



Reclamation of Petroleum Products, Solids and Contact Waters:

Description of AECs Birmingham, AL
Petroleum Reclamation Facility





Process Description

AEC handles three main products in the Reclamation Process.

- Tank Bottom Solids
- Petroleum Contact Water
- Transmix fuels





Tank Bottom Solids

- Solids consisting of sand, dirt, emulsified product, solidified fuel and rust scale, that accumulate at the base of petroleum storage tanks.
- The solids are removed during tank cleaning and must be managed.



Petroleum Contact Water (PCW)

Water which has been in contact with petroleum products allowing dissolved fractions of petroleum constituents to be released into the water.

- i.e.,
- containment basin water
 - hydrostatic test water
 - contaminated groundwater
 - tank bottom solids water



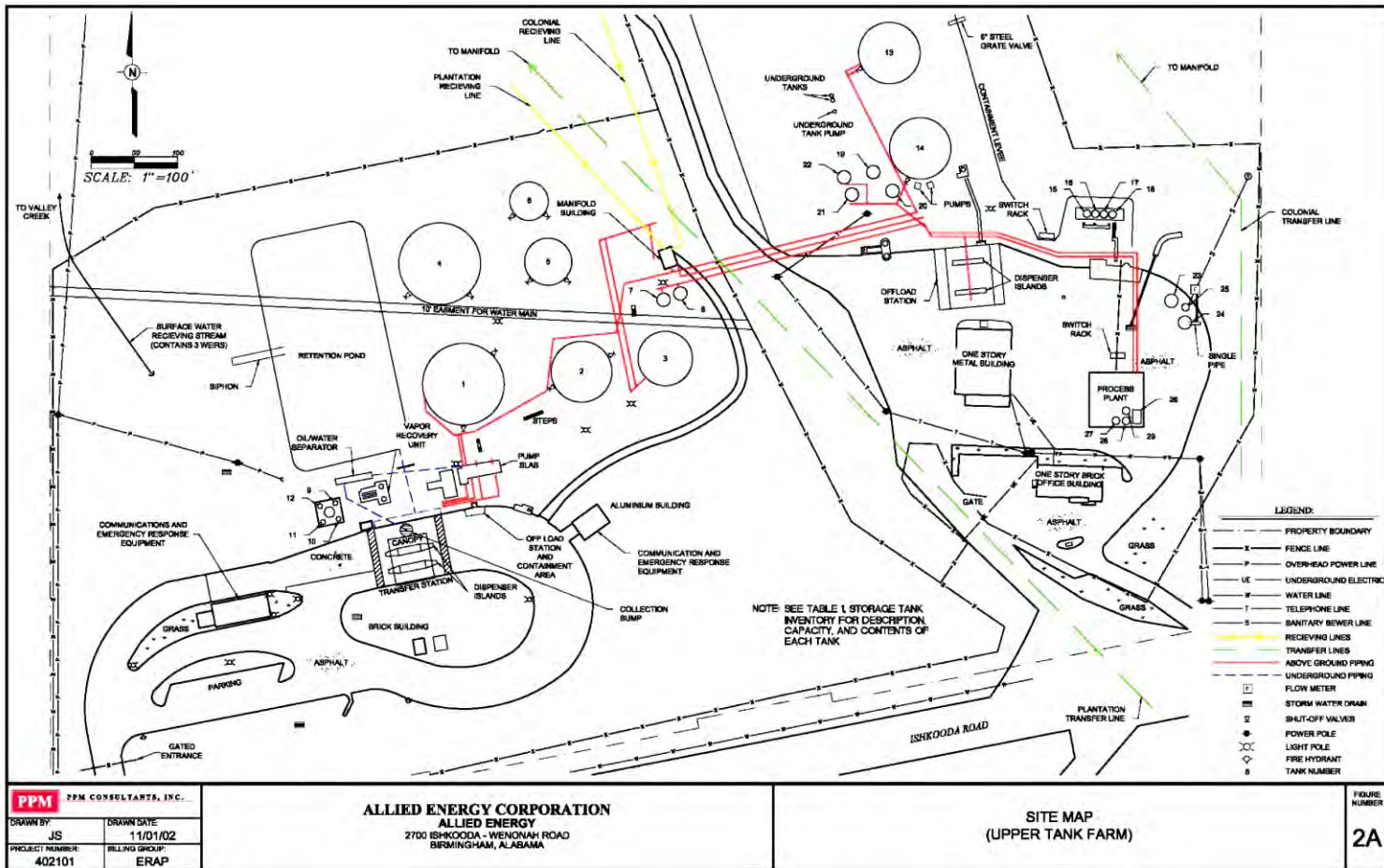
Transmix

By definition, Transmix is a mixture of gasoline and diesel fuels that result from various sources such as the following:

- pipeline transfers
- cross contamination of tanks
- barge transfers
- errors in unloading at service stations
- comingling of treated recycle streams



AEC Facilities



REVISIONS



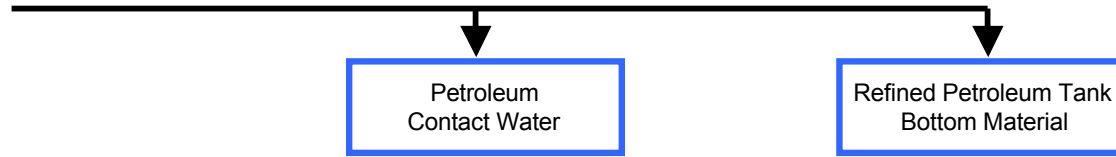
AEC Reclamation Process

- Handle only light petroleum products
 - Tank Bottom Sludge
 - Petroleum Contact Water

- Produce only -
 - Treated water to POTW
 - Transmix – gasoline and diesel
 - dry solids to non-hazardous landfill



AEC Reclamation Process



Offloading Stations

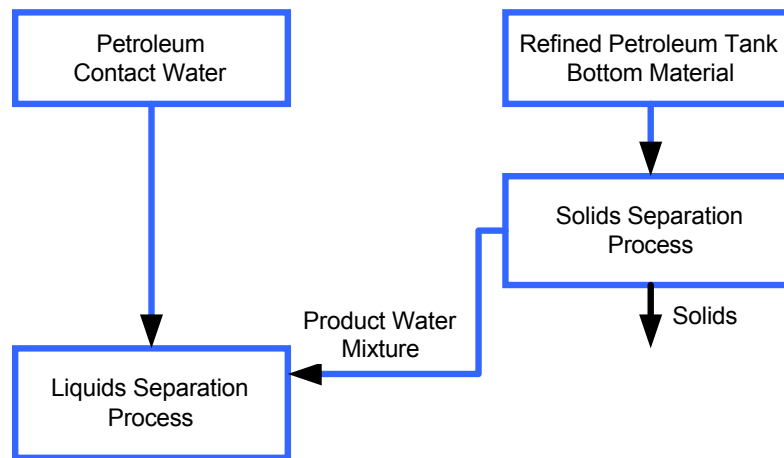
Offloading Stations

The Offloading Station contains separate locations for PCW, Transmix, and Tank Bottom Solids offloading in containment areas.



AEC Reclamation Process

Separation Processes



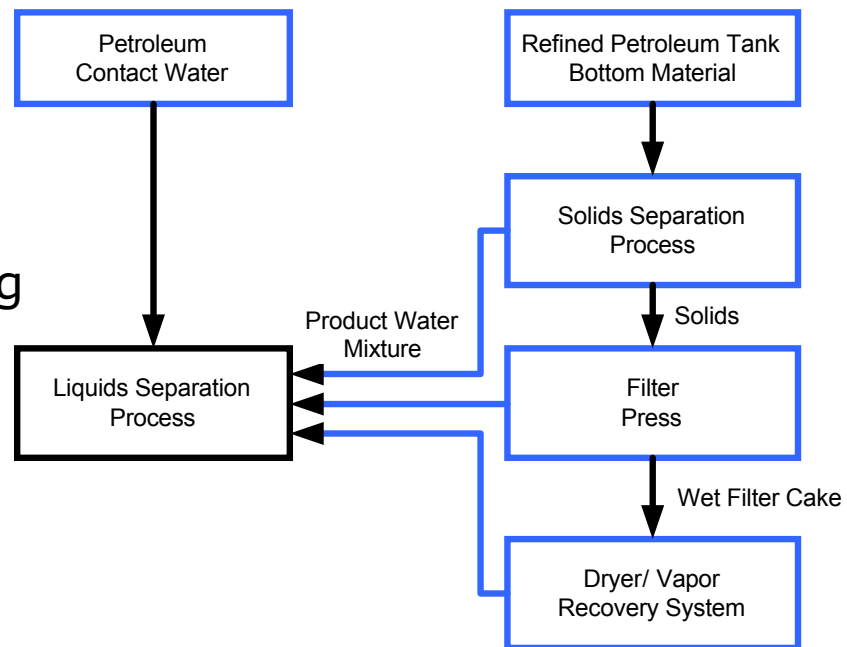
Separation Process

The Separation Process includes an oil/water separator, a specially designed solids holding tank, a filtrate recovery tank and a product recovery information system.



AEC Reclamation Process

Solids Processing and
High Temperature Drying



Solids Processing Building

The Solids Processing Building contains a filter press, a chilled two-stage vapor recovery system, high temperature dryer, and off-gas oxygen analysis system. This building was designed as an explosion-proof area.

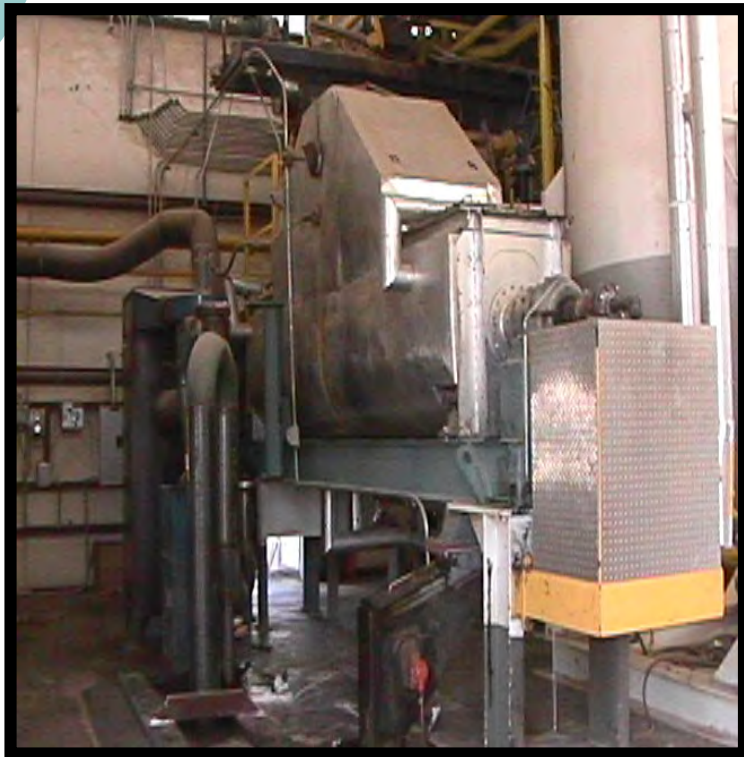


Plate and Frame Filter Press

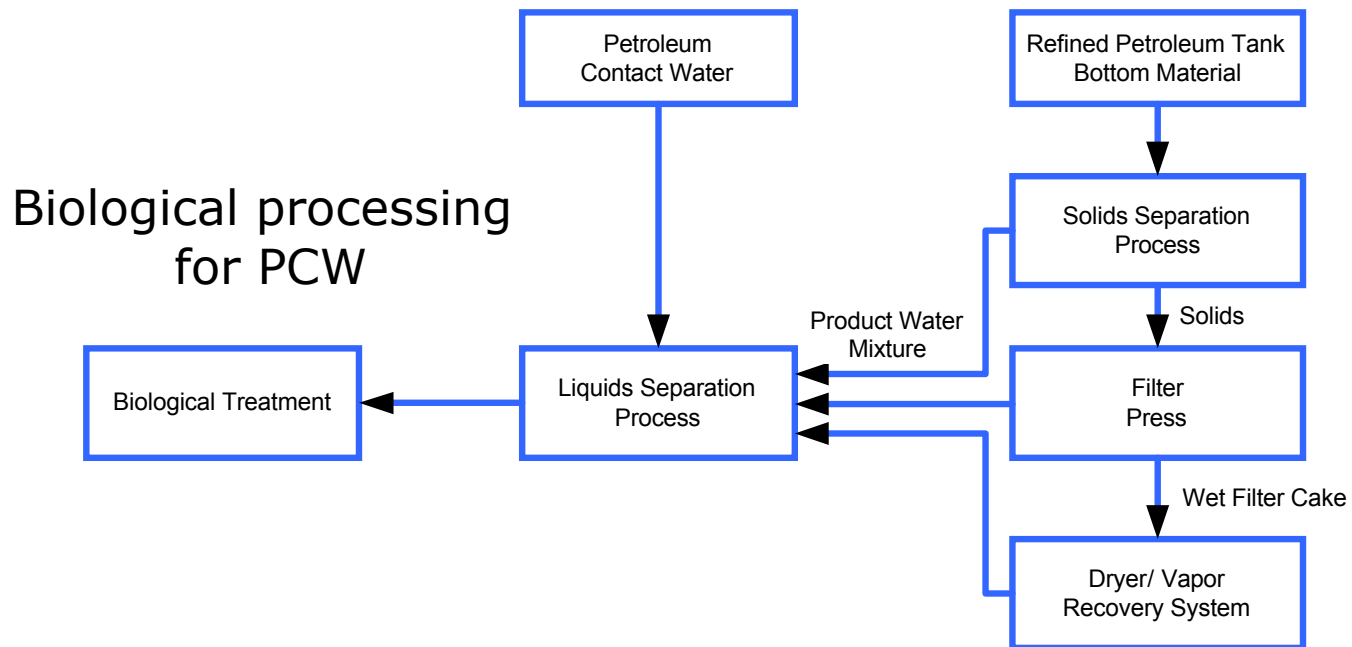


High Temperature Drying System

Allied Energy uses a high temperature dryer with two-stage vapor recovery system that ensures a very dry final powder product and recycles any vapors back to the recovery system.



AEC Reclamation Process



Petroleum Contact Water Treatment

Petroleum Contact Water is processed using a Biological Sequential Batch

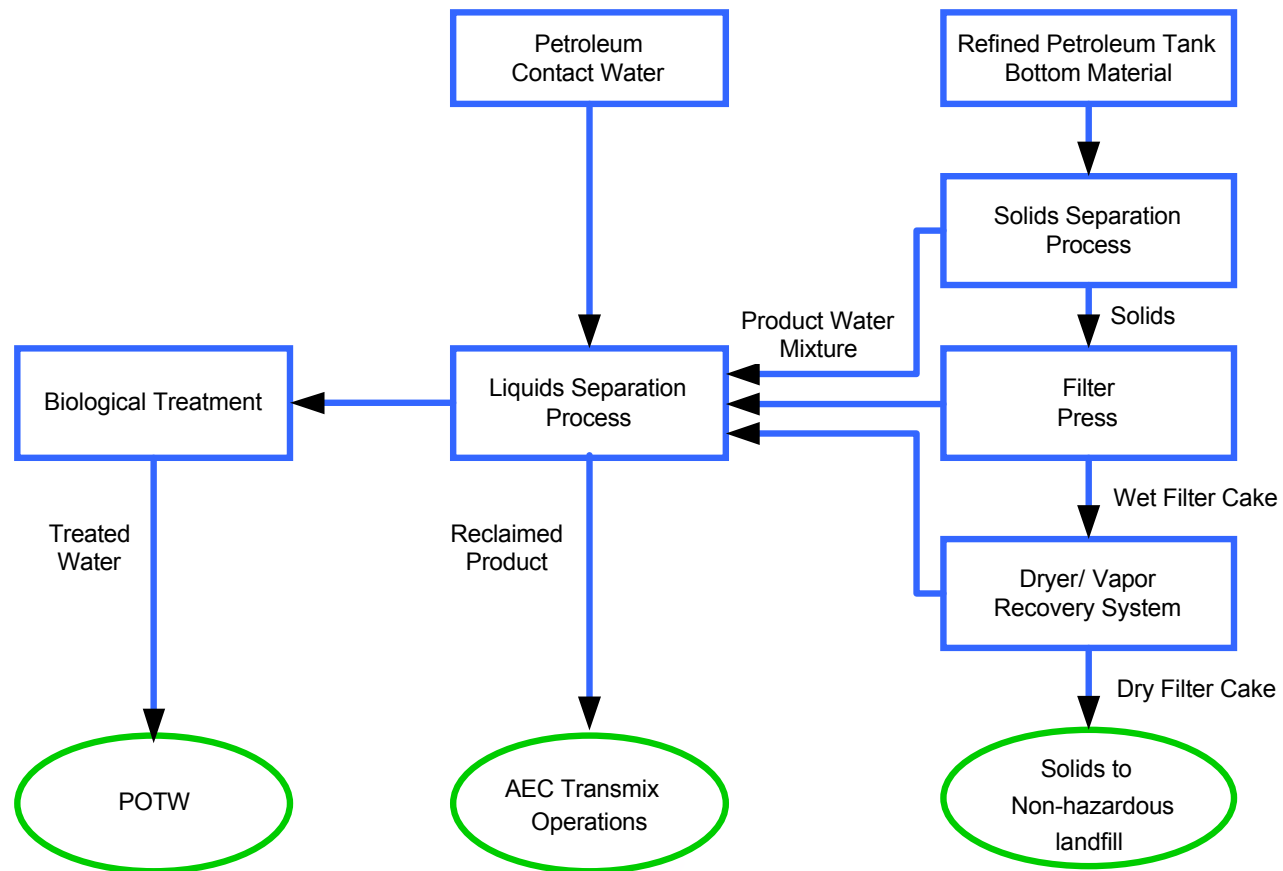
Reactor. Processed petroleum contact water is appropriately sampled and discharged under a State Indirect Discharge permit.



Biological Sequential Batch Reactor



AEC Reclamation Process



Transmix Distillation Operations



In April 2009, AEC began operation of a transmix distillation column capable of processing 4500 barrels of transmix per day .



Transmix Recovery Tanks

All transmix from the reclamation process is stored on-site and goes to the new Transmix distillation facility.



This approach enables AEC to reclaim this fuel and use it for the original intended purpose as is required by the RCRA Reg's.



Transmix Distillation Operations

AEC's lab has the ability to evaluate the composition of incoming materials

using a gas chromatograph, and analyze for sulfur and octane as part of the quality control and compliance efforts.



Petroleum Marketing Terminal

AEC maintains a full service petroleum marketing terminal that includes four loading lanes, blending operations and on-site QA/QC lab.

