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FILTER, FL-23402, HOPPER CAR WASH UNLOADING BLOWER GUARD FILTER, 775 ACFM A/N 563891	D2267				D323.1
FILTER, FL-23403, HOPPER CAR WASH DRYING FAN FILTER, 12370 ACFM A/N 563891	D2268				D323.1
FILTER, FL-22429, LOAD OUT TRANSFER BLOWER FILTER A/N 563891	D2269				D323.1
TANK, TK-23407, HOPPER CAR WASH WATER SUMP, WIDTH: 6 FT; HEIGHT: 10 FT; LENGTH: 14 FT A/N 563891	D2271				D323.1
VESSEL, EL-22427, ELUTRIATOR, 150,000 LBS/HR A/N 563891	D2274	C2302			D323.1
BLOWER, BL-2245, ELUTRIATOR/LOAD OUT VENT FILTER FAN A/N 563891	D2435				D323.1
Process 1: Polypropylene Manufacturing Plant					P46.1
System 13: APC Serving Polypropylene Hopper Car Loading & Hopper Car Wash					
BAGHOUSE, FL-22418, ELUTRIATOR/LOAD OUT VENT FILTER, 17200 SCFM, 3500 SQ. FT. A/N 566618	C2302	D2274		PM: (9) [RULE 404, 2-7-1986]	A63.5, C6.1, D28.4, D322.1, D381.1, E102.1, K40.1, K67.1

Background/Process Description

Application 563891 was submitted on April 25, 2014 for a expedited permit processing (XPP) for a baghouse as an Alteration/Modification application type. It was determined that A/N 563891 would be used for the elutriator and other polypropylene hopper car loading and hopper car wash equipment as an Alteration/Modification application type. An Administrative Change application type would be used for the baghouse under A/N 566618. The applicant requested to increase the operating time of the baghouse (and correspondingly the elutriator) which vents the elutriator from 14 hours/day to 24 hours/day and change the corresponding PM10 daily emission limit from 0.4 pounds/day to 0.69 lbs/day. Note the operations and emissions of the other non-elutriator processes encompassed by System 7 Polypropylene Hopper Car Loading & Hopper Car Wash shall not change. Refer to the previous engineering evaluation under A/N 374077 for reference.

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Polypropylene pellets are produced, dried, classified, and pneumatically conveyed from the pellet surge hopper via two (2) pellet transfer blowers (~6,000scfm to 8,000 acfm) to the four (4) pellet blending silos. The pellet blending silo directs pellets from different areas within the silo to the silo base. Blending air from the two (2) blending transfer blowers is used to pneumatically circulate the pellets from the silo base to the top. Fines are controlled through two (2) blending silo vent filters vented with two (2) silo vent filter fans (~7,000 acfm). The blended pellets are pneumatically conveyed via two (2) blending/loadout conveyors from the silos to the elutriator. The elutriator separates particles based on size using counterflow air from the elutriator blower(s). The entrained polymer fines are removed from the combined transfer air and elutriator counterflow air by the elutriator vent filter (baghouse) with an exhaust flow of 17,200 scfm. The cleaned pellets from the elutriator are discharged via a rotary feeder at a rate of 150,000 lbs/hr to the hopper cars. Vapor from the hopper car during pellet loadout is vented through a pellet loadout vent filter (baghouse). Once the hopper car is full it is sealed and moved to the railyard, then a clean, empty hopper is moved to the loading position.

The an empty hopper car needs to be cleaned and dried prior to pellet loading. When a hopper car is at the wash station, unloading hoses are attached to the car's compartment discharge connectors. Any remaining product pellets in the compartment heels are removed pneumatically using the car wash unloading blower. Most of the entrained pellets are removed in the car wash unloading filter/receiver and collected for proper disposal. Any remaining material is removed with the car wash unloading blower inlet guard filter. Drain hoses are then attached to the to the car's compartment discharge connectors and the compartments are washed using water supplied by the hopper car wash water pump at ~100gpm. The wash water and residual polymer is returned to the hopper car wash water sump. A water recycling hydrosieve on the car wash water pump discharge removes polyer entrained in the washwater and is collected for sale. After the wash is complete, the car compartments are dried using a drying fan and the fan air steam heated using the hopper car dryer heater.

The existing application associated with the basic equipment (emission causing/producing equipment) is A/N 374077 under Process 7: Polypropylene Hopper Car Loading & Hopper Car Wash. The existing application associated with the elutriator baghouse is A/N 377747 and the hopper car wash unloading filter/receiver is A/N 377748 under Process 13: APC Servicing Polypropylene Hopper Car Loading & Hopper Car Wash.

INEOS Polyproylene LLC is located in the ARCO Products Co Refinery. INEOS Polyproylene LLC has produced polypropylene in Carson since 1999. The facility permit (Condition S1.1) limits the propylpropylene pellet production rate to no more than 24,955 metric tons in any one month (55,016,357.5 lbs/month ~ 76,411.6 lbs/hr).

The equipment will operate a maximum of 24 hr/day, 7 day/week, 52 weeks/year. There is no school within 1000 feet of emission source. There have been no Notices of Violation, one Notice to Comply C96340 issued 1/8/2014 to calculate R219 emissions per EQ 31 and report SOx emissions quarterly (QCER and electronic), and there are four complaints due to a flaring event on 3/18/2014 due to a Type II kill power outage in the last two years.

Emissions in **bold** will be used for maximum potential emissions for this equipment and NSR. Also all emissions associated with the basic and control equipment will be applied to the NSR of the basic equipment under A/N 563891 per current permitting practice.

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Emission Calculations

Previous PM10 Emissions

Process 7 (Basic) & Process 13 (Control) Emissions

$$R1 = 6.9 \text{ lbs/hr} = 165.6 \text{ lbs/day}$$

R2 = Elutriator (14hrs/day) + Hopper car wash unloading (5 hrs/day)

$$\text{Elutriator} = 0.033 \text{ lbs/hr} \sim 0.03 \text{ lbs/hr} = 0.42 \sim 0.4 \text{ lbs/day (permit limit)}$$

$$\text{Hopper car wash unloading} = 0.036 \text{ lbs/hr} \sim 0.04 \text{ lbs/hr} = 0.20 \text{ lbs/day}$$

$$0.05 \text{ lbs/day (permit limit)} \rightarrow 0.01 \text{ lbs/hr @ 5hrs/day???$$

$$R2 = 0.033 \text{ lbs/hr (elutriator baghouse vent)} + 0.036 \text{ lbs/hr (hopper car wash unloading baghouse vent)}$$

$$= 0.07 \text{ lbs/hr} = 1.68 \text{ lbs/day} = 1.00 \text{ lbs/day (NSR)} = 611.52 \text{ lbs/yr NSR}$$

Current PM10 Emissions

A/N 563891- Process 7 Emissions

$$R1 = 6.9 \text{ lbs/hr} = 165.6 \text{ lbs/day}$$

R2 = Elutriator (24hrs/day) + Hopper car wash unloading (5 hrs/day)

$$\text{Elutriator} = 0.033 \text{ lbs/hr} \sim 0.03 \text{ lbs/hr} = 0.72 \text{ lbs/day (new permit limit)}$$

$$= 0.73 \text{ lbs/day NSR} = 262.8 \text{ lbs/yr} = 21.9 \text{ lbs/month}$$

$$\text{Hopper car wash unloading} = 0.01 \text{ lbs/hr} \sim 0.01 \text{ lbs/hr} = 0.05 \text{ lbs/day (existing permit limit)}$$

$$= 0.05 \text{ lbs/day NSR} = 18.25 \text{ lbs/yr} = 1.52 \text{ lbs/month}$$

R2 = 0.033 lbs/hr (elutriator) + 0.01 lbs/hr (hopper car wash unloading)

$$= 0.043 \sim 0.04 \text{ lbs/hr} = 0.77 \text{ lbs/day} = 0.78 \text{ lbs/day NSR} = 281.05 \text{ lbs/yr NSR}$$

$$= 23.42 \text{ lbs/month}$$

PM Rule 404 Requirement : 17,200 scfm \rightarrow 0.0644 grains/def

$$0.0644 \text{ grains/def} \times 17,200 \text{ scfm} \times 60 \text{ min/hr} \times \text{lb}/7000 \text{ grains} = 9.49 \text{ lbs/hr} > 0.03 \text{ lbs/hr}$$

PM Rule 405 Requirement: 150,000 lbs/hr \rightarrow 18.76 lbs/hr $>$ 0.03 lbs/hr

PM10 Rule 1303 Modeling Requirement: Non-combustion source: 0.41 lbs/hr $>$ 0.03 lbs/hr

Previous ROG Emissions

$$R1 = 6.35 \text{ lbs/hr} = 152.4 \text{ lbs/day}$$

$$R2 = 6.34 \text{ lbs/hr} = 152.16 \text{ lbs/day} = 152 \text{ lbs/day NSR} = 55,386.24 \text{ lbs/yr NSR}$$

Current ROG Emissions

$$R1 = R2 = 0 \text{ lbs/hr}$$

Toxic Risk Analysis

There are no toxic air contaminants (TACs) expected to be present or emitted from the process stream or baghouse permit units, therefore no toxic risk analysis was conducted. MICR is less than 1 in amillion. HIA and HIC are less than 1. Cancer Burden is less than 0.5.

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Rules Evaluation

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.
 Rule 212 (c)(2)- On-site emission increases does not exceed the following:

Volatile Organic Compounds	30 lbs/day
Nitrogen Oxides	40 lbs/day
PM10	30 lbs/day
Sulfur Dioxide	60 lbs/day
Carbon Monoxide	220 lbs/day
Lead	3 lbs/day

Rule 212(c)(3)(A)(i)- MICR is below 1 in a million.
Public Notice is not required.

Rule 401: Visible Emissions
 No violations are expected. Limits are listed under Rule 401(b)(1).

Rule 402: Nuisance
 Nuisance is not expected with proper operation, monitoring and maintenance.
 Compliance is expected.

Rule 404: Particulate Matter-Concentration
 No violations are expected. PM limits are listed under Rule 404 Table 404(a).
 Compliance is expected.

Rule 405: Particulate Matter-Weight
 No violations are expected. PM limits are listed under Rule 405 Table 405(a).
 Compliance is expected.

Reg IX: Standards of Performance for New Stationary Sources
 Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart VV Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006
 The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC services are expected to be in compliance with this regulation.

Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart DDD Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry
 The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC services are expected to be in compliance with this regulation.

Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart GGG Equipment Leaks of Volatile Organic Compound (VOC) in Petroleum Refineries for which

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Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC services are expected to be in compliance with this regulation.

Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart QQQ Volatile Organic Compound (VOC) Emissions from the Petroleum Refinery Wastewater Systems
The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC services are expected to be in compliance with this regulation. Additionally, compliance with the applicable requirements of this Subpart shall be achieved via compliance with SCAQMD Rule 1176.

Rule 1141: Control of Volatile Organic Compound Emissions from Resin Manufacturing
The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC service are expected to be in compliance with this rule.

Rule 1155: Particulate Matter (PM) Control Devices
Rule 1155(b)-Applicable: PM APC devices are venting processes of direct PM emissions.
Rule 1155(d)(1)- No visible emissions are expected.
Rule 1155(d)- Rule 1155(d)(2), (d)(6), and (d)(7) are not applicable since the baghouse has 3,500 sq. ft. filter surface area and therefore is a Tier 2 baghouse.
Rule 1155(d)(3)- PM control shall be operated and maintained in accordance with manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of a control device to ensure that the control device remains in proper operating condition.
Rule 1155(d)(4)- This baghouse does not use a manual shaker. Automated pulse jet system is used.
Rule 1155(d)(8)- The operator shall install and maintain a ventilation system that meets a minimum capture velocity requirement specified in the applicable standards of the most current Edition of the US Industrial Ventilation Handbook, American Conference of Governmental Industrial Hygienists, at the time of installation.
Rule 1155(d)(9)- The operator shall discharge material collected in a permitted PM control device for disposal or bring the material back to the process through a controlled material transfer system to prevent fugitive emissions during material transfer, including, but not limited to, shrouding or use of dust suppressants to stabilize the material.
Rule 1155(e)(1)- The operator shall have a minimum of one person trained in the reading of visible emissions pursuant to EPA Method 22. The operator of any baghouse or other PM control device shall have the trained person conduct a continuous five-minute visible emissions observation using EPA Method 22 once a week and shall maintain records for each observation and any necessary subsequent action(s) taken to eliminate visible

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emissions pursuant to subdivision (f). This process is non-continuous and is exempt from (e)(1), provided no visible emissions occur when the process activity takes place.

(A) If the operator observes any visible emissions exiting at any time, including during a scheduled Method 22 test, the operator shall implement, within 24 hours, all necessary corrective actions to eliminate the visible emissions.

(B) To verify corrective actions were effective, the operator must restart the operations and complete a new Method 22 test to ensure no visible emissions are present. If visible emissions are still present, further corrective actions pursuant to subparagraph (e)(1)(C) must be taken. If no visible emissions are present, normal operations may resume.

(C) If the operator, after taking all corrective actions, subsequently observes visible emissions, the operator shall shut down the PM emitting equipment that vents into the control device, unless the baghouse operation can be adjusted to ensure no visible emissions, until necessary steps are taken to prevent the visible emissions. Baghouse adjustments include, but are not limited to, closing off specific baghouse chambers.

Rule 1155(f)- Records shall be kept in a format approved by the Executive Officer to demonstrate compliance and shall be maintained at the facility for at least 5 years and shall be made available to the Executive Officer immediately upon request. Compliance is expected.

Rule 1173: Control of VOC Leaks and Releases from Components at Petroleum Facilities and Chemical Plants
The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC service are expected to be in compliance with this rule.

Rule 1176: VOC Emissions from Wastewater Systems
The permit units do not have a potential to emit VOCs, since the processes are to elutriate finished pellet product prior to hopper car loading and wash/unload hopper cars prior to loading. Furthermore the equipment associated with this facility in VOC service are expected to be in compliance with this rule.

Reg XIII: Rule 1303(a)- There is no increase of emissions >1 lbs/day, BACT is not required. Although, baghouses are considered as BACT for PM10 control.
Rule 1303(b)(1)- Modeling for PM10 is less than the allowable emissions in Table A-1, no further analysis is required (1301 Appendix A).
Rule 1303(b)(2)- There is an increase of emissions. Although, the facility has a potential to emit less than 4 tons PM10/year, therefore the facility is exempt from offsets per Rule 1304(d)(2)(A).
Compliance with Regulation XIII is expected.

Rule 1401: Toxic Air Contaminants
Rule 1401(d)- There are no expected TACs emissions from this facility.
Rule 1401(d)(1)(A)- MICR less than 1.0×10^{-6} .
Rule 1401(d)(1)(C)- Cancer burden is less than 0.5.

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Rule 1401(d)(2) and Rule 1401(d)(3)- HIC and HIA values are less than 1 respectively. Compliance is expected

Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.

Reg XX: RECLAIM
The facility is a RECLAIM facility. Although, the permit units shall not emit NOx emissions and therefore is not subject to Rule 2005 or Rule 2012 requirements.

Reg XXX: Title V
Increasing the operating hours of the elutriator and the baghouse venting the elutriator is considered a Title V De Minimis Significant permit revision under Rule 3000(b)(7), since the cumulative emission increases of non-RECLAIM pollutants or HAPS due to these permit revisions do not exceed thresholds, listed under Draft Technical Guidance Document for Title V Program, Version 4.0, March 2005, Chapter 5, Table 5-4 (lbs/day VOC: 30, CO: 220, PM10: 30 and HAP: 30), does not require any significant change in monitoring or permit conditions, does not require relaxation or avoidance of a requirement, does not result in new or additional NSPS or NESHAP requirements and will be subject to an EPA review (Rule 3003 (j)). A public notice is not required. Compliance is expected.

Conclusions & Recommendations

The equipment is in compliance with the Rules and Regulations of the SCAQMD. A Permit to Operate is recommended for applications 563891 and 566618. For Permit Conditions please see Sample Permit. A revised RECLAIM/Title V permit is recommended after EPA review.