



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-0882L
Plant ID No.: 039-00663
Applicant: Optima Belle LLC
Facility Name: Belle
Location: Belle, Kanawha County
NAICS Code: 325199
Application Type: Class II Administrative Update
Received Date: March 30, 2016
Engineer Assigned: Mike Egnor
Fee Amount: \$300.00
Date Received: July 27, 2016
Complete Date: November 7, 2016
Due Date: January 7, 2017
Applicant Ad Date: July 30, 2016
Newspaper: *The Charleston Gazette*
UTM's: Easting: 451.90 km Northing: 4,232.60 km Zone: 17
Description: An alternative operating scenario for the refining of Catofin, a powdery catalyst, refining of SR-1000, a proprietary product, and production of T2960, a solid powdered catalyst. There will be the addition of the following equipment: A Double Cone Dryer (230), Condenser (232C), Reactors (232 and 233), a DCD Super Sack/Drum Loader and Unloader (234 and 235), Dust Collector (117), and an already existing Tank Loading (108L). Emissions from this scenario include 0.46 lbs/hr and 0.03 TPY of VOC's, 0.02 lbs/hr and 0.01 TPY of p-Xylene, 0.44 lbs/hr and 0.02 TPY of Toluene, and 0.26 lbs/hr and 0.04 TPY of Particulate Matter.

INTRODUCTION

On July 26, 2016 Optima Belle LLC submitted a Class II Administrative Update for the proposed revisions to an operating scenario for refining Catofin, refining SR-1000, and production of T2960 at the Belle Plant, currently covered under permit R13-0882K.

On August 4, 2016, Optima submitted an affidavit of publication indicating that the required legal notice was run in the Charleston Gazette on July 30, 2016, initiating the 30-day public notice period. Optima also submitted the application fee of \$300 on July 27, 2016 to meet the requirements associated with the Application for Modification Permit.

DESCRIPTION OF PROCESS

Catofin, SR-1000, and T2960 Process Overview:

Catofin, a powdery catalyst, is mixed with ascorbic acid and water to regenerate it. The resulting mixture is then dried, packaged, and sent off-site to be reused in various industrial applications.

SR-1000, a proprietary product, is brought on-site to dry and remove toluene with the process equipment identified in this permit application. SR-1000 is used to generate catalysts.

T2960 is a solid powdered catalyst that is produced from the reaction of a precursor catalyst and tetraethyl orthosilicate. Once reacted, the product is dried and packaged for use in other processes off-site.

SITE INSPECTION

No site inspection was performed by the permitting engineer for this modification as the facility is well known to the DAQ and is frequently inspected by members of the DAQ Enforcement Section.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Catofin, SR-1000, and T2960 Processes

Emission Point 104.014, which is the exit of the incinerator (009) and scrubber (010) is stated as 99.9% efficient. The facility is not claiming any reduction in emissions for the Dust Collector (117) for Emission Point 107.03. Total emissions from this modification are estimated to be 0.46 lbs/hr and 0.03 TPY of VOC's, 0.02 lbs/hr and 0.01 TPY of p-Xylene, 0.44 lbs/hr and 0.02 TPY of Toluene, 0.26 lbs/hr and 0.04 TPY of Particulate Matter.

Emissions Summary

The proposed changes addressed in permit application R13-0882L shall result in the affected emission points undergoing emissions as shown in the following Table 1 - Emissions Summary.

Table 1 - Emissions Summary Operating Scenario: Catofin, SR-1000, and T2960 Processes

Emission Point ID	Device Type	Pollutant	Air Pollution Control Device ID	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions	
				lbs/hr	tons/yr	lbs/hr	lbs/yr
104.014	Incinerator Scrubber	VOC	009	35.02	3.37	0.46	60
		p-Xylene	010	0.02	0.01	0.02	20
		Toluene		35.00	3.06	0.44	40
107.03	Dust Collector	PM	117	0.26	0.04	0.26	80

REGULATORY APPLICABILITY

The following State and Federal regulations were considered for applicability to the subject facility:

The following regulations apply to this production unit: West Virginia Regulations 7, 13, 21, 30 and US EPA MACT Standards for the Miscellaneous Organic NESHAP.

Catofin, SR-1000, and T2960 Processes

RULE 7 - PARTICULATE MATTER FROM MANUFACTURING SOURCES

The end process of refining of Catofin, refining of SR-1000, and production of T2960 where the product goes through drum loading and unloading are a "Type a" Source Operation under Rule 7. The mass limits contained in 45CSR§7-4.1 would be 1.71 lbs/hr for the Dust Collector (117) (based on the smallest production rates of the three; 1,430 lbs over 1 hour). There are no claimed reductions in particulate matter from Dust Collector 117. The emissions are 0.26 lbs/hr, which is well below the Rule 7 limit. The opacity requirements for these sources are already permitted under their Title V Permit.

RACT

45CSR21-40.3.c requires RACT analysis on a case by case basis for those VOC emissions greater than 6 pph which are constructed, modified, or begin operation after the date 45CSR 21 becomes effective. The proposed changes to R13-0882L do not include an increase of VOC's greater than 6 pph.

This class II permit amendment application is being filed under 45CSR13 since a

change in batch production is being requested. Overall, VOC emissions will be 0.03 tons/year, HAP emissions will be 0.46 tons/year, and PM emissions associated with the sources identified in this application will be 0.04 tons/year.

TOXICITY OF CRITERIA REGULATED POLLUTANTS

p-Xylene has the following exposure limits:

ACGIH TLV

100 ppm TWA
125 ppm STEL/C

NIOSH REL

100 ppm TWA
435 mg/m³ TWA
150 ppm STEL
655 mg/m³ STEL

OSHA PEL

100 ppm
435 mg/m³

Toluene has the following exposure limits:

ACGIH TLV

20 ppm TWA
75 mg/m³ TWA

NIOSH REL

100 ppm TWA
375 mg/m³ TWA
150 ppm STEL
560 mg/m³ STEL

OSHA PEL

200 ppm TWA
300 ppm Ceiling
500 ppm Peak (10 minutes)

MONITORING OF OPERATIONS

The Title V Permit provides monitoring requirements due to opacity readings. The facility is already required to monitor visible emissions (Condition 4.2.2), monitor their production (Condition 4.2.1), monitor the temperature of the incinerator (Condition 4.2.3), and monitor the pH and flow rate of the scrubbers (Condition 4.2.4).

Changes to R13-0882L include:

1. Updated the Permit Number to R13-0882L.
2. Added a Double Cone Dryer (230), Condenser (232C), Reactors (232 and 233), DCD Super Sack/Drum Loading (234), DCD Super Sack/Drum Unloading, and an already existing Tank Loading (108L) to the equipment table.
3. Added Condition 4.1.2.11.1 to require that the Dust Collector (117) be used when either the DCD Super Sack Loading (234) or DCD Super Sack Unloading (235) are being operated.
4. Added Condition 4.1.2.11.2 to require that the incinerator (009) and scrubber (010) be used at emission point 114.014 during all periods of either refining Catofin, refining SR-1000, or production of T2960. A limit for the total batches of each has also been added.
5. Added Condition 4.1.2.11.3 to require specific emissions limits for Particulate Matter, VOC's, p-xylene, and toluene for Catofin refinement, SR-1000 refinement, and T2960 production.
6. Updated the page numbers in the Table of Contents.
7. Added "R13-0882L" to Condition 2.5.1.

RECOMMENDATION TO DIRECTOR

Permit application, R13-0882L, submitted by Optima Belle, LLC, for the administrative permit update of the production facility located at the Belle Plant in Belle, Kanawha County, WV, has been reviewed and determined to meet all applicable requirements, and is therefore, recommended for approval.

Mike Egnor
Engineer

Date

Fact Sheet R13-0882L
Optima Belle, LLC
Belle Plant