

Date: June 30, 2017	Project Title	<b>Used Oil Processing Facility &amp; Solid Waste Permit Applications</b>
EPA I.D. No. FLD 982 162 943	Site Name:	January Environmental Services, Inc
	Site Address:	1920 State Road 60 W Bartow, Florida 33830-4261

**ATTACHMENT D**

**FACILITY'S PROCESS DESCRIPTION**

Project No. 021709	
<a href="https://d.docs.live.net/f21d013299119990/GeoTech%20Environmental/Projects/2017/021709%20-%20January%20Environmental%20Inc%20-%20Application%20and%20Modification%202017/10%20-%20Report/2017-08-02_Renewal%20of%20Used%20Oil%20Permit%20Application%20Rev%201%20nl%20BK.docx">https://d.docs.live.net/f21d013299119990/GeoTech Environmental/Projects/2017/021709 - January Environmental Inc - Application and Modification 2017/10 - Report/2017-08-02_Renewal of Used Oil Permit Application Rev 1 nl BK.docx</a>	

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## D: FACILITY'S DETAILED PROCESS DESCRIPTION

### D1 General

As previously requested and approved by FDEP, JESI intends to use the two 20,000-gallon single-walled steel Aboveground Storage Tanks (ASTs) containing used oil and designated as TK-107 and TK-108 in **Table 1**. Tank TK-107 is empty and has been installed within secondary containment # 5 while hard piping connection is anticipated to be installed later, while Tank TK-108, piping and secondary containment #6 is awaiting installation (see **Figure 2** and **Figure 3**).

Except for the already removed Sharpless Horizontal Super-D-Canter, the Sweco Separator and the Westalia OSB 35 Unitrol Centrifuge and including related components (control panel, electric motor, fan system, differential electric drive, and stairway), no other changes to the existing Permit Numbers 307171-HO-001 and 307171-SO-002, have occurred.

### D2 Used Oil Processing

Currently, JESI is authorized to process used oil, accepts only non-hazardous, non-biological industrial wastewater, primarily from the following: petroleum contact water (PCW) consisting almost entirely of gasoline/diesel/water mixtures from petroleum storage facilities; industrial process wastewater; landfill leachate; wastewater from tank cleaning, transportation and environmental remediation sources.

JESI processes used oil by chemical or physical operations to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived products for its vendors. Processing includes blending used oil with virgin petroleum products, blending used oils to meet the fuel specification found in 40 C.F.R. Part 279.11, filtration, simple distillation, chemical or physical separation and re-refining. Due to the nature of oil, used oil can be re-refined and returned to a high-quality base oil or to a usable condition or state. Re-refiners use various processes to remove contaminants, water, spent additives and any of the original remaining additives from the used oil. The result is the reclamation of approximately 75 to 80 percent of the original base stock. A further process of refining and blending is then carried out to produce finished products.

### D3 Existing Tanks and Equipment

The facility currently has a total of ten (10) storage tanks mostly within concrete secondary containment structures #2 and 3 for the storage of used oil and including one 200-gallon used oil double-walled AST that contains oil products. The Facility utilizes two bulk transport tankers; one 5,500-gallon capacity and one 3,200-gallon capacity to collect used oil or oily water from outside vendors as shown in **Table 1**. Two vacuum trucks and one vacuum trailer are used for cleaning out oil-water separators at outside facilities and liquids are offloaded to approved industrial wastewater pretreatment facilities that handle all non-hazardous industrial wastewater. The two 23,625-gallon railcars are onsite but not utilized in a few years. The rail cars were previously used to ship water separated from the oil. The Department observed on 2/20/15, that JESI has not shipped any product via rail in the last few years. Additionally, there are two 5,600-gallon blend tanks, BT-301 and BT-302 located in secondary containment #3 that are being utilized processing used oil (**Figure 3**). GeoTech noted in previous reports that TK-105 was previously reported to store Anti-freeze solution, which is incorrect. JESI has confirmed that TK-105 is only used to store used oil.

### D4 New Tank Farm Storage Area (TK-107 & TK-108)

The two new 20,000-gallon single-walled ASTs, TK-107 and TK-108 are U.L.142, Underwriters Laboratories, Inc., Steel vertical Aboveground Tanks for used oil liquids. The tanks are approximately 24 feet long by 12 feet in diameter located within secondary containment # 5 (**Figure 3**). In accordance to Rule 62-762, Florida Administrative Code

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(F.A.C), the ASTs are single-walled shop-fabricated tanks have to be installed in a dike field area for containment. Used oil from the tanker trucks will be transferred via 4-inch flex hoses within the truck wagon unloading area in secondary containment #1 (See **Figure 2**, Site Layout Map). The new ASTs will be piped directly to the ASTs piping in secondary containment #2 and therefore all used oil will be received/sent via these pipes. All ASTs installation shall comply in strict accordance with the most recent installation instructions provided by the tank manufacturer, PEI/RP200, UFC, NFPA 30, local ordinance, recognized engineering procedure, and including all requirements of the Florida Fire Prevention Code, and the N.F.P.A. Life Safety Codes.

Both ASTs (TK-107 has a concrete base of 14'long x 14'wide x1' thick will be set on a concrete base suitable to support the weight of the tanks and full product capacity and will be installed in accordance to the Rule 62-762, Florida Administrative Code (F.A.C). All hard piping will be compatible with the product used will be constructed of 4-inch American Standards for Testing and Materials (ASTM) or American National Standards Institute (ANSI)-related steel and connecting the existing ASTs located in secondary containment area #2 and to the bulk loading/unloading area above the concrete secondary containment structures.

The proposed concrete secondary containment structure # 5 is designed to provide adequate containment for the ASTs as required by the Spill Prevention, Control, And Countermeasure Plan (SPCCP) that complies with the requirements of the Title 40 Chapter I Subchapter D Part 112, State and local regulations. Refer to **Table 2** for the secondary containment calculations for the used oil tanks TK-107 and TK-108. Based on the design, any spill associated with the ASTs and/or piping will be contained and controlled within the secondary containment structures. Overhead piping is only utilized during transfer of used oil from the bulk loading/unloading area via a pump. If a leak occurred from the overhead piping during transfer, it will be controlled by turning off the pump at bulk loading/unloading area and containing with a spill kit. All transport truck delivery and picking up of used oil to these ASTs will be conducted in accordance with Florida Department of Transportation (FDOT) regulations. Unloading will be monitored by the driver at all times.

#### D5 Other Process Equipment

JESI has already removed the Sharpless Horizontal Super-D-Canter, the Sweco Separator and the Westalia OSB 35 Unitrol Centrifuge and including related components (control panel, electric motor, fan system, differential electric drive, and stairway).

#### D6 Process Description

Processing via oil-water solid separation includes the use of the above-mentioned ASTs located within a secondary containment as shown in **Figures 2** and **Figure 3**.

Products mentioned above that require processing are received at the site and pumped into one of eight holding tank, TK-102 through TK-106, TK-107, and TK-108 (upon approval by the Department). From the holding tanks, the used oil is pumped via 4-inch pipes to one of two processing/blending tanks, BT-301 and BT-302, where it is heated via a heat exchanger to sufficient temperatures. Chemicals and additives are added to assist in the gravimetric separation and de-emulsification. In this type of emulsion, water is the internal dispersed or discontinuous phase, while oil is the external or continuous phase. Separation by the different gravity of the two phases is a very slow process, but can be accelerated by the assistance of chemicals. The chemicals used are termed demulsifiers, emulsion breakers or wetting agents. These additives are surfactants, which migrate to the oil/water interface. They adsorb on the oil films surrounding water droplets and break the oil films. Then water droplets aggregate to form water drops large enough to gravitationally separate them from the oil. Two 55-gallon drums of hydrochloric acid solution and sodium hydroxide solution are used for pH adjustment.

The solids are (30 to 50% dry solids) are discharged to the 10-cubic yard (CY) roll off located below the centrifuge while the liquids that contains the oil and emulsion with water goes through the polishing step. The cooled off process stream passes through the heat exchanger again to ensure that the process temperature is maintained. The solids are dropped into

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a 10 CY open roll off container staged under the centrifuge. The roll off is under cover, and within a containment area # 3. The system discussed above is a continuous system and can run 12 hours per day.

As discussed by the Department in their field inspection report (2/20/15) one shipment of the solid was generated from the centrifuge and disposed of to date. A sample collected by JESI on December 29, 2014 and was found to be non-hazardous. Subsequently, the solid material was shipped via SWS on January 22, 2015 to the Okeechobee landfill as non-hazardous waste.

### D7 Chemical Storage and Sludge Area

The two 55-gallon drums containing acids and caustics are within secondary containment #3 on a spill containment pallet. The solids are placed into the open top roll off located in the secondary containment area #3 as shown in **Figure 3**. The entire containment system is sufficiently impervious to chemicals, used oil or solids to prevent any leakage of these products within the containment system from migrating out to soil, groundwater, or surface water prior to the cleanup of spills and releases. All solid waste will be analyzed, profiled, and characterized for disposal parameters required by recycling facilities.

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