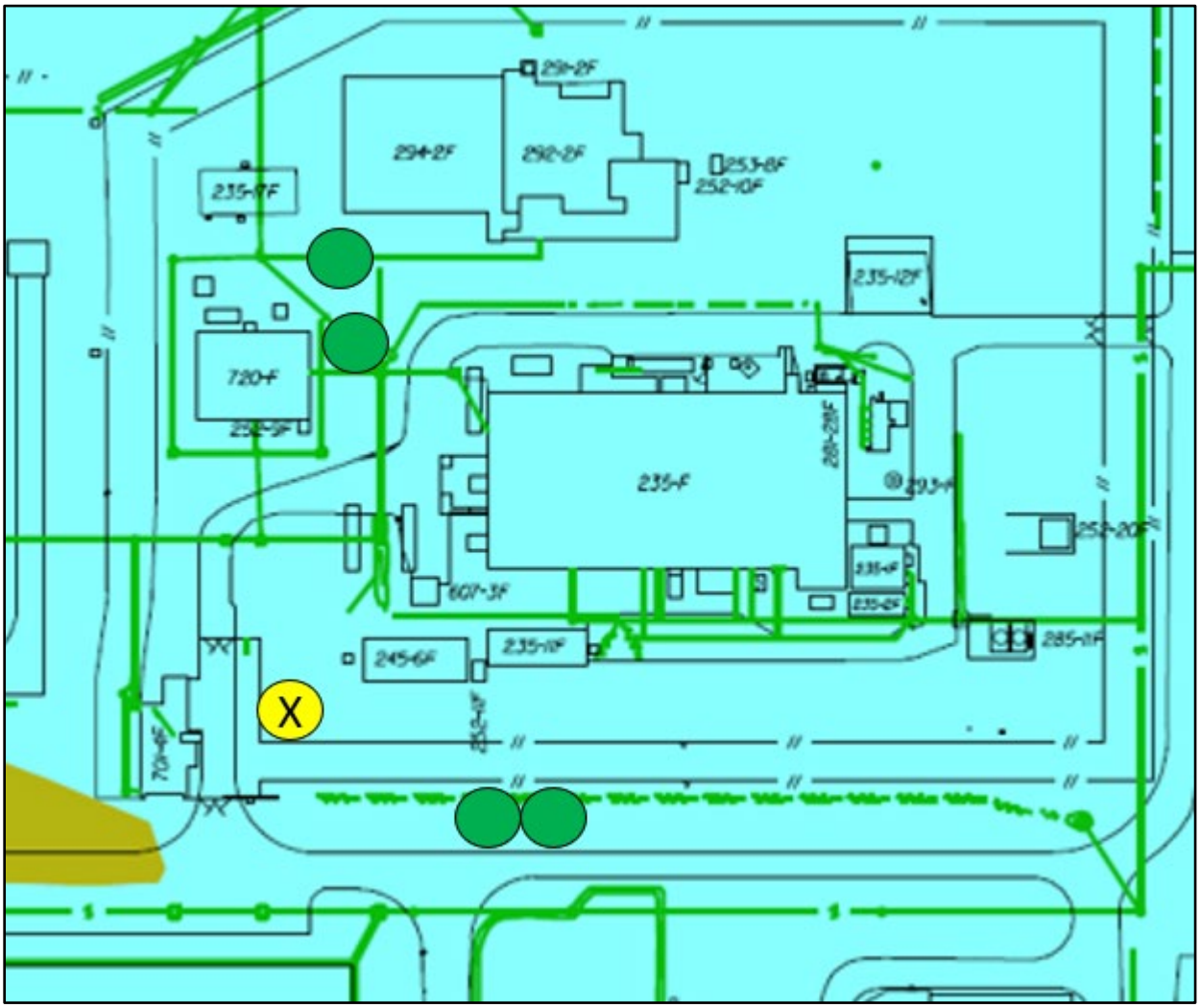
Attachments

Attachment 1.	Outfall Drainage Map with Approximate Location of Water Lines to be Isolated
Attachment 2.	Approximate Location of Domestic Water Line Isolations and Specific Site Indices
Attachment 3.	Aerial Image Showing Location of Water Lines to be Isolated
Attachment 4.	Photo Showing Physical Location
Attachment 5.	Excerpt Showing Proposed Domestic Water Isolation Locations
Attachment 6.	Soil Sampling Plan

References

1. WSRC-OS-94-42, Federal Facility Agreement for the Savannah River Site, Administrative Document Number 89-05-FF, effective August 16, 1993, Revision 0 of Appendix C and Revision 0 of Appendix E for Fiscal Year 2019.
2. WRSC-RP-96-45, *Savannah River Site Plan for Performing Maintenance in Federal Facility Agreement Area (O&M) Plan (U)*, December 15, 1996.
3. Asset Suite Work Order #1931043-02, entitled “Isolate DW to 235-F per DCP,” created by T. Timmerman. Approved on 8/16/2022.
4. Assisted Hazard Analysis (AHA) # SUD-20967, Rev. 0, entitled “Isolate Domestic Water Feeding 235-F and Some of the Surrounding Buildings,” created by T. Timmerman. Approved on 8/16/2022.
5. M-FCR-F-00064, Revision 0, *Update Mechanical Isolation Locations of the Domestic Water Supplying Buildings: 235-F, 235-1F, 235-2F, 607-3F, and Cooling Tower 285-11F.*

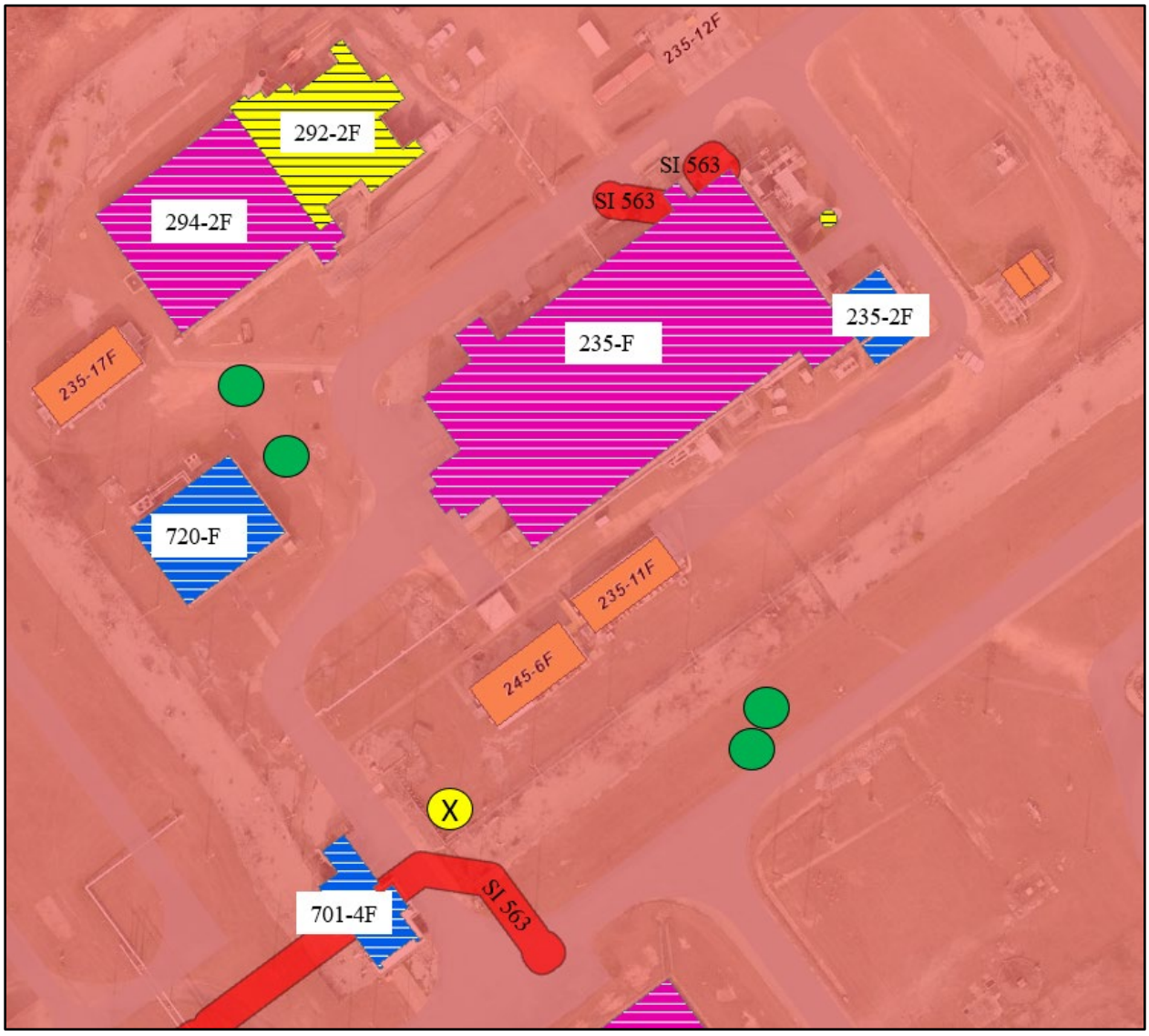
ATTACHMENT 1
Outfall Drainage Map
Page 1 of 1



Legend:

Gold	F-02 Industrial Wastewater Outfall Drainage Area
Blue	F-05 Industrial Wastewater Outfall Drainage Area
X	Approximate Location of Domestic Water Line Isolation Requiring This Plan
	Approximate Location of Domestic Water Line Isolations Not Requiring an O&M Plan

ATTACHMENT 2
Approximate Location of Domestic Water Line Isolations and Specific Site Indices
Page 1 of 1



Note: The entire drawing is within SI 575.

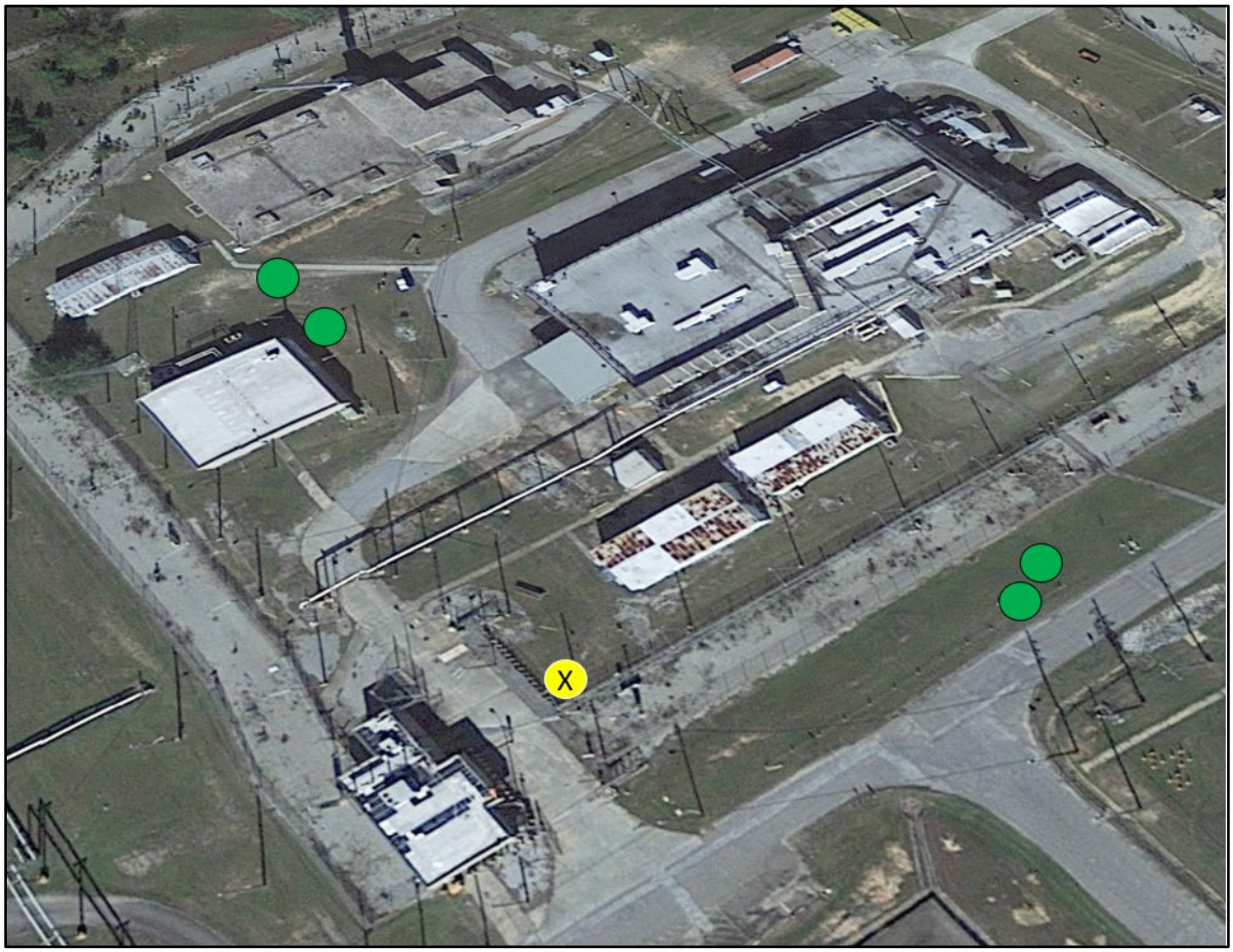
Legend:

Red Areas Specific Site Indices

X Approximate Location of Domestic Water Line Isolation Addressed in This Plan

Approximate Location of Domestic Water Line Isolations Not Requiring an O&M Plan

ATTACHMENT 3
Aerial Image Showing Location of Water Lines to be Isolated
Page 1 of 1



Legend:

X Approximate Location of Domestic Water Line Isolation Addressed in This Plan

Approximate Location of Domestic Water Line Isolations Not Requiring an O&M Plan

ATTACHMENT 4
Photo Showing Physical Location
Page 1 of 2



Legend:

X Approximate Location of Domestic Water Line Isolation Addressed in This Plan

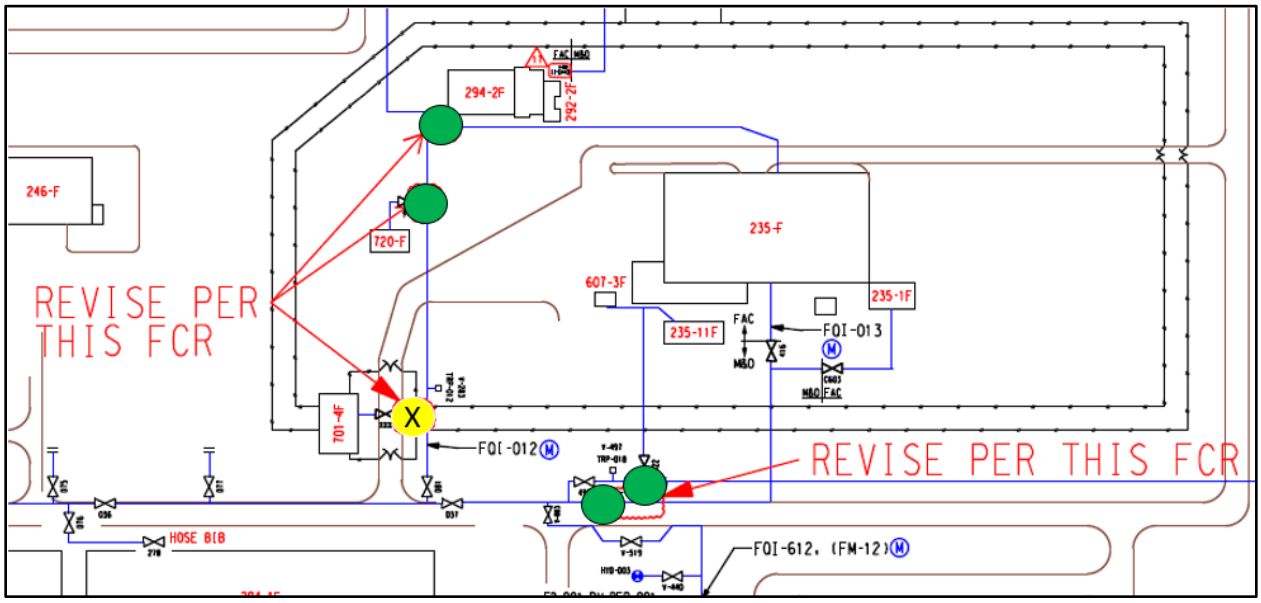
ATTACHMENT 4
Photo Showing Physical Location
Page 2 of 2



Legend:

X Approximate Location of Domestic Water Line Isolation Addressed in This Plan

ATTACHMENT 5
Excerpt Showing Proposed Domestic Water Isolation Locations
Page 1 of 1



Note: Excerpt from Reference 5.

Legend:

X Approximate Location of Domestic Water Line Isolation Addressed in This Plan

Approximate Location of Domestic Water Line Isolations Not Requiring an O&M Plan

ATTACHMENT 6
Soil Sampling Plan
Page 1 of 6

Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

WO#: 1931043-02

8-9-2022

SRNS
Aiken, SC 29808

Prepared/Approved by: Signature Stanley H Trout **Date** 8-10-22
RPD FLM

Approved By: Signature Thomas Timmerman **Date** 8-10-22
Lead Work Planner

Approved By: Signature [signature] **Date** 8/10/22
OPS Support Manager

Approved By: Signature Yolanda H. Brown **Date** 8/10/2022
RPD Facility Manager

ATTACHMENT 6
Soil Sampling Plan
Page 2 of 6

Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

PURPOSE

The purpose of this sampling plan is to determine the radiological controls based on expected and unexpected radiological hazards. The area is posted as a Controlled Area/URMA. The proposed location for the excavation area as follows:

- This involves excavating four different locations. Three within the fenced area of 235-F and one just on the outside of the fenced area along the roadway. See attachments for size and locations.

- Excavated areas to include removing asphalt, concrete, grass, and dirt/soil to access underground domestic water lines.

SCOPE

- Perform the required surveys as specified in this soil sampling plan in accordance with procedure 5Q1.2-485 (2). If additional posting becomes necessary, the area is to be posted as required per procedure 5Q1.1-518 (3).

- A minimum of 1 composite soil sample every 85 sq feet will be taken from the excavations. Composite soil samples may be taken randomly from the excavations as needed based on possible physical obstructions. Obtain soil samples by augering or scooping from post hole digger/shovel of the soil of the soil removed by hand digging. These composite samples will be obtained at each of the following depths: (1) within the first 6inches and additional samples are required at 12 inches increments to the expected depth of the excavation, or until 12 inches below all expected interferences (i.e., process piping) indicate no detectable activity when analyzed per Manual 5Q1.2, Procedure 303.

- If radioactivity in the soil meets or exceeds Soil Contamination Area Limits [equal or exceed 150 pCi/gm (gross beta activity) or 1000 pCi/gm (gross alpha activity), as applicable], contact RPD Management for further instructions, radiological posting, additional sampling requirements, and follow-up surveys.

SAFETY

- Comply with all safety precautions per applicable procedures.
- Personnel shall exercise caution when traversing the area due to uneven terrain, and trip hazards.
- Use safe techniques during use of sampling equipment.
- Ensure all safety requirements of the Assisted Hazard Analysis (AHA) are performed.

ATTACHMENT 6
Soil Sampling Plan
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Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

PREREQUISITES

- A pre-job review of the sampling plan is required with all sampling personnel prior to the start of sampling activities.
- GPR (Ground Penetrating Radar) of each sampling and excavation location is required.
- **NOTE:** Prior to any excavation, at each excavation location an exposure rate reading will be performed with a Bicron µrem and direct probe of the asphalt (surface and substance) If no elevated readings are detected, excavation work can commence. If elevated readings are detected, additional radiological controls (i.e.: postings, PPE) may be required. Contact RPD FLM for path forward.

SAMPLING PLAN

1. Perform exposure rate readings using a Bicron µrem survey instrument of each sample grid. If no elevated readings are detected, go to step 2. If elevated readings are detected, stop work, put area in a safe condition, and contact RPD FLM for path forward.
2. Asphalt or concrete shall be probed and smeared to clean area limits by RPD prior to removal. Perform direct probe survey for alpha and beta / gamma emitters of each sample grid. If no elevated readings are detected go to step 3. If elevated readings are detected, stop work, put area in a safe condition, and contact RPD FLM for path forward.
3. Obtain composite samples at each of the four locations shown on Attachments A and B. The composite soil samples will be performed as described in the SCOPE section of this document. Soil samples will be analyzed per appropriate sections of procedure 5Q1.2-485.
   A. Excavation #1 – 1600 sq. ft. requires 19 composite soil samples.
   B. Excavation #2 – 400 sq. ft. requires 5 composite soil samples.
   C. Excavation #3 – 200 sq. ft. requires 3 composite soil samples.
   D. Excavation #4 – 312 sq. ft. requires 4 composite soil samples.
4. As soil is being excavated by hand, place soil on plastic staged at the job site and randomly probe soil and tools being used to dig.
5. Package and survey soil samples for transport to the RPD count room.
6. Soil samples will be analyzed for alpha and beta-gamma.
7. At the completion of all excavation activities, survey all tools used to clean area limits.
8. If any item/material does not meet clean area limits, <20 dpm α/100 cm^2, <200dpm $\beta\gamma$/100cm^2, ND dpm α, $\beta\gamma$/100 cm^2, direct

ATTACHMENT 6
Soil Sampling Plan
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Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

probe, then stop work, survey personnel, post area per radiological survey results, and contact RPD FLM for path forward.

9. All soil samples shall be saved and stored until RPD Management directs the release or disposal of the soil sample.

REFERENCES/ATTACHMENTS

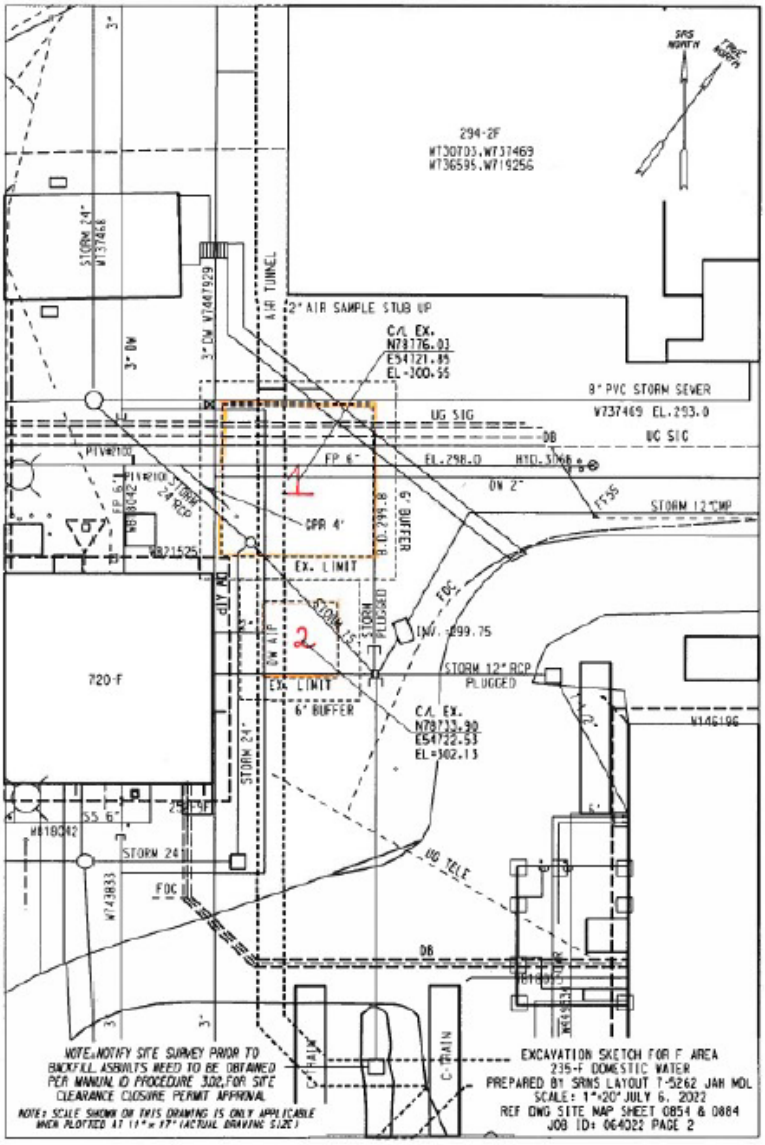
1. Attachment A: Locations 1 & 2
2. Attachment B: Locations 3 & 4
3. Manual 5Q1.2 Procedure 485, *Soil Survey and Sampling Techniques*
4. Manual 5Q1.1 Procedure 518, *Radiological Posting*
5. Manual 5Q1.2 Procedure 303, *Analysis of Soil Samples*
6. Manual 8Q Procedure 34, *Excavations and Trenches*

ATTACHMENT 6
Soil Sampling Plan
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Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

ATTACHMENT "A"



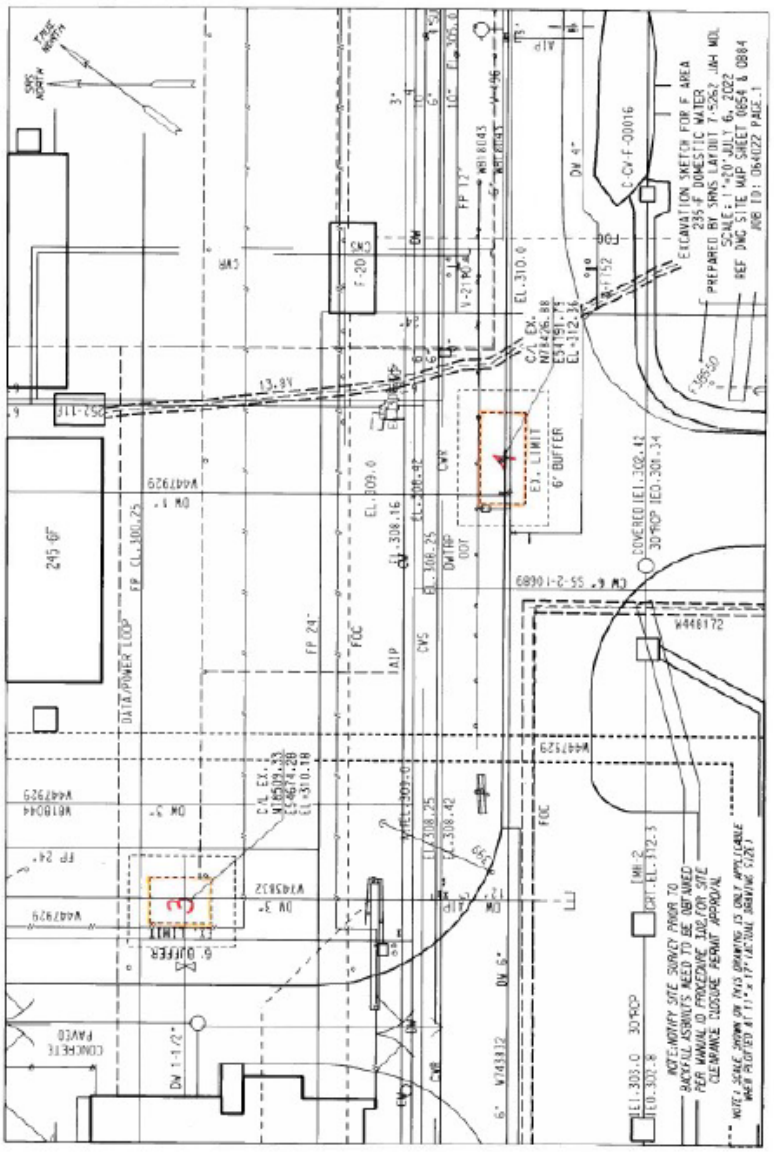
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ATTACHMENT 6
Soil Sampling Plan
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Isolating Domestic Water Lines around the 235-F Complex

Controlled Area/Underground Radioactive Material Area (Controlled/URMA)

ATTACHMENT "B"



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