H-AREA TANK FARM

GENERAL INFORMATION

HTF-IP-01

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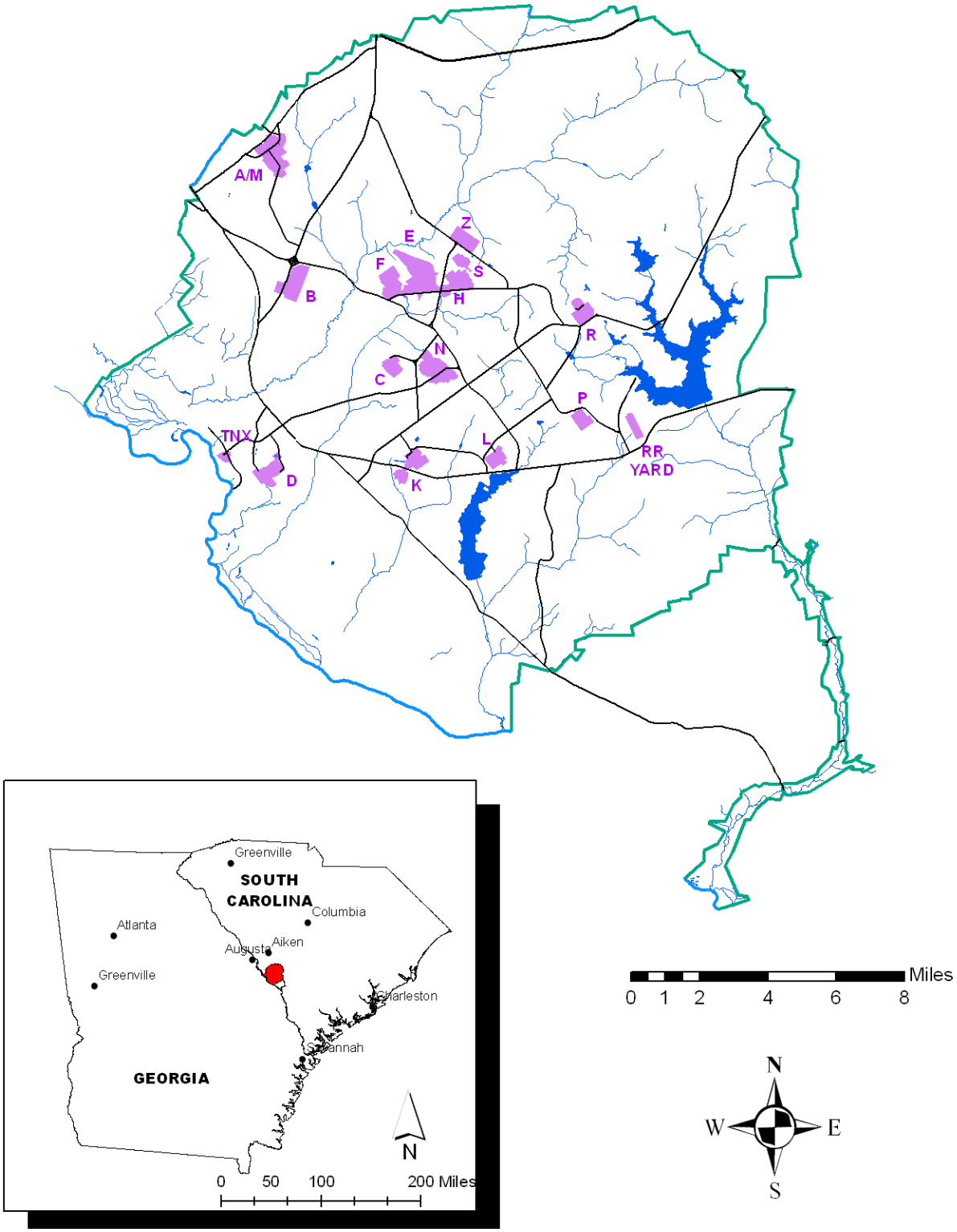
1.0 GENERAL INFORMATION PACKAGE

An H-Area Tank Farm (HTF) Performance Assessment (PA) will be completed to support an HTF-specific Waste Determination, Closure Plan and tank-specific Closure Modules. These documents support the closure of liquid waste tanks to meet Federal Facility Agreement (FFA) commitments. The purpose of the scoping meeting during the development of PA inputs is to identify issues early, assess the reasonableness of key modeling assumptions and reduce the risk of significant rework and remodeling after the PA is finalized.

2.0 SITE CHARACTERISTICS

Savannah River Site (SRS) is located in south-central South Carolina, approximately 100 miles from the Atlantic Coast. The major physical feature at SRS is the Savannah River, approximately 20 miles of which serves as the southwestern boundary of the site and the South Carolina-Georgia border. SRS encompasses portions of Aiken, Barnwell, and Allendale Counties in South Carolina. SRS occupies an almost circular area of approximately 310 square miles, or 198,344 acres, and contains production, service, and research and development areas. The developed areas occupy less than 10% of SRS area while the remainder of the site is undeveloped forest or wetlands.

Figure 2.0-1: SRS Operational Area Location Map



2.1 H-Area Tank Farm

The H-Area is in the north-central portion of the SRS and occupies 395 acres. Figure 2.1-1 presents the location of H-Area and the HTF in the SRS General Separations Area (GSA). The HTF is an active waste storage facility consisting of 29 carbon steel tanks and ancillary equipment such as transfer lines, evaporators and pump tanks. The HTF waste tanks store, or once stored liquid radioactive waste generated primarily from the H-Canyon modified Plutonium Recovery and Extraction (PUREX) process. Figure 2.1-2 presents the layout of HTF. Tank 16 underwent chemical cleaning of its primary tank in 1979 - 1980.

The proposed sequence of events for closure of HTF is as follows:

- Closure of the Types I, II, and IV tanks and finally the Type III/IIIA tanks. The ancillary equipment, such as transfer lines, pump tanks and pits, diversion boxes (DBs) and valve boxes, will be closed as appropriate with a goal of closing geographic sections of HTF in stages.
- Following closure of a geographic section, such as the Type I tanks, the area will be left in an interim closure state in preparation for final closure. For example, the area may be filled in with backfill after closure of the individual waste tanks and ancillary equipment to establish an even grade elevation with other sections of HTF.
- Following closure of all HTF waste tanks and ancillary equipment, HTF will undergo closure in accordance with the FFA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). [WSRC-OS-94-42, www.epa.gov/superfund/policy/cercla.htm]

Figure 2.1-1: H-Area Location

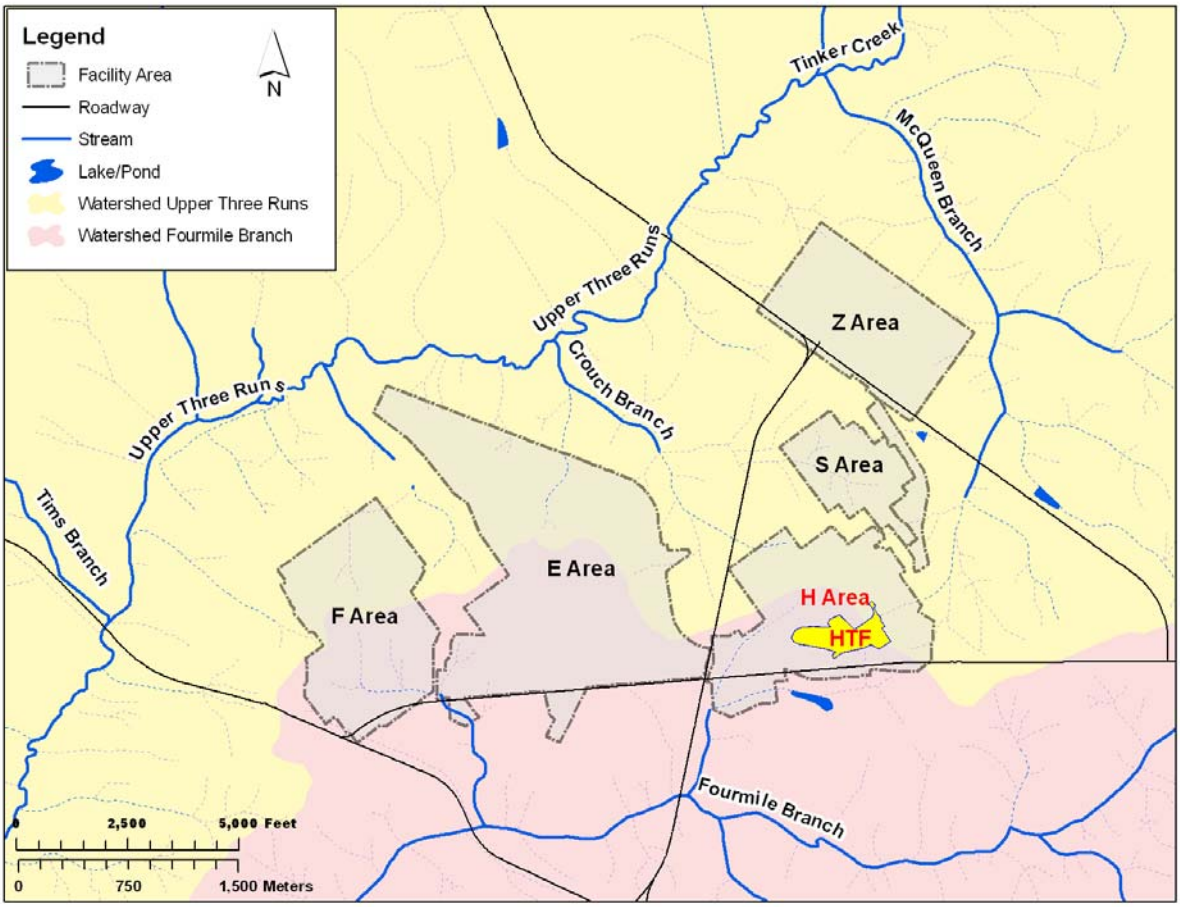


Figure 2.1-2: HTF Configuration

3.0 PERFORMANCE ASSESSMENT SCOPING MEETING

In order to complete closure activities in a timely manner for meeting FFA commitments, it was desired to reduce the comment resolution schedule durations and potential remodeling resulting from reviews of the PA after completion. It was therefore prudent to have a scoping meeting during PA input data development to obtain up-front input understanding, and assess the reasonableness of assumptions to minimize downstream rework and remodeling. While it is recognized that concerns may surface on input parameters utilized after modeling and additional reviews are completed, up-front reviews and comments certainly minimize the risk and severity of concerns after completion of modeling.

The purpose of the scoping meeting is to facilitate candid technical discussion on input parameters related to the tank farm-specific PA modeling. To accomplish this goal, a meeting will be held to discuss and review individual input packages with representatives from South Carolina Department of Health and Environmental Control (SCDHEC), Environmental Protection Agency (EPA), and the Nuclear Regulatory Commission (NRC).

3.1 Proposed List of HTF PA Input Packages

HTF input packages will be submitted for review with a goal being for each of the reviewing parties to receive them approximately two weeks prior to the face-to-face meetings. An overall HTF Conceptual Model package will also be prepared as an additional input package incorporating the underlying bulleted item packages in this area. This data is provided for information purposes only and some re-arrangement of package presentations may be necessary as work continues.

- **Tank Farm General Information Package**

  This package identifies the background information for SRS and HTF that would be useful and common to many of the specific PA input packages and PA updated sections.

- **Residual Inventory Package**

  This package will provide the estimates for the potential radionuclide and chemical inventory remaining in each HTF tank and in the ancillary equipment such as transfer lines. It will include:

  - Tank Inventory – Residual inventory estimates for the 29 HTF waste storage tanks.
  - Ancillary Inventory – Residual inventory estimates for the HTF Ancillary equipment (e.g., Evaporators, Pump Tanks, and Transfer Lines).

- **H-Tank Farm Conceptual Model Packages**

  Describe the HTF specific conceptual model elements used for the groundwater fate and transport modeling. They will include:

  - Type I Waste Tank Design – Describes the as-built conditions of the Type I waste tanks.
  - Type II Waste Tank Design – Describes the as-built conditions of the Type II waste tanks, which is the only tank type unique to HTF.

- Type III/IIIA Waste Tank Design – Describes the as-built conditions of the Type III and IIIA waste tanks.
- Type IV Waste Tank Design – Describes the as-built conditions of the Type IV waste tanks.
- Vadose Zone Inputs – Describe the proposed parameters to be used in the groundwater fate and transport model for the vadose zone, such as K_d values, porosity, etc.
- Ancillary Equipment – Describe the as-built conditions of ancillary equipment.
- HTF Conceptual Model – Describes the HTF specific configurations and modeling issues, including modeling tanks in the water table.

3.2 HTF PA Subjects addressed in the F-Area Tank Farm PA

The following subject areas were covered in previous FTF input packages and in the FTF PA. [SRS-REG-2007-00002] These areas will be addressed in the HTF PA using the same general approaches, without new input packages being created:

- Exposure pathways for the public and intruder
- Consumption rates for drinking water, meat, milk, etc.
- Dose Conversion Factors
- Software codes used in the groundwater fate and transport modeling
- Risk assessment methodology

The following subject areas are similar to FTF input packages with slight modifications to certain information. While an input package will not be created, the modifications will be reviewed in the scoping meeting.

- Closure cap design
- Bioaccumulation factors
- Hydrogeology

4.0 REFERENCES

SRS-REG-2007-00002, *Performance Assessment for F-Tank Farm at the Savannah River Site*, Savannah River Site, Aiken, SC, Rev. 0, June 2008.

WSRC-OS-94-42, *Federal Facility Agreement for the Savannah River Site*, http://www.srs.gov/general/programs/soil/ffa/ffa.pdf, Savannah River Site, Aiken, SC.

www.epa.gov/superfund/policy/cercla.htm, *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980*, Title 42, United States Code (U.S.C.) §§ *9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499*, U.S. Environmental Protection Agency.