DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P102857724

FACILITY: Corteva Agriscience LLC		**SRN / ID:** P1028
LOCATION: 701 Washington Street, MIDLAND		**DISTRICT:** Bay City
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Patty Worden , Senior Environmental Specialist		**ACTIVITY DATE:** 03/16/2021
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: EU09 on site inspection portion of FCE		
RESOLVED COMPLAINTS:		

EU9 is a multi-product herbicide formulation and packaging process, including raw material storage and handling, active ingredient finishing, formulations, and packaging associated with 489 Building. The process receives raw materials by rail cars, tank trucks, pipelines, and drums. Finishing operations include transforming active ingredients into salts or esters, as well as solidification and flaking. Formulation operations include mixing and blending active ingredients with other materials to meet final product specifications. Packaging operations involve portable containers, drums, and bulk packaging.

EU9 was permitted by PTI #98-05. The emission unit is subject to the requirements of 40 CFR Part 63, Subparts A, MMM, EEEE, and FFFF. In addition, processes subject to MMM and FFFF are also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks) as specified in Section 63.1363(b), as applicable.

Emissions reported for 2020 in MAERs from EU9 were 53 lbs PM and 3,313 lbs VOC.

At the time of the inspection EU9 emissions were controlled by a packed tower, scrubbing with caustic soda solution (Flaker Production and Packaging Scrubber), a reverse pulse jet fabric filter (Flaker Production and Packaging Filter), and a packed tower water scrubber (Amine Process Scrubber).

A pre-inspection overview was provided on March 9, 2021 that covered the process flow diagram, control devices and review of emission calculations including example monthly production for monthly and 12 month rolling materials and emission limit compliance records.

During the March 16, 2021 on site visit the ROP required emission control and metering devices, vents, and real time process screens were viewed. On site records were provided for VOC and toxic screening level based emissions. Process and control device status and operating parameters records were also provided .

At the time of the inspection the facility appeared to be in compliance with the requirements of the EU9 ROP conditions.

<u>On Site Records Review</u>

Flaker particulate filter (SVEG9V48) Differential Pressure Drop

Flaker packing scrubber (SVEG9V47) Liquid Flow rate

Amine water scrubber liquid flow rate(SVEG9V51)

Instrumentation calibration dates

TAC emissions for Amine Scrubber emissions and Formulation process

AQD File Review

ROP Semi annual Deviation report March 2020, Sept 2020,March 2021

MACT Reports Subpart PAI Sept 2020, March 2021.

MACT Reports Subpart MON Sept 2020, March 2021.

Description

489 building has four independent single mode operating scenario process units: 2,4-D ester, 2,4-D DMA, 2,4-D TIPA, and 2,4-D choline. There are 70 vents from EU9 processes and activities. Formulation and Flaker process mixes/blends materials followed by evaporation followed by flaker operation then product storge and packaging. The 2,4-D Formulation and Flaker process evaporator vents to the T-1103 scrubber (AI_733). Product storage and packaging operations exhaust to FL-1201 dust collector or vent to air. The 2,4-D DMA process mix tanks H24 and H25 and R-301 reaction vessel vents to Amine scrubber (AI -405). The 2,4-D ester process uses recovery and only vents uncontrolled when over pressured. The 2,4-D TIPA reaction vessels and storage vent to air. The 2,4-D choline FAO/DMA process was last run in 2019 and had vented to V-1103 Flaker scrubber. EU03 now makes 2,4-D chloline.

Emissions

Emission calculations were developed using worse case (highest emissions) when the 2005 PTI application was submitted. The calculations were reviewed and updated about 5 years ago.

Emissions (limit)	Oct 2019	July 2020 lbs/month	Jan 2021
Cat 1 TAC (139 lbs/yr)	Viewed on site	None	Viewed on site
Cat 2 TAC (695 lbs/yr)	Viewed on site	4.11	Viewed on site
Category 3 (6950 lbs/yr)		117.41	
Category 4 (12,000 lbs/yr)		2.33	
Cat 5 TAC (12,000 lbs/yr)	Viewed on site	4.92	Viewed on site
Category 6 (12,000 lbs/yr)		3.05	

Month	Total VOCs (lb/month)	Total VOCs	Total VOCs and Perc	Total VOCs and Perc
July 2020	193.7	1000 lbs/month limit	305.2	10 lbs/hr limit

Particulate emissions come from the loading of supersacks into several vessels. Calculations from tracked gallons of product made during the month apply product density and weight fraction of solids for each product. The Formulation and flaker operations assume 24 hour emissions from formulation/evaporator emissions and 8 hour emissions daily form storage and packaging operations.

During the on site inspection categorical emission totals for the EU9 portion of Formulations emissions were viewed in detail and verified that Totals matched the recorded values used in reported emissions. For the months reviewed total TAC emissions for Amine Scrubber emissions and Formulation process 12 Month TAC (lbs) ranged from 24 pounds to 649 pounds. The 12 Month TAC values (lbs) of example Amine Scrubber emissions and Formulation emissions are below.

Month	Total TACs (lb/month)	Total TACs 12 month rolling (lb/month
Oct 2019	313.0	4405.81
July 2020	24.2	3206.5
January 2021	397.9	2983.9

Material limits

The ROP does not list any specified material limits.

Process/Operational limits

The ROP does not list any specified material limits.

Design and Equipment Parameters

SC.1 prohibits operation of portions of EU9 that vent to the Flaker particulate filter (SVEG9V48) unless the particulate filter is operating satisfactorily.

Item	AI or other ID	Oct 31, 2019 2-6 PM	July 20, 2020 2-6 PM	Jan 13, 2021 6-10 AM	Mar 16, 2021	Last calibration
Flaker particulate filter (SVEG9V48)	780		0.22 dp at	0.76 dp at 4:22 AM	1.8 dp	Sept 20, 2020

SC IV 4., SC VI.1 Differential Pressure Drop inches H2O, (mnf rec or good engineer) Differential Pressure H2O		0.187 dP at 2 PM and 0.33 dp at 6 PM	2 PM and 0.15 dp at 6 PM	and 0.7 dp at 12:27 PM		

Min and Max operating range established: 0.08 to 35 inches H2O, shutdown at 0.08 dp.

During the inspection we viewed the Flaker particulate filter including the vent from the location where on site personnel make required VE observations. Records from VE observations conducted during particulate emitting operations were reviewed and are attached.

SC. 2 prohibits operation of portions of EU9 that vent to the Flaker Production and Packing Scrubber (SVEG9V47) unless the scrubber is operating satisfactorily.

Item	AI or other ID	Oct 31, 2019 2-6 PM	July 20, 2020 2-6 PM	Jan 13, 2021 6-10 AM	Mar 16, 2021	Last calibration
Flaker packing scrubber (SVEG9V47) SC IV 5., SC VI.3 Liquid Flow rate (10 gpm minimum)	733	20.8 gpm at 2 PM and 20.9 gpm at 6 PM	20.2 gpm at 2 PM to 19.9 at 6 PM	20.3 gpm at 4:22 AM to 20 gpm at 12:27 PM	20 gpm	Sept 18, 2020

Scrubber medium flow rates operating range established: Alarm at 14 gpm, shutdown at 10 gpm.

SC. 3 prohibits operation of portions of EU9 that vent to the Amine Process Scrubber (SVEG9V51) unless the scrubber is operating satisfactorily.

Item	AI or other ID	Oct 31, 2019 2-6 PM	July 20, 2020 2-6 PM	Jan 13, 2021 6-10 AM	Mar 16, 2021	Last calibration
Amine water scrubber liquid flow rate(SVEG9V51) SC IV.6,SC VI.3 (2 gpm minimum)	405	3.95 gpm at 2 PM and 3.94 gpm at 6 PM	4.03 gpm at 2 PM to 4.01 at 6 PM	4.02 gpm at 4:22 AM to 4.0 gpm at 12:27 PM	3.97 gpm	Sept 18, 2020

Scrubber medium flow rates operating range established: Alarm at 2.5 gpm, shutdown at 2.0 gpm.

Testing/Sampling

The ROP does not list any specified testing or sampling in EU9.

Monitoring and Recordkeeping

SC 1. The facility monitored and recorded the pressure drop across Flaker Production and Packing Particulate Filter (SVEG9V48) as required.

SC.2 The facility monitored and recorded the VE from Flaker Production and Packing Particulate Filter (SVEG9V48) as required. No actions were needed.

SC 3. The facility monitored and recorded the scrubbing medium flow rates for the Flaker Production and Packing Scrubber (SVEG9V47) and the Amine Process Scrubber (SVEG9V51) as required.

SC 4. The facility maintained a list of materials used in EU9 as required.

SC 5. The facility maintained a record showing the worst case dispersion analysis for EU9 as required.

SC 6. and SC 7. The facility recorded the pressure drop across Flaker Production and Packing Particulate Filter (SVEG9V48) as required. No actions were needed.

SC 8. The facility recorded the scrubbing medium flow rates for the Flaker Production and Packing Scrubber (SVEG9V47) and the Amine Process Scrubber (SVEG9V51) as required. One action was reported in response to venting from the 2,4-D choline emergency vent. The Set pressure on the relief valve R4040 was increased to >1 lb (DOI 345). Emissions were included in the monthly emission totals.

SC.9 The facility calculated and emissions of VOCs and TAC that showed compliance with the emission limits in EU9.

Stack/Vent Restrictions

The EU9 process has 70 vents associated with operations. A list and description of SVEG9A1 through SVEG9A70 vents is attached.

Deviation and MACT reports review

March 2021/Sept 2020:

No ROP Deviations reported for EU9

FFFF No deviations, no SSM, no leaks (no Group 1 applicable)

MMM No Excess Emissions or parameter excursions, no monitoring downtime, no malfunctions,

MACT Subject process operating hours Jan – June: 4224, July – Dec 2020: 4416

March 2020/Sept 2019:

No ROP Deviations reported for EU9.

NAME Kathy Brewer DATE 8/23/2021 SUPERVISOR Chris Hare