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DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N735941631

FACILITY: Aevitas Specialty Services Corp		**SRN / ID:** N7359
LOCATION: 663 LYCASTE, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Greg Reichard , Chief Executive Officer		**ACTIVITY DATE:** 08/23/2017
STAFF: Stephen Weis	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Compliance inspection of the Aevitas Specialty Services facility in Detroit. The Aevitas facility is scheduled for inspection in FY 2017.		
RESOLVED COMPLAINTS:		

Location:
Aevitas Specialty Services Corporation
(SRN N7359)
663 Lycaste
Detroit

Date of Activity:
Wednesday, August 23, 2017

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Greg Reichard, Chief Executive Officer, Aevitas
Cynthia Ross, Aevitas

Purpose of Activity

A self-initiated inspection of the Aevitas Specialty Services Corporation facility (hereinafter "Aevitas") was conducted on Wednesday, August 23, 2017. The Aevitas facility was on my list of sources targeted for an inspection during FY 2017. The purpose of this inspection was to determine compliance of operations at the Aevitas facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control) and with applicable Federal standards. The facility is also subject to the terms and conditions of Permit to Install No. 10-12.

Facility Site Description

The Aevitas facility occupies the area at the southwest corner of Lycaste and Edlie Streets. The facility is located in Detroit's Connor Creek Industrial neighborhood, which is located between Interstate 94 and the Detroit River, and is bounded by St. Jean Street and Connor Avenue/Clairpoint Street. Aevitas is located south of Jefferson, and east of St. Jean. The area in the immediate vicinity of Aevitas (between Edlie and Freud Streets, and between Lycaste and St. Jean Streets) consists of a variety of commercial and industrial properties, including Stericycle/PSC Nortru and ALCO Products. Fiat-Chrysler's Jefferson North Assembly Plant is located on the north side of Jefferson, just over ¼ mile north of Aevitas. There are residential areas to the south and west of the Aevitas facility, and the area to the east of Clairpoint St. (approximately 0.4 miles from Aevitas) consists almost entirely of residential properties. The closest residences to Aevitas are located about ¼ from the facility.

Aevitas began operating at this facility in 2012. On June 7, 2011, Aevitas Inc., a Canadian company that specializes in industrial waste management, purchased General Oil Company. General Oil was in the business of used oil and oily wastewater recycling; they operated an oil product blending facility in Livonia, and a used oil and oily wastewater treatment facility at 12600 Beech-Daly Road in Redford Township. Aevitas purchased the property and facility at 663 Lycaste; the facility had previously operated as Energis Detroit, LLC, a used oil processor, and previous entities owning/operating the facility included OmniChem, Apex Casting, and PSC-Nortru, Inc. Aevitas ceased operating the Redford location on September 10, 2012, and all of the business related to used oily and oily wastewater recycling that was taking place at the Redford site was moved to the Lycaste facility from that point onward. The Redford facility is no longer operated by Aevitas, and the treatment

process equipment at the Redford facility has been permanently removed from the site. During my site visit on August 12, 2016, I was told that the product blending operations from the Livonia facility (35796 Veronica St.) had been moved to the Lycaste facility, and that the Livonia facility will be permanently shut down.

Facility Operations

As mentioned in the previous section of this report, Aevitas owns and operates a used oil and oily wastewater treatment and oil product blending facility on Lycaste. The facility consists of an office area, an on-site laboratory, and various tanks that are part of the treatment and blending operations.

The materials that are processed or stored at the facility arrive via tanker truck, with a small percentage of material delivered in drums or totes. According to the permit application that was submitted for PTI No.10-12, the industrial liquid waste that is accepted and treated by Aevitas at this facility is classified in one of three categories – straight oil, which contains over 90% oil (and less than 10% water); oily waste, which contains between 10 and 90% oil (the rest, between 11 and 89%, would be water and sludge); and oily water, which contains less than 10% oil, with the remainder consisting of water and sludge.

When straight oil arrives at the Aevitas facility, it is unloaded from the tanker/drum/tote into one of six vertical fixed roof storage tanks identified in PTI No. 10-12 as the FG3 flexible group; this flexible group consists of Tanks 31 through 36, which are identified in the permit as EU-Tank31 through EU-Tank36. Tanks 31, 32, 35 and 36 have a working capacity of 19,500 gallons, while Tanks 33 and 34 have a working capacity of 6,000 gallons. These six tanks are located outside of and adjacent to the building on the north side, and they vent to the scrubber system. Oil is heated in these tanks to 210°F to separate the oil and water from each other. After this treatment, the oil product is transferred to one of six petroleum product storage tanks with a storage capacity of 19,500 gallons. These tanks, identified as Tanks 41 through 46, are located outside of the building on the south side.

Oily waste and oily water are treated using essentially the same procedure in the same process equipment; the main difference would be the amount of treatment (and treatment chemicals) that would be needed to separate the water and sludge from the oil. In this process, the oily waste/water is unloaded from the tanker/drum/tote into one of six storage tanks identified in the permit as FG1; these vertical fixed roof tanks are identified in the permit as EU-Tank11 through EU-Tank16. Oily waste is heated to 160°F, and then transferred to one of the two exterior tanks in the FG2 flexible group, both of which vent to the scrubber system. Within these tanks, identified as Tanks 21 and 22 and having a working capacity of 16,000 gallons, the oily waste is heated to between 150° and 200°F, its pH is adjusted via the addition of sulfuric acid and sodium hydroxide, and, if necessary, polymers are added, all to further separate the oil, water and sludge in the waste material. The oil that is separated is transferred to one of the FG3 tanks (Tanks 31 through 36), and processed as straight oil, as described in the last paragraph. The sludge is also transferred to one of the FG3 tanks, where it is dried by heating the material to between 180° and 200°F. The sludge is shipped offsite for sale as a fuel.

The water phase that is produced as a result of the treatment process (i.e. during the oil/sludge/water phase separation) is treated by Aevitas in on-site wastewater treatment tanks. The water is adjusted for pH and further treated with precipitating and flocculating agents to remove solids. The water is discharged to the POTW (Publically Owned Treatment Works, which is essentially the sewer pipe that directs the water to the Great Lakes Water Authority Wastewater Treatment Plant), and the discharge is subject to permitted effluent discharge limits. The solids generated by the wastewater treatment process are removed via a filter press, and sent offsite for disposal.

The heated treatment tanks are heated via heating coils, which are heated by steam produced by a boiler identified as EU-Boiler. The boiler has a heat input rating of 5 MMBTU/hour, and is exempt from AQD permitting requirements per the provisions of Michigan Administrative Rule 282(b)(i). Accordingly, while the boiler is identified in the Emission Unit Summary Table, its operation is not further addressed in the permit.

A facility site map is attached to this report that shows the location of the tanks.

I was told during the site visit that the facility currently operates one expanded shift from 6am-6pm Mondays through Fridays, with an occasional half day on Saturdays.

Inspection Narrative

I arrived at the facility at around 10:10am. I was met by Greg Reichard. We began the site visit by meeting in the facility's conference room for an initial discussion. Cynthia Ross joined us for this pre-walkthrough meeting, as well.

We discussed current operations at the facility. Greg told me that the business footprint at the facility has changed. A business decision was made in the Spring of 2016 to stop accepting waste material from a couple of automotive related facilities in an effort to cease treating sludge materials. It was explained to me that these loads had a high solids content, and less oil yield, and they had the potential to be highly odorous. The facility transferred their focus to treating oily water from utilities, and taking material from smaller businesses.

We then discussed the scrubber. The permit requirements in the FG-Process Tanks Flexible Group table in PTI 10-12 require and address the use of a packed bed scrubber to control emissions to the ambient air from the processing tanks at the Aevitas facility that are included in this Flexible Group. As a result of the site visit to the facility in August of 2016, a Violation Notice was issued that addressed the facility not monitoring the liquid flow rate and the redox potential of the scrubber solution. I was told that Aevitas has been working with contractors and vendors regarding the installation of a flowmeter for the scrubber. I also received some updates via e-mail, including one dated August 1, 2017 that included a description and diagram of a lateral tank flow rate calibration that was performed to provide an estimate as to the flow rate of scrubber solution to the scrubber. A copy of the explanation and diagram of the lateral tank flow calibration exercise is attached to this report for reference. I was told that the vendors and contractors had analyzed the system, and that some were suggesting that Aevitas needed to modify their system to get the proper flowmeter.

Aevitas describe the measures that they have been taking to monitoring the operation of the scrubber, and to address odors from the facility. Regarding odors, Greg told me that Aevitas staff have an ongoing dialogue with their immediate neighbors on Lycaste and to the west. I was told that they are in regular contact, and that Aevitas staff are informed of an odor typically once a month, typically on a Monday morning when operations are resumed after the weekend. Greg attributed these odors to some settling and anaerobic activity in a process tank over the weekend that is occasionally noticed when the system is started on a Monday. It was also reiterated that, due to the change in the type of material that is accepted by the facility for treatment, the potential for odors has lessened considerably. I was told that facility staff monitor weather and wind direction, and are aware of potentially odorous operations, such as acid treatment (which I was told occurs rarely).

Regarding the operation of the scrubber, a flow meter was installed about two weeks prior to this site visit. As mentioned earlier, Aevitas staff had performed some lateral tank flow rate calibrations in order to determine the flow rate of scrubber solution to the scrubber. As described in the attachments to this report, Aevitas directed the flow from the valve that fills the scrubber's lateral tank into a 55 gallon drum and timed how long it took to fill the drum, which allowed for a calculation of the scrubber liquid flow rate from the valve. It was determined that the flow rate was approximately 197-200 gallons per minute. Aevitas is working to calibrate the new flowmeter, which is currently reading between 40-50 gallons per minute. We observed that the flow meter is installed at the nozzles that spray scrubber solution onto the exhaust air stream. This could be providing a lower number due to the loss/reduced flow associated with the smaller diameter of the nozzles, and the amount of liquid that is fed to the nozzles.

Special Condition III.1.c in FG-Process Tanks requires that the scrubber solution be recirculated to the packing at a rate not less than 125 gallons per minute. As it was explained to me, the discharge pipe to the scrubber's lateral tank is providing the flow of scrubber solution that is utilized by the scrubber. It was suggested that the location at which the flow meter was installed is not allowing for an accurate measure of the amount of scrubber solution that is being provided for use in the scrubber. Aevitas committed to contacting the manufacturer of the flow meter, as well as the manufacturer of the scrubber, if necessary, to optimize the location at which the flow meter is taking measurements. The portion of the lateral tank at which the recirculated scrubber solution is fed is open to allow for monitoring by facility staff, which includes taking samples of the scrubber solution and adding chemicals, as needed. Aevitas staff monitor the valve to ensure that it remains in the same position as was measured during the flow calibration, and they told me that they plan to perform another flow calibration.

Aevitas currently takes samples of the scrubber solution twice each day, and the pH and redox (oxidation-reduction potential, or ORP) are determined and recorded. I was shown of the Emissions Control System Log, and internal form that is used to record these parameters. I was provided with a copy of the form for the second part of July 2017, which is attached to this report for reference. It should be noted that while the form was printed prior to my site visit, the information in the print date field states that it was printed on August 12, 2016, which is a glitch on the sheet.

We were then joined by Jeff Wheeler of Aevitas' Engineering and Maintenance group. The group of us walked outside to the scrubber. Jeff showed me the lateral tank, describing how the scrubber liquid is fed to the unit, and how the calibration exercise was performed. Jeff and I climbed a ladder and observed the recirculation pipe and its associated valve feeding the tank. We also discussed an issue from last year's visit regarding the scrubber system. The scrubber system consists of a vertical scrubber upstream of a horizontal scrubber. I was told that the vertical scrubber is operating fine, but that the horizontal scrubber is not operating. Aevitas' corporate staff have been told that the horizontal scrubber is not necessary, and the company is looking into removing the horizontal scrubber to improve draw to the vertical scrubber and to make it easier to balance the air flow in the system. We also discussed the redox/ORP monitor. Aevitas is sampling the scrubber solution and determining/recording the redox/ORP twice each day, which is compliant with the recordkeeping requirement in Special Condition VI.3.b in FG-Process Tanks. Aevitas staff told me that they are looking into having a redox/ORP meter installed, and hope to have this completed within 120 days.

We returned to the conference room, and Cynthia provided me with copies of the facility processing log from August 2016 through July 2017, the previously mentioned Emissions Control System Log, and an example of the Processing Log from the second part of July 2017. Copies of all of this information is attached to this report for reference. After some closing discussion, I left the facility at 11:45am.

Permits/Regulations/Orders/Other

Permits

The Aevitas facility was issued DEQ-AQD Permit to Install (PTI) No.10-12 on April 3, 2012. This permit addresses the various process and storage tanks associated with the oil and oily wastewater treatment process. The permit includes an Emission Unit Summary Table that lists all of the pieces of process equipment that were included in the permit application and considered during the permit review process. Some of this equipment is exempt from permitting requirements, and is only listed in the Emission Unit Summary Table, with no corresponding permit requirements. This equipment includes:

- Six fixed-roof storage tanks, each having a storage capacity of 19,500 gallons, that receive oily liquid industrial waste. These tanks, which make up FG1, are identified as EU-Tank11, EU-Tank12, EU-Tank13, EU-Tank14, EU-Tank15 and EU-Tank16.
- Six fixed-roof petroleum product storage tanks, each having a storage capacity of 19,500 gallons. These tanks, identified as EU-Tank41 through EU-Tank46, are used to store the recycled oil product.
- Eight fixed-roof storage tanks located inside of the building that are used to store and process the wastewater generated during the treatment processes. These tanks, designated as EU-Tank51 through EU-Tank56 and EU-TankD1 and EU-TankD2, each have a working capacity of 11,000 gallons.
- Two fixed-roof storage tanks located inside of the building that are used to store sodium hydroxide, which is used in the oily waste/oily water treatment process. These tanks, identified as EU-TankC1 and EU-TankC2, each have a working capacity of 11,000 gallons.
- One fixed-roof tank that is used to store acid (sulfonic and sulfuric), which is used in the oily waste/oily water treatment process. This tank, identified as EU-TankA1, has a working capacity of 3,500 gallons.
- EU-Boiler, a natural gas-fired boiler with a heat input rating of 5 MMBTU/hour that is used to produce steam to heat the heating coils associated with the heated treatment tanks.

There is a flexible group, FGFACILITY that applies to all process equipment at the entire facility, including equipment that is exempt and/or grandfathered from permitting requirements.

The primary focus of the August 23 site visit was to get an update regarding the monitoring of the scrubber parameters, but we did discuss information relating to other aspects of the facility operations that are addressed by the PTI, and I discussed some of the permit conditions to confirm the facility's compliance status. The following provides a description of Aevitas' compliance with the Special Conditions put forth by PTI No. 10-12; the conditions are grouped under two Flexible Groups, FG-Process Tanks, and FGFACILITY:

FG-Process Tanks

Condition II.1 and 2 (Material Limits) – These conditions limit the amount of material that can be received for treatment at the facility with an oil content greater than 10% (SC II.1), and greater than 90% (SC II.2). Records

of materials accepted are kept in a company database. I was provided with a printout of the log of material accepted at the facility from August 2016 through July 2017. This information shows that during this 12 month rolling time period, 2,145,413 gallons of material was accepted with an oil content greater than 10%, and 664,617 gallons of material was accepted for treatment at Aevitas with an oil content greater than 90%. Aevitas is in compliance with this requirement. A copy of the printout that I received is attached to this report for reference.

Condition II.3 (Material Limits) – Aevitas is in compliance with this condition, which limits the amount of batches that can be treated on a daily and monthly basis that contain an organic halide concentration of 100 ppmw or greater. During my site visit, I was told that Aevitas does not deal with much waste with a halide content this high; the types of oily material that they get from their customers doesn't contain this high of a halide content. The last column of the printout referenced for SC II.1 and 2 shows how many loads were "halide positive", which is based on a lower threshold. This column indicates that 4 loads were "halide positive" in the 12 month rolling time period from August 2016 through July 2017.

Condition III.1 (Process/Operational Restrictions) – Aevitas is in compliance with this condition. Aevitas has submitted a Malfunction Abatement Plan (MAP), as required by the permit, for the scrubber system and the processing operations that vent to the scrubber.

Condition IV.1 (Design/Equipment Parameters) – This condition requires that the scrubber be equipped with devices to continuously monitor the redox potential of the scrubber solution, and the liquid flow rate of scrubber solution being circulated to the scrubber packing. During the site visit, I was provided with the status of securing such devices. The redox is being determined and recorded more than is required by the permit on a daily basis, and I was told that a redox/ORP monitor is to be installed. A scrubber solution flow rate monitor has been installed, and Aevitas is working to ensure that it is properly located and calibrated.

Condition IV.2 (Design/Equipment Parameters) – The temperature of the tank contents for the heated tanks is being monitored via a temperature measuring device, and recorded.

Condition IV.3 (Design/Equipment Parameters) – Material is being transferred to processing tanks, which requires that the scrubber be maintained and operated in a satisfactory manner. Aevitas is taking necessary steps to ensure that the scrubber flow rate, pH and redox potential are being maintained within acceptable ranges.

Condition IV.4 – Material is being treated in the processing tanks, which requires that the scrubber be maintained and operated in a satisfactory manner. Aevitas is taking necessary steps to ensure that the scrubber flow rate, pH and redox potential are being maintained within acceptable ranges.

Condition VI.1 (Monitoring/Recordkeeping) – This condition puts forth the recordkeeping requirements related to the material limits in SC II.1 and 2. As mentioned in the entry for that SC above, these records are kept in a company database, which I was shown, and I was provided a printout that summarizes the type (by oil content) and amount of material accepted at the facility from August 2016 through July 2017. Aevitas is in compliance with this requirement. A copy of the printout that I received is attached to this report for reference.

Condition VI.2 (Monitoring/Recordkeeping) – Aevitas is in compliance with this condition, which puts forth the recordkeeping requirements related to the material limits in SC II.3. The same printout referenced in write-up for the last condition also includes a sample of the records required by this condition.

Condition VI.3 (Monitoring/Recordkeeping) – Aevitas is currently monitoring and recording the pH, redox potential and flow rate of the scrubber solution at least once per shift. The company is still finalizing the installation and operation of the redox monitor, and is troubleshooting the operation of the scrubber liquid flow monitor. They have committed to completing the task. DEQ-AQD will be following up with the facility to ensure that tasks are completed.

Condition VI.4 (Monitoring/Recordkeeping) – Aevitas is in compliance with this condition, which requires that the maximum temperature of the contents of each tank be monitored and recorded, on a batch basis. I was provided with some examples of Shift Reports that show this information being kept.

Condition VI.5 (Monitoring/Recordkeeping) – Aevitas is in compliance with this condition. Per paragraphs a. and b., the identification of each waste generator and the amount of material received for treatment for each generator is being maintained. I was told during my site visit in 2016 that this information is kept in database, and that the information is part of the facility's billing system; this information was confirmed during this site visit.

Condition VI.6 (Monitoring/Recordkeeping) – Aevitas is in compliance with this condition, which requires information to be monitored and recorded for each batch treated at the facility. I was shown Shift Reports that show that records addressing - a. the amount of material processed in the batch, b. the tank in which processing occurs, c. the amount and type of chemicals used during the processing of the batch and d. the time period over which processing occurs - are being kept.

Conditions VIII.1 – This special condition puts forth the parameters (minimum height above ground, maximum exhaust diameter) for the scrubber stack. The dimensions in the permit condition were provided during the permit review. I did not verify these dimensions with the facility; I am assuming that they are compliant with the dimensions in the permit conditions

FGFACILITY

Condition I.1 (Emission Limits) – This condition addresses visible emissions from traffic areas at the Aevitas facility. During this site visit, the facility's fugitive dust plan was not discussed. I did not observe any visible emissions or track out on the facility property or the adjacent streets (Edlie and Lycaste).

Condition II.1 (Material Limits) – This condition limits the maximum organic halide concentration in used oil received for treatment to 1,000 ppm by weight. During the site visit in 2016, I was told that none of the loads that Aevitas accepts for treatment at this facility have organic halide concentrations anywhere near 1,000 ppm by weight. This was confirmed during this visit. Aevitas is in compliance with this condition.

Condition II.2 (Material Limits) – Aevitas is in compliance with this condition, which prevents the facility from accepting material regulated as a hazardous waste, and limits the PCB content of incoming materials to less than 50 parts per million, by weight (ppmw). I was told during the 2016 site visit that Aevitas does not accept material that is regulated as a hazardous waste per state or Federal laws and regulations. Also, all loads accepted at the facility are analyzed for PCB content; any load having a PCB content greater than 2 ppmw is not accepted at the facility.

Condition III.1 (Process/Operational Restrictions) – Aevitas is in compliance with this condition. Aevitas has submitted an Odor Management Plan (OMP), as required by the permit, for all process operations at the facility. The OMP is maintained on file at the facility, and there is a copy kept in the facility file for the Aevitas facility in the AQD-Detroit Office.

Condition III.2 (Process/Operational Restrictions) – Aevitas is in compliance with this condition. Aevitas has submitted a Fugitive Dust Control Plan. During the site visit, we discussed the measures taken by the facility to control dust. There is not as much vehicle traffic on unpaved areas as anticipated when the permit and the dust plan were written. Aevitas utilizes steam to clean the grates in the loading and offloading areas of any accumulated dirt and oil residue to prevent track out.

Odor Complaints
DEQ-AQD has not received any odor complaints related to the Aevitas facility in the time since my last visit to the facility in August 2016. There have been no complaints received in 2016 or 2017.

Compliance Determination

Based upon the results of the August 23, 2017 site visit and subsequent review of facility records, the Aevitas Specialty Services facility in Detroit is in substantial compliance with the terms and conditions of Permit to Install No. 10-12.

During my site visit, Aevitas staff and I discussed the remaining tasks related to completing the installation and calibration of the redox/ORP monitor and the flow meter. Aevitas is to provide updates regarding the completion of these tasks. DEQ-AQD will also follow up with Aevitas to monitor their progress.

Attachments to this report: A map of the Aevitas facility; monthly and 12 month rolling time period records of the amount of material received for treatment at the facility from August 2016 through July 2017; a copy of the Emissions Control System Log for the second half of July 2017; a copy of the Processing Log for the second half of July 2017 the show the temperature of the treatment tank and the type and amount of treatment chemicals that were added to each batch; a copy of the description of the lateral tank flow calibration that was performed to determine the scrubber liquid flow rate, as provided by Aevitas.

NAME Steve Wes DATE 11/2/17 SUPERVISOR JK