1.0 PURPOSE AND SCOPE

A waste processing strategy is required for each waste treatment campaign processed at the Effluent Treatment Facility (ETF). A waste processing strategy defines specific key unit operation configuration, primary operating parameters, and expected maximum influent total dissolved solids and total organic carbon. The waste processing strategy requires monitoring and recording of treated effluent conductivity and primary operating parameters as necessary to demonstrate that ETF operations are in accordance with the associated waste processing strategy.

This procedure establishes requirements and responsibilities for the preparation of the Waste Processing Strategy. This processing strategy meets the requirements of the Effluent Treatment Facility (ETF) Final Delisting (40 CFR 261, Appendix IX, Table 2). (7.1.1)

This procedure applies to ETF project personnel.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES

3.1 ETF Engineering Manager

- Determines the need for a Waste Processing Strategy per Condition (1)(a) of the ETF Final Delisting.
- Assigns an engineer to prepare the Waste Processing Strategy.
- Ensures that a beryllium sampling strategy is included in the Waste Processing Strategy if required.

3.2 Engineer

- Prepares the Waste Processing Strategy.
- Determines reviewers and approvers for the Waste Processing Strategy (minimum required approvers are the ETF Environmental Field Representative, ETF Engineering Manager, and ETF Operations Manager).
- Coordinates review and approval of the Waste Processing Strategy.
- Issues the Waste Processing Strategy in accordance with TFC-ENG-DESIGN-C-25.
3.3 ETF Operations Manager and Environmental Field Representative

- Provides input to the Waste Processing Strategy.

4.0 PROCEDURE

4.1 Content Guidelines

1. Documents to be used during the processing activity may include:
   - Process flowsheets
   - Operating specifications applicable to the process activity
   - Operating procedures that implement the process flowsheets and operating specifications. Only those major procedures that are unique, new, or revised for the specific activity in question need to be listed
   - Facility process sampling schedule
   - Relevant safety documents, job specific radiation work permits (RWPs), and radionuclide inventory
   - Applicable environmental monitoring plans and other regulatory documentation (7.1.2, 7.1.3)
   - Any process test plans/procedures to be implemented
   - Detailed activity description.

2. The Waste Processing Strategy content and format may vary considerably, but must include the information required in the Final Delisting. It is typically written as a part of a campaign Process Control Plan but may also be written as a separate document. The following information is required:
   - Processing activity description – a summary description of operations to be conducted, including the sequence of key unit operations and values for the primary operating parameters
   - Feed activities – specific details on material to be processed, including feed order and/or blending requirements for process/product control and the expected maximum influent total dissolved solids and total organic carbon levels
   - Monitoring and recording requirements for treated effluent conductivity and primary operating parameters.

The following information may be included as appropriate:
- Product/waste disposition – details the handling and disposition of product and waste material streams.

- Special process control requirements – any special process control requirements unique to the specific processing activity.

- Safety considerations – any safety precautions to be considered as a result of this Waste Processing Strategy (e.g., changes in process operation, feed make up, different sequence of operating steps, etc.). The need for special handling instructions and/or PPE should be evaluated.

- Incorporation of lessons learned, continuous improvement, as low as reasonably achievable (ALAR) improvements, and other improvement opportunities.

- Verification tank sampling requirements.

3. The Waste Processing Strategy will also include confirmation that the planned volume of wastewater treated is within Toxic Substances Control Act Risk-Based Disposal Approval (RBDA) limit of 55.5 million gallons per year. A definitive statement will be made on the status of the total Aroclor concentration in regards to the 600 µg/L RBDA conditional trigger level. (7.1.4)

4. Processing feed that may contain beryllium requires additional considerations to ensure facility personnel are protected from potential exposure. The potential for beryllium-contaminated feed will be identified as a part of the waste acceptance process described in TFC-ENG-FACSUP-P-34. If potentially beryllium-containing feed from the Liquid Effluent Retention Facility (LERF) or from drums or other containers loaded directly into the secondary treatment train is expected to be processed during a campaign, then the Waste Processing Strategy document must include a beryllium strategy. The beryllium strategy must address beryllium sampling requirements as well as any precautions that must be taken to protect workers during normal operational activities. Feed will be considered to contain beryllium if sample results indicate any level of beryllium above detection limits. If beryllium sample results for the feed are below the analytical detection limits, a beryllium strategy is not required and a definitive statement of that status will be included in the Waste Processing Strategy document.

The beryllium sampling section will include direction on sample frequency and location, as well as actions that should be taken if beryllium is detected. Possible sample locations include the influent feed, concentrated brine, and the powder. Sampling should include total dissolved solids to allow for estimating the concentration in the powder.

4.2 Preparing a Waste Processing Strategy

At a minimum, a Waste Processing Strategy is written per condition (1)(a)(ii) of the Final Delisting.

ETF Engineering Manager


Engineer

ETF Engineering Manager

3. Once the document is prepared, ensure the Waste Processing Strategy is issued in accordance with TFC-ENG-DESIGN-C-25.

4. Ensure any necessary changes to the Waste Processing Strategy are made in accordance with TFC-ENG-DESIGN-C-25.

5.0 DEFINITIONS

Key Unit Operations. Key unit operations are filtration, ultraviolet/oxidation (UV/OX), reverse osmosis (RO), ion exchange, and secondary waste treatment.

Primary Operating Parameters. Primary operating parameters are defined as ultraviolet/oxidation (UV/OX) peroxide addition rate, reverse osmosis (RO) reject ratio, and processing flow rate as measured at the ETF surge tank outlet.

Waste Stream. A waste stream is defined as all wastewaters received into ETF that meet the waste acceptance criteria and are managed under the same waste processing strategy.

6.0 RECORDS

The following records are generated during the performance of this procedure:

- Waste Processing Strategy (may be part of Process Control Plan).

The record custodian identified in the Company Records Inventory and Disposition Schedule is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements


3. State Waste Discharge Permit Number ST0004500.


7.2 References

1. TFC-BSM-IRM_DC-C-02, “Records Management.”

2. TFC-ENG-CHEM-C-11, “Process Control Plans.”

4. TFC-ENG-FACSUP-P-34, “New Waste Stream Acceptance at LERF/ETF.”