Statement of Basis

Permit to Construct No. P-2020.0012
Project ID 62409

Amvac Chemical Corporation
Marsing, Idaho

Facility ID 073-00016

Final

June 26, 2020
Joe Palmer
Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
DEQ	Department of Environmental Quality
EL	screening emission levels
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hr/yr	hours per consecutive 12 calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O_2	oxygen
PC	permit condition
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SCL	significant contribution limits
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
VOC	volatile organic compounds

FACILITY INFORMATION

Description

This is an initial permit to construct (PTC) for the existing Amvac Chemical Corporation (Amvac) facility. Amvac is a formulating and packaging facility of various chemicals with formulation capabilities of flowable products and products in seed treatment. Amvac formulates and packages numerous insecticides, fungicides, and herbicides. They are either powders, pellets or flowables. All chemicals/products are controlled by Donaldson Torit filtration, a Mac Flo filter, or a baghouse. Amvac reviewed all the potential emissions and requested a PTC due to an increase in uncontrolled (i.e., assuming existing control equipment is not operated) potential toxic air pollutant (TAPs) emissions. Previously, Amvac was exempt from permitting requirements.

Permitting History

This is the initial PTC for an existing facility that was constructed between 1975 and 1978. Thus there is no permitting history.

Application Scope

This permit is the initial PTC for this facility.

Application Chronology

March 10, 2020	DEQ received an application and an application fee.
March 18 – April 2, 2020	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
April 9, 2020	DEQ determined that the application was complete.
May 19, 2020	DEQ made available the draft permit and statement of basis for peer and regional office review.
May 29, 2020	DEQ made available the draft permit and statement of basis for applicant review.
June 22, 2020	DEQ received the permit processing fee.
June 26, 2020	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
1	Insecticides & Fungicides:	Insecticides & Fungicides (4) Mac Flo Filtration Units: Manufacturer: Donaldson Torit Model: USAF-C0080-2-L Filter Type: ProTura Nanofiber PM_{10} control efficiency: 98.3%	Exit height: 20 ft Exit diameter: 6 in Exit flow rate: 1,200 acfm Exit temperature: ambient
2	Herbicides:	Herbicides Mac Flo Filtration Unit: Manufacturer: Donaldson Torit Model: USAF-C0080-2-L Filter Type: ProTura Nanofiber PM_{10} control efficiency: 98.3%	Exit height: 20 ft Exit diameter: 8 in Exit flow rate: 2,000 acfm Exit temperature: ambient
3	Flour Processing:	Flour Baghouse: Manufacturer: Donaldson Torit Model: 16 oz Polyester Type: Polyester Needle Punched Felt PM_{10} control efficiency: 99.8%	Exit height: 21 ft Exit diameter: 30 in Exit flow rate: 10,000 acfm Exit temperature: ambient

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the four insecticide & fungicide Mac Flo filtration units, one herbicide Mac Flo filtration unit, and one flour processing baghouse operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, HAP PTE were based on emission factors from AP-42, operation of 8,760 hours per year, and process information specific to the facility for this proposed project.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this chemical formulating operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr (24 hr/day x 365 day/yr).

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{2.5}$	PM_{10}	SO_2	NO_X	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
Insecticides & Fungicides	22.4	22.4	0.00	0.00	0.00	0.00
Herbicides	8.80	8.80	0.00	0.00	0.00	0.00
Flour Processing	13.80	433.50	0.00	0.00	0.00	0.00
Total, Point Sources	**45.00**	**464.70**	**0.00**	**0.00**	**0.00**	**0.00**

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this chemical formulation operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr (24 hr/day x 365 day/yr). Then, the worst-case maximum HAP Potential to Emit was determined for this chemical formulation operation.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants	PTE (T/yr)
Pentachloronitrolbenzene	34.21
Hexachlorobenzene	0.089
Total	**34.30**

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{2.5}$		PM_{10}		SO_2		NO_X		CO		VOC	
	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]
Insecticides & Fungicides	0.07	0.38	0.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Herbicides	0.07	0.13	0.07	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flour Processing	0.004	0.017	0.124	0.542	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Totals	**0.14**	**0.53**	**0.26**	**1.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 2 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		PM_{10}		SO_2		NO_X		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Potential to Emit	0.14	0.53	0.26	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Changes in Potential to Emit	**0.14**	**0.53**	**0.26**	**1.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Metribuzin	0.00E-03	1.314E-01	0.1314	0.333	No
Thiram	0.00E-03	1.342E-01	0.1342	0.333	No

All changes in emissions rates for non-carcinogenic TAP were below EL (screening emissions level) as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

Carcinogenic TAP Emissions

The facility emits no carcinogenic TAPs emissions.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (lb/hr)	PTE (T/yr)
Pentachloronitrolbenzene	3.32E-02	4.85E-02
Hexachlorobenzene	6.55E-06	2.87E-05
Totals	**0.03**	**0.05**

Ambient Air Quality Impact Analyses

Because facility-wide emission rates of criteria pollutants $PM_{2.5}$ and PM_{10} were below the "below regulatory concern" (BRC) threshold levels of less than 10% of "significant" emission rates for criteria pollutants defined in IDAPA 58.01.01.006, and because no TAP exceeded EL, no ambient air quality impact analysis was required.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Owyhee County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.

SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.

SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.

UNK = Class is unknown.

For All Other Pollutants:

A = Use when permitted emissions of a pollutant are > 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

Table 8 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	464.70	1.07	**100**	SM
PM_{10}	464.70	1.07	**100**	SM
$PM_{2.5}$	45.0	0.53	**100**	B
SO_2	0.00	0.00	**100**	B
NO_X	0.00	0.00	**100**	B
CO	0.00	0.00	**100**	B
VOC	0.00	0.00	**100**	B
HAP (Pentachloronitrolbenzene)	34.21	0.05	**10**	SM
HAP (Hexachlorobenzene)	0.089	0.00003	**10**	B
Total HAPs	34.30	2.72003	**25**	SM

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201... Permit to Construct Required

The permittee has requested that a PTC be issued to the existing facility for the chemical formulation operation emission sources. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Odor Rules (IDAPA 58.01.01.776)

IDAPA 58.01.01.776.01...................................... General Restrictions (for Odors)

No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.7, 3.7, and 4.4.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO, VOC, and HAP or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 .... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements 40 CFR Part 60.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT/GACT Applicability (40 CFR 63)

The proposed source is not an affected source subject to NESHAP in 40 CFR Part 63, and this permitting action does not alter the applicability status of existing affected sources at the facility.

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Initial Permit Condition 2.1

Includes the process description.

Initial Permit Condition 2.2

Control device description. There are four separate Mac Flo filtration units used for controlling the emissions of the formulating processes for insecticides and fungicides.

Initial Permit Condition 2.3

Lists the PM emissions limits according to the *Rules* for the insecticides and fungicides production.

Initial Permit Condition 2.4

As requested by the applicant this permit condition limits TAP emissions rates to below the screening emission level multiplied by 24, for TAPs listed in Section 585 and for the TAPs listed in Section586 of the rules, or below the emission rate that would cause an ambient impact to exceed the acceptable ambient concentration for that TAP. Daily emissions of equal to or less than the EL times 24 assures that maximum 24-hour average emissions rates are below the EL for TAPs listed in Section 585 and 586 of the Rules. If emissions exceed the EL times 24 then the facility shall model emission rates to determine ambient impacts. In the application for this permit the facility presented an emission inventory that demonstrated that Hexachlorobenzene, Metribuzin, Pentachloronitrobenzene, and Thiram emissions exceeded the screening emissions levels (ELs). The applicant calculated the proposed emission rates and showed the ambient impacts were below the corresponding acceptable ambient concentrations for each pollutant listed in Section 585 & 586 of the rules thereby demonstrating compliance in accordance with IDAPA 58.01.01.210.08. If new TAP-containing products are introduced into production, a permit modification will not be required. New regulated TAP controlled usage will be evaluated and/or calculated as needed prior to implementation to ensure compliance with the Permit Condition 2.4.

Initial Permit Condition 2.5

The emission inventory provided in the application shows that the facility has an uncontrolled potential to emit HAPs greater than major facility thresholds. This permit condition limits the potential to emit below major facility thresholds for HAPs.

Initial Permit Condition 2.6

This permit condition includes the odor regulation of IDAPA 58.01.01.776.01.

Initial Permit Condition 2.7

Includes the *Rules* opacity standard.

Initial Permit Condition 2.8

Limits the sources' production consistent with the limitations used to calculate annual emissions in the application. Any increase of production due solely to a relaxation of a permit condition may require a new permit analysis. New calculations would be required if facility-wide particulate matter emissions equal or exceed 10% of what is defined as significant.

Initial Permit Condition 2.9

Requires monitoring of source operations to assure compliance the annual limits listed in this permit. The permit requires monitoring of the number of batches during which production occurred.

Initial Permit Condition 2.10

This permit condition includes DEQ's standard language regarding responding to any odor complaints that may be received.

Initial Permit Condition 2.11

This permit condition includes DEQ standard permit language for monitoring to assure fugitive emissions are reasonably controlled.

Initial Permit Condition 3.1

Includes the process description.

Initial Permit Condition 3.2

Control device description. There is one Mac Flo filtration units used for controlling the emissions of the formulating processes for the herbicides.

Initial Permit Condition 3.3

Lists the PM emissions limits according to the Rules for the herbicides production.

Initial Permit Condition 3.4

As requested by the applicant this permit condition limits TAP emissions rates to below the screening emission level multiplied by 24, for TAPs listed in Section 585 and for the TAPs listed in Section586 of the rules, or below the emission rate that would cause an ambient impact to exceed the acceptable ambient concentration for that TAP. Daily emissions of equal to or less than the EL times 24 assures that maximum 24-hour average emissions rates are below the EL for TAPs listed in Section 585 and 586 of the Rules. If emissions exceed the EL times 24 then the facility shall model emission rates to determine ambient impacts. In the application for this permit the facility presented an emission inventory that demonstrated that Hexachlorobenzene, Metribuzin, Pentachloronitrobenzene, and Thiram emissions exceeded the screening emissions levels (ELs). The applicant calculated the proposed emission rates and showed the ambient impacts were below the corresponding acceptable ambient concentrations for each pollutant listed in Section 585 & 586 of the rules thereby demonstrating compliance in accordance with IDAPA 58.01.01.210.08. If new TAP-containing products are introduced into production, a permit modification will not be required. New regulated TAP controlled usage will be evaluated and/or calculated as needed prior to implementation to ensure compliance with the Permit Condition 3.4.

Initial Permit Condition 3.5

The emission inventory provided in the application shows that the facility has an uncontrolled potential to emit HAPs greater than major facility thresholds. This permit condition limits the potential to emit below major facility thresholds for HAPs.

Initial Permit Condition 3.6

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 3.7

Includes the *Rules* opacity standard.

Initial Permit Condition 3.8

Limits the sources' production consistent with the limitations used to calculate annual emissions in the application. Any increase of production due solely to a relaxation of a permit condition may require a new permit analysis. New calculations would be required if facility-wide particulate matter emissions equal or exceed 10% of what is defined as significant.

Initial Permit Condition 3.9

Requires monitoring of source operations to assure compliance the annual limits listed in this permit. The permit requires monitoring of the number of batches during which production occurred.

Initial Permit Condition 3.10

This permit condition includes DEQ's standard language regarding responding to any odor complaints that may be received.

Initial Permit Condition 3.11

This permit condition includes DEQ standard permit language for monitoring to assure fugitive emissions are reasonably controlled.

Initial Permit Condition 4.1

Includes the process description.

Initial Permit Condition 4.2

Control device description. A baghouse controls the emissions of the flour used for formulating the insecticides, fungicides, and herbicides.

Initial Permit Condition 4.3

Lists the PM emissions limits according to the *Rules* for the flour processing.

Initial Permit Condition 4.4

Includes the *Rules* opacity standard.

Initial Permit Condition 4.5

Limits the sources' production consistent with the limitations used to calculate annual emissions in the application. Any increase of production due solely to a relaxation of a permit condition may require a new permit analysis. New calculations would be required if facility-wide particulate matter emissions equal or exceed 10% of what is defined as significant.

Initial Permit Condition 4.6

Ensures the baghouse is functioning properly (e.g. clean bags, properly functioning fan, free flowing ductwork).

Initial Permit Condition 4.7

Requires monitoring of source operations to assure compliance the annual limits listed in this permit. The permit requires monitoring of the number of tons during which production occurred.

Initial Permit Condition 4.8

Requires monitoring of the baghouse pressure drop to assure compliance with the annual limits listed in this permit.

Initial Permit Condition 4.9

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 4.10

This permit condition includes DEQ standard permit language for monitoring to assure fugitive emissions are reasonably controlled.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

Stantec Consulting Services Inc.
727 East Riverpark Lane Suite 150, Boise ID 83706-4089

March 10, 2020
File: 203701094

Attention: Darrin Pampaian, P.E.
1410 North Hilton Street
Boise, Idaho 83706

Dear Mr. Pampaian,

Reference: Amvac Chemical PTC Application and Exemption Letter

Amvac Chemical Corporation (Amvac) is proposing to acquire an initial Permit to Construct (PTC) for its existing facility located at 6556 Simpkin Lane Marsing, Idaho. AMVAC is a formulating and packaging facility of various chemicals with formulation capabilities of flowable products and products in seed treatment. Amvac formulates and packages numerous insecticides, fungicides, and herbicides. They are either powders, pellets or flowables. All chemicals/products are controlled by a baghouse or Donaldson Torit filtration. Amvac reviewed all the potential emissions and submits this application due to an increase in uncontrolled (i.e., assuming existing control equipment is not operated) potential toxic air pollutant (TAPs) emissions. Previously, Amvac was exempt from permitting requirements. Based on our understanding of the facility's process, emissions and the Idaho exemption rules, Amvac does not require an air quality permit for the process lines that include only criteria pollutants. As discussed in the associated Permit to Construct application, other process lines that contain state-regulated toxic air pollutants require a permit.

A full pdf version of the application, a signed GI form and emission inventory are available the OneDrive link that has been emailed to you. Also, the $1,000 application fee will be dropped off this afternoon. All content of this application is true, accurate and complete to the best of the Amvac and Stantec's knowledge in accordance with IDAPA 58.01.01.123.

Regards,

Stantec Consulting Services Inc.

Eric E. Clark

Eric Clark P.E.
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Permit-to-Construct Initial Permit Application

Amvac Chemical Corporation
Marsing Facility

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Contact: Dennis Achey
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March 10, 2020

Sign-off Sheet

This document entitled Permit-to-Construct Initial Permit Application was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Amvac Chemical Corporation (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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Jen Cole, E.I.T.

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LIST OF APPENDICES

1.0 INTRODUCTION

Amvac Chemical Corporation (Amvac) is proposing to acquire an initial Permit to Construct (PTC) for its existing facility located at 6556 Simpkin Lane Marsing, Idaho. AMVAC is a formulating and packaging facility of various chemicals with formulation capabilities of flowable products and products in seed treatment. Amvac formulates and packages numerous insecticides, fungicides, and herbicides. They are either powders, pellets or flowables. All chemicals/products are controlled by a baghouse or Donaldson Torit filtration. Amvac reviewed all the potential emissions and submits this application due to an increase in uncontrolled (i.e., assuming existing control equipment is not operated) potential toxic air pollutant (TAPs) emissions. Previously, Amvac was exempt from permitting requirements.

2.0 PROCESS DESCRIPTION

There is one distinct process that this facility engages in that emits toxic pollutants:

> Flowable or suspendable concentrates (SC) that comprise of adding an active ingredient (AI) into a liquid emulsion; used to formulate seed coatings, foliar sprays, in-furrow fungi or insecticide control as well as to formulate SCs for the control of weeds.

With reference to the formulation/production of flowables, an active ingredient is introduced through an opening in the top of the mix tank; the dust is controlled by the negative pressure air flow generated by the individual dust collection unit connected to each mix tank.

2.1 EMISSIONS SOURCES

Emissions sources at the facility will include the following:

* Powdered insecticides, fungicides, and herbicides

Powdered Chemicals

The Amvac facility develops several powdered insecticides, fungicides, and herbicides. All chemicals are formulated with a ratio of 30-40% powder with a mixture of water and other inert liquids. They are developed in flowable single batches of approximately 3,000 gallons. Emissions from each fungicide/insecticide batch are controlled by a Donaldson Torit filter. The minimum manufacturer control efficiency is 98.3% for $PM_{2.5/10}$, respectively. The facility operates four Donaldson Torit control units. Additionally, there is a Mac Flo control filter, also with a manufacturer efficiency of 98.3% that operates for all herbicide flowables.

Each controlled batch for either herbicide or fungicide/insecticide operates for 90 minutes. Amvac has conducted operating tests to determine how much powder is captured during each batch run regardless of chemical flowable. Internal test results demonstrated that six pounds of powder was retained in each batch.

Additionally, appropriate Safety Data Sheets (SDS) were evaluated to ensure proper amounts of state regulated TAPs and federally regulated hazardous air pollutants (HAPs) were determined. Amvac contains 23 powdered chemicals, four of which contain a HAP and /or TAP. All particulate emissions are discussed in the associated exemption letter.

2.1.1 Controlled Emission Totals

All emissions were established by obtaining total number of batches for specific powders which include HAPs/TAPs, total facility-wide number of annual batches, SDS data (refer to Appendix E) and annual flour usage rates. All powder emissions have a tested capture amount of 6 lb/batch from testing results with a manufacturer control efficiency of 98.3% for $PM_{2.5}$/PM_{10}. Therefore, 1.7%

is the maximum emitted into the atmosphere per batch and each batch runs for a total of 90 minutes. It is also based on that a single batch of any one powder was developed in a day.

Actual and requested permitted emissions were also determined from the 8.14 lb/hr rate associated with the various powder per batch, number of total batches and control efficiencies of the Donaldson Torit units.

The 8.14 lb/hr was determined by dividing 6.102 lb by 1.5 hr with the capability of running one process lines simultaneously (6.012 / 1.5 * 2). Note that the additional 0.102 lb equates to the 1.7% not captured during the batch runs (minimum control is 98.3%). Amvac currently uses 23 products. Of those 23, only four products contain state regulated TAPs and one is the flour pellets associated with the baghouse. These four TAP products include: Thiram, PCNB, Dacthal and Metribuzin. An annual pound total was determined for the four based on the proposed maximum number of batches. This was done to accurately calculate the total amount of TAPs. The remaining 19 only contain PM. Refer to the exemption letter for details regarding PM emissions.

Total federally regulated HAPs are minimal. Only the Dacthal (hexachlorobenzene) and PCNB (pentachloronitrobenzene and hexachlorobenzene) contain HAPs.

2.1.2 Proposed Batches and Flour Usage Rate

The emissions determined for this application are based on usage for specific daily/annual batch numbers for Dacthal (50 per year), PCNB (4 per day), Metribuzin (16 per day) and Thiram (16 per day). Note that the metribuzin is always mixed with flumioxazin and pyrosulfone at a ratio of 1/3 each. However, to ensure maximum conservatism, the TAPs calculation assumes 100% metribuzin. The total HAPs are limited by default because of the proposed limitations on the Dacthal and PCNB because of TAPs emissions.

As discussed above, each batch is 90 minutes. Therefore, the maximum hours of PCNB will operate is 6 hours each day to remain below the screening emission level (EL). Metribuzin or Thiram can operate continuously and remain below the EL.

2.1.2.1 Actual Emission Totals

The Table 2-1 below illustrates the actual proposed annual emissions based on desired usage rates.

Table 2-1 Controlled Actual Emission Estimates

TAP/HAP	Max lb/hr	Ton/yr
Pentachloronitrobenzene	0.13	4.85E-02
Hexachlorobenzene	3.46E-04	2.87E-05
Thiram	0.13	1.96E-01
Metribuzin	0.13	1.96E-01
Total*	**0.13**	**0.44**

* Maximum of 2 batches per hr.

The following assumptions were applied to obtain the estimates shown above.

- Powder Batches
    - Filter Cartridge Control from U.S. Air Filtration (MERV 15)
        - 98.3% control – $PM_{2.5}$/PM_{10}
    - Test data results captured during each batch
    - Particulate distribution
        - PM_{10} – 50% and $PM_{2.5}$ – 50% (estimated to be equivalent)
- Powder Batches Containing HAPs/TAPs
    - PCNB (585) – 4 batches/day
    - Thiram (585) – 16 batches/day
    - Dacthal (586) – 50 batches/yr
    - Metribuzin (585) – 16 batches/day
    - Applicable SDS percentage for each constituent

2.2 BELOW REGULATORY CONCERN EVALUATION

The Idaho Department of Environmentally Quality (DEQ) Air Quality Rules identify a threshold known as Below Regulatory Concern (BRC). It is defined as less than 10% of significant as defined by section 006 of the Rules. BRC typically applies only for exception determinations outlined in Sections 220-223 of IDAPA 58.01.01. However, DEQ has instituted a policy whereby facilities can demonstrate BRC status for specific criteria pollutants and not be required to conduct an ambient air quality analysis for said pollutants.

All controlled criteria pollutants are less than BRC. Therefore, exemption status is met per IDAPA 58.01.01.221(see associated letter). However, to completely exempt out of requiring a permit, uncontrolled toxic air pollutant emissions must be below the applicable screening level or associated acceptable concentration as defined in IDAPA section 58.01.01.210. It has been determined that calculated uncontrolled (i.e., if existing controls are not operated) TAP PTE rates do not meet these criteria. As a result, controls are warranted, and as shown below, existing controls are adequate. For

2.2.1 Toxic Air Pollutants

As described above, there are four powders that contain state regulated TAPs. All four uncontrolled maximum emissions exceed the applicable emission screening level. However, the actual controlled emissions are less than the emission screening level. Table 2-2 below identifies those pollutants and whether they are regulated by IDAPA 58.01.01.585 or 586.

Table 2-2 Toxic Air Pollutants

TAP	585/586[1]	Uncontrolled Emission Estimate (lb/hr)	Controlled Emission Estimate (lb/hr)	EL (lb/hr)	% of EL - Controlled
Pentachloronitrobenzene	585	7.81	3.32E-02	3.33E-02	99.68
Hexachlorobenzene	586	2.03E-02	6.55E-06	1.30E-05	50.40
Thiram	585	7.89	1.34E-01	3.33E-01	40.29
Metribuzin	585	7.73	1.31E-01	3.33E-01	39.46

1. Note that IDAPA 58.01.01.585 is a lb/hr average on a 24-hr basis and 586 is an lb/hr average on an annual basis.

2.2.2 Proposed Permit Conditions for TAPs

Amvac proposes the following or similar language to address these four TAPs, while also ensuring that, if new TAP-containing products are introduced into production, a permit modification is not required. And new regulated TAP controlled usage will be evaluated and/or modeled as needed prior to implementation to ensure compliance with the below-recommended language.

For each calendar day, TAPs emissions from powdered based herbicides, insecticides or fungicides shall not exceed an applicable EL (lb/hr) multiplied by 24 (for TAPs listed in both IDAPA 58.01.01.585 and 586) or acceptable ambient concentration (mg/m^3) (for TAPs listed in IDAPA 58.01.01.585) or acceptable ambient concentration for carcinogens (µg/m^3) (for TAPs listed in IDAPA 58.01.01.586).

3.0 REGULATORY APPLICABILITY

A review of applicable State and Federal Rules for each emissions unit is provided in Sections 3.1 and 3.2 below.

3.1 STATE REGULATORY APPLICABILITY

A review of applicable requirements of the Rules for the Control of Air Pollution in Idaho is provided in Table 3-1. Each regulation is described in the sections following the table.

Table 3-1 State Regulatory Applicability Summary

Section	Description	Regulatory Citation	Applicable?
3.1.1	Certification of Documents	IDAPA 58.01.01.123	Yes
3.1.2	Excess Emissions	IDAPA 58.01.01.130-136	Yes
3.1.3	Ambient Air Quality Standards for Specific Air Pollutants	IDAPA 58.01.01.577	Yes
3.1.4	Toxic Air Pollutants	IDAPA 58.01.01.585 and 586	Yes
3.1.5	New Source Performance Standards	IDAPA 58.01.01.590	No
3.1.6	National Emissions Standards for Hazardous Air Pollutants	IDAPA 58.01.01.591	No
3.1.7	Open Burning	IDAPA 58.01.01.600-616	Yes
3.1.8	Visible Emissions	IDAPA 58.01.01.625	Yes
3.1.9	Rules for Control of Fugitive Dust	IDAPA 58.01.01.650	Yes
3.1.10	Fuel Burning Equipment – Particulate Matter	IDAPA 58.01.01.675-681	No
3.1.11	Particulate Matter – Process Weight Limitations	IDAPA 58.01.01.701	No
3.1.12	Odors	IDAPA 58.01.01.775-776	Yes

3.1.1 Certification of Documents

IDAPA 58.01.01.123 requires all documents including application forms for permits to construct, records, and monitoring reports submitted to DEQ shall contain a certification by a responsible official. Amvac will comply with this requirement and the appropriate certifications by a responsible official are being submitted with this application.

3.1.2 Excess Emissions

IDAPA 58.01.01.130-136 requires that any episode of excess emissions be reported to DEQ where appropriate. Amvac will abide by all excess emission requirements.

3.1.3 Ambient Air Quality Standards for Specific air Pollutants

IDAPA 58.01.01.577 establishes ambient air quality standards for specific air pollutants including $PM_{2.5/10}$, Sulfur Dioxide, Ozone, Nitrogen Oxide, Carbon Monoxide, and Lead. Facility-wide modeling was not conducted for criteria pollutants as described in Section 2.2. Additionally, four screening levels of toxics were not exceeded. Specific details regarding emission calculations is included in Appendix C of this application.

3.1.4 Toxic Air Pollutants

IDAPA 58.01.01.585 and 586 establishes requirements for compliance with toxic air pollutants. Amvac evaluated all toxic pollutants associated with the increase and have demonstrated compliance with the standards or appropriate modeling was conducted. Please refer to Section 2.2.1 of this document for details.

3.1.5 New Source Performance Standards

New Source Performance Standards (NSPS) in 40 CFR Part 60 are applicable to new, modified, or reconstructed stationary sources that meet or exceed specified applicability thresholds. There are no processes performed by Amvac that fall under any NSPS requirements.

3.1.6 National Emission Standards for Hazardous Air Pollutants

Two sets of National Emissions Standards for Hazardous Air Pollutants (NESHAPs) may potentially apply to the Amvac facility. The first NESHAP regulations were developed under the auspices of the original Clean Air Act. These standards are codified in 40 CFR Part 61 and address a limited number of pollutants and industries. The Amvac facility does not fall under any of the industries or have the potential to emit any of the pollutants listed in 40 CFR Part 61, and therefore, 40 CFR Part 61 regulations do not apply to this facility.

Newer regulations are codified in 40 CFR Part 63 under the authority of the 1990 Clean Air Act Amendments. These standards regulate HAP emissions from specific source categories. Part 63 regulations are frequently called Maximum Achievable Control Technology (MACT) standards. There are no processes performed by Amvac that fall under any MACT requirements.

3.1.7 Open Burning

IDAPA 58.01.01.600 and 616 establishes requirements for open burning. Amvac does not expect to conduct open burning at the facility; however, Amvac will comply with the requirements under Section 600-616 if any allowable burning is to be conducted at the facility.

3.1.8 Visible Emissions

IDAPA 58.01.01.625 restricts discharge of air pollutants into the atmosphere which is greater than 20% opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. Amvac will comply with this rule by conducting monthly facility-wide inspections of potential sources of visible emissions, during daylight hours and under normal operating conditions. The inspection will consist of a see/no see evaluation for each potential source. If any visible emissions are observed Amvac will take corrective action or perform a Method 9 or Method 22 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. Amvac will keep records onsite documenting the monthly visible emission inspection or Method 9/22 test conducted.

3.1.9 Rules for Control of Fugitive Dust

IDAPA 58.01.01.625 restricts discharge of air pollutants into the atmosphere which is greater than 20% opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. Amvac will comply with this rule by conducting monthly facility-wide inspections of potential sources of visible emissions, during daylight hours and under normal operating conditions. The inspection will consist of a see/no see evaluation for each potential source. If any visible emissions are observed, Amvac will take corrective action or perform a Method 9/22 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. Amvac will keep records onsite documenting the monthly visible emission inspection and Method 9 test conducted.

IDAPA 58.01.01.650 requires that all reasonable precautions be taken to prevent the generation of fugitive dust. Amvac will comply with fugitive particulate matter regulations.

3.1.10 Fuel Burning Equipment - Particulate Matter

IDAPA 58.01.01.676 restricts any fuel burning source of greater than 10 MMBtu to limit the PM released from combustion to 0.015 gr/dscf for gas fuel. However, Amvac does not have any fuel burning equipment. Therefore, the rule does not apply.

3.1.11 Particulate Matter - Process Weight Limitations

IDAPA 58.01.01.701 promulgates restrictions on PM for the entire facility based on process weight. There are no applicable sources that require process weight calculations.

3.1.12 Odors

IDAPA 58.01.01.775-776 requires no emissions of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution. Amvac will comply with this requirement by keeping records of any odor complaints received and will take appropriate action for each complaint which has merit. Also, note that Amvac has never received an odor complaint to date.

3.2 FEDERAL REGULATORY APPLICABILITY

A review of applicable Federal Rules is provided in Table 3-4. Included in Appendix B is the completed federal regulatory applicability FRA form.

Table 3-2 Federal Regulatory Applicability Summary

Section	Description	Regulatory Citation	Applicable?
3.2.1	National Ambient Air Quality Standards (NAAQS)- (dispersion modeling)	40 CFR Part 50	No
3.2.2	Title V Operating Permit	40 CFR Part 70	No
3.2.3	Air Pollutants (NESHAPs)	40 CFR Parts 61, 63	No
3.2.4	New Source Review (NSR)	40 CFR Part 52	No
3.2.5	New Source Performance Standards (NSPS)	40 CFR Part 60	No
3.2.6	Acid Rain Requirements	40 CFR Parts 72–78	No
3.2.7	Risk Management Programs for Chemical Accidental Release Prevention	40 CFR Part 68	No

3.2.1 National Ambient Air Quality Standards (NAAQS)

Primary National Ambient Air Quality Standards (NAAQS) are identified in 40 CFR Part 50 and define levels of air quality, which the United States Environmental Protection Agency (USEPA) deems necessary to protect the public health. Secondary NAAQS define levels of air quality, which the USEPA judges necessary to protect public welfare from any known or anticipated adverse effects of a pollutant. Examples of public welfare include protecting wildlife, buildings, national monuments, vegetation, visibility, and property values from degradation due to excessive emissions of criteria pollutants.

Specific standards for the following pollutants have been promulgated by USEPA: $PM_{2.5}$, PM_{10}, SO_2, NO_x, CO, ozone, and lead. The Amvac facility will emit $PM_{2.5}$ and PM_{10}. No criteria pollutants exceed BRC, thus a modeling demonstration was not required to demonstrate NAAQS compliance.

3.2.2 Title V (Part 70) Operating Permit

Title V of the Clean Air Act (CAA) created the federal operating permit program. These permitting requirements are codified in 40 CFR Part 70. These permits are required for major sources with a PTE (considering federally enforceable limitations) greater than 100 tpy for any criteria pollutant, 25 tpy for all hazardous air pollutants (HAPs) in aggregate, or 10 tpy of any single HAP. Amvac is a minor source because the potential to emit of any criteria pollutant is less than 100 tons per year, the potential to emit of all HAPs in aggregate is less than 25 tpy, and the potential to emit of any single HAP is less than 10 tpy.

3.2.3 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

National Emission Standards for Hazardous Air Pollutants are discussed in Section 3.1.6 above.

3.2.4 New Source Review Requirements

Owyhee County is designated as an attainment area for all criteria pollutants. Therefore, the prevention of significant deterioration (PSD) regulations codified in 40 CFR Part 52 could potentially apply to the proposed facility. The PSD rule applies to: (1) a new major source that has the potential to emit 100 tons per year or more for any criteria pollutant for a facility that is one of the 28 industrial source categories listed in 40 CFR § 52.21(b)(1)(i)(a); or (2) a new major source that has the potential to emit 250 tons per year or more of a regulated pollutant if the facility is not on the list of industrial source categories; or (3) a modification to an existing major source that results in a net emission increase greater than a PSD significant emission rate as specified in 40 CFR § 52.21 (b)(23)(i); or (4) a modification to an existing minor source that is major in itself. The Amvac facility does not fall under one of the 28 industrial source categories, nor will the PTE exceed 250 tpy for any regulated pollutant. Therefore, Amvac is not subject to PSD regulations.

3.2.5 New Source Performance Standards

New Source Performance Standards are discussed in Section 3.1.5 above.

3.2.6 Acid Rain Requirements

The acid rain requirements codified in 40 CFR Parts 72-78 apply only to utilities and other facilities that combust fossil fuel and generate electricity for wholesale or retail sale. The proposed facility will not produce electrical power for sale. Therefore, the facility is not subject to the acid rain provisions and will not require an acid rain permit.

3.2.7 Risk Management Programs for Chemical Accidental Release Prevention

The facility is not subject to the Chemical Accidental Release Prevention Program and will not be required to develop a Risk Management Plan (RMP). Facilities that produce, process, store, or use any regulated toxic or flammable substance in excess of the thresholds listed in 40 CFR Part 68 must develop an RMP. The facility does not store any regulated toxic or flammable substances in excess of the applicable thresholds. An RMP is not necessary for this facility.

APPENDICES

Appendix A SITE SELECTION MAP

AMVAC Chemical Corporation
Butte Ct
Morning Dove Way
Christensen St
Mountain View Dr
2nd Ave W
Bruneau Hwy
Don St
Butte Ln
1st St W
55
Google earth

Appendix B DEQ PTC FORMS AND CHECKLISTS

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

General Information - **Form GI**
10/29/18

Please see instructions on second page before filling out the form.

FACILITY AND PERMIT INFORMATION

1. Facility Name:	2. Facility ID Number:
Amvac Chemical	IDD092034784
3. Brief Project Description:	Creates various insecticides, herbicides and fungicides as well as flour pellets
4. Facility Contact Name:	5. Facility Contact Title:
Dennis E Achey	Site Manager
6. Facility Contact Telephone Number:	7. Facility Contact Email:
208-779-3110	dennisa@amvac-chemical.com
8. Mailing address where permit will be sent (street/city/state/zip code):	9. Physical address of facility (if different than mailing address) (street/city/state/zip code):
PO Box 150 Marsing, ID 83639	410 Simpkin Lane Marsing, ID 83639

10. County Facility is located	Owyhee	
11. Is the equipment portable?	☒ No ☐ Yes	
12. NAICS codes	Primary NAICS: 325320	Secondary NAICS (if applicable):
13. Brief business description and principal product produced:	Creates various insecticides, herbicides and fungicides as well as flour pellets	
14. Describe any contiguous or adjacent facility this company owns or operates:	Not applicable	
15. Permit Application Type. Provide Permit Number for existing permit. For a PTC, an application fee is required.	☒ Initial Permit to Construct (PTC) ☐ PTC Modification	PTC No. _____ Issued Date _____
	☐ Initial Tier II ☐ Tier II Modification ☐ Tier II Renewal	Tier II No. _____ Issued Date _____
	☐ Initial Tier I ☐ Tier I Administrative Amendment ☐ Tier I Minor Modification ☐ Tier I Significant Modification ☐ Tier I Renewal	Tier I No. _____ Issued Date _____
16. **For Tier I permitted facilities only:** If you are applying for a PTC then you must specify how the PTC will be incorporated into the Tier I permit.	☐ Incorporate PTC at the time of Tier I renewal (IDAPA 58.01.01.209.05.a) ☐ Co-process PTC with Tier I Modification (IDAPA 58.01.01.209.05.b) ☐ Administrative amend the Tier I to incorporate PTC upon applicant's request (IDAPA 58.01.01.209.05.c)	

17. ☒ Check here to request facility draft permit before final issuance.

Certification of Truth, Accuracy, and Completeness (by Responsible Official)
I hereby certify that based on information and belief formed after reasonable inquiry, the statements and information contained in this and any attached and/or referenced document(s) are true, accurate, and complete in accordance with IDAPA 58.01.01.123 124.

[signature]
Responsible Official Signature

Site Manager
Responsible Official Title

10/31/18
Date

Dennis E Achey
Print or Type Responsible Official Name

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Baghouse Control Equipment **Form BCE**
Revision 6
2/18/10

Complete this form for each baghouse. Please see instructions on page 2 before filling out the form.

IDENTIFICATION

1. Company Name	2. Facility Name:
Amvac Chemical	NA

3. Brief Project Description: Creates various insecticides, herbicides and fungicides as well as flour pellets

BAGHOUSE INFORMATION

4. Baghouse Manufacturer: US Air Filtration	5. Baghouse Model: 16 oz Polyester	6. Baghouse Equipment ID:

7 (a). Baghouse particulate matter emission concentration. **Note: Provide information in 7(a)-(c) or answer question #8 below.**	0.005 gr/dscf	*Manufacturers typically provide guarantees in grains per dry standard cubic foot (gr/dscf). Provide a copy of the guarantee, or other documentation, with the application along with a description of the types of bags that must be used to achieve the emission concentration.* ***Emission concentrations less than 0.01 gr/dscf will receive additional scrutiny by DEQ and a source test of the baghouse may be required.*** *If a guarantee is not provided then you must document how you obtained the emission concentration. Without documentation the application is not complete.*
7 (b). Percentage PM_{10} Or Provide PM_{10} Emission Concentration	_____ % _____ gr/dscf	*What percentage of the PM concentration listed in question #7(a) is PM_{10}. You must provide documentation as to how the percentage was determined (i.e per the baghouse manufacturer). Without documentation the application is not complete.*
7 (c). Baghouse flow rate	_____ dscfm	*Provide the baghouse flow rate in dry standard cubic feet per minute. Actual cubic feet per minute may be given in lieu of dscfm* ***if it is documented*** *that moisture content is insignificant. You must provide documentation as to how this flow rate was determined (i.e. per the exhaust fan manufacturer, combustion evaluation, etc.). Without documentation the application is not complete.*
8. Baghouse particulate matter control efficiency. **Note: Not needed if section #7 is completed.**	_____ % PM control _____ % PM_{10} control	*Applicant's providing the control efficiency of the baghouse must provide control efficiency for both PM and PM_{10}. Provide a copy of the control efficiency documentation with the application. Documentation must include a description of the types of bags that must be used to achieve the control efficiency. Without documentation the application is not complete.*
9. Is the baghouse equipped with a bag leak detector?	☐ Yes ☒ No	*If a bag leak detector is installed provide documentation on the leak detector, including; how the leak detector functions and what level of the output signal indicates that a bag is leaking. Without documentation the application is not complete.*

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Exemption - **Form EXPT**
Revision 6
2/13/17

Please see instructions on pages 5-6 before filling out the form.

This form is for facilities desiring an exemption from the requirement to obtain a Permit to Construct (PTC) for sources of air emissions. The Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01.220 through 223) allow for owners or operators to exempt certain sources of air emissions from the requirement to obtain a PTC. This form is to be used to assist facilities in preparing and maintaining documentation in support of a PTC exemption. This form may be used to document a self-exemption analysis or may be submitted to DEQ for an exemption concurrence (at no cost to the Applicant).

This form is intended to be used for the equipment or activity for which a PTC exemption is desired.

Note: For existing sources of air emissions, removal of equipment that generates air emissions cannot be used to offset the increase in air emissions for the equipment or activity for which a PTC exemption is desired.

Additional Note: A PTC exemption does not release the owner or operator of sources of air emissions from compliance with all other applicable federal (e.g., NSPS requirements, Tier I operating permit), state, or local laws, regulations, permits, or ordinances.

IDENTIFICATION

1. Company Name	2. Facility Name:
Amvac Chemical	Marsing
3. Facility ID Number (if applicable)	4. Primary NAICS Code:
NA	325320
5. Project Description (provide a complete description of the equipment or activity being exempted):	Creates various insecticides, herbicides and fungicides as well as flour pellets

GENERAL INFORMATION

6. Facility Information:	7. Permitting Contact: Dennis Achey 8. Telephone No.: (208) 779-3111 9. E-mail: dennisa@amvac-chemical.com 10. Physical Address: 410 Simpkin Lane, Marsing, ID 83639 11. Mailing Address: Same as physical

GENERAL EXEMPTION CRITERIA (IDAPA 58.01.01.220)

12. For each regulated air pollutant, are uncontrolled emissions, or the uncontrolled emissions increase, of the equipment or activity being exempted greater than or equal to 100 tons per year in accordance with IDAPA 58.01.01.220.01.a.i? *Note: Supporting documentation must be attached to this form.*	☐ Yes *Note: The project cannot be exempted.* ☒ No
13. Is the equipment or activity being exempted located at a Major Facility/Major Stationary Source? *Note: Supporting documentation must be attached to this form.*	☐ Yes ☒ No, go to question 15
14. For each regulated air pollutant, is the emissions increase of the equipment or activity being exempted greater than or equal to the significant emissions rate in accordance with IDAPA 58.01.01.220.01.a.ii? *Note: Supporting documentation must be attached to this form.*	☐ Yes *Note: The project cannot be exempted.* ☐ No
15. Is the equipment or activity being exempted part of a proposed new Major Facility/Major Stationary Source or part of a proposed Major Modification in accordance with IDAPA 58.01.01.220.01.b? *Note: Supporting documentation must be attached to this form.*	☐ Yes *Note: The project cannot be exempted.* ☒ No

CATEGORY I or II EXEMPTION (IDAPA 58.01.01.221 or 222)

16. Are all the emissions sources for which this exemption is being requested explicitly listed under Section 222? **Note: Multiple stationary IC engines do not have to total less than the listed horsepower to meet the exemption listed in Section 222.01.c (e.g. multiple 600 bhp IC engine qualify for exemption). Multiple pieces of fuel burning equipment must have a total combined heat input rating of less than 50 MMBtu/hr to meet the exemption listed under 222.02.c (e.g. multiple 49 MMBtu/hr boilers do not qualify for exemption). Multiple pieces of "other" fuel burning equipment must have a total combined heat input rating of less than 1 MMBtu/hr to meet the exemption listed under 222.02.d.*	☒ No, go to question 17 (Category I Exemption) ☐ Yes, go to question 22 (Category II Exemption)

CATEGORY I EXEMPTION (IDAPA 58.01.01.221)	
17. Are the controlled emissions of the equipment or activity being exempted below regulatory concern in accordance with IDAPA 58.01.01.221.01? *Note: Supporting documentation must be attached to this form.*	☒ Yes ☐ No *Note: The project cannot be exempted.*
18. Are radionuclides emitted from the equipment or activity being exempted *(Note: This question only applies to Department of Energy (DOE) facilities)*?	☐ Yes ☒ No, go to question 20
19. Are potential emissions of radionuclides from the equipment or activity being exempted less than 1% of the applicable standard in accordance with IDAPA 58.01.01.221.02? *Note: Supporting documentation must be attached to this form.*	☐ Yes ☐ No *Note: The project cannot be exempted.*
20. Does the equipment or activity being exempted emit Toxic Air Pollutants (TAPs) which are required to comply with Section 223? *Note: Supporting documentation must be attached to this form.*	☒ Yes (complete 223 Section, starting with Question 32) ☐ No
21. Does the equipment or activity being exempted have potential emissions of mercury (Hg) greater than or equal to twenty-five (25) pounds per year? *Note: Supporting documentation must be attached to this form.*	☐ Yes *Note: The project cannot be exempted.* ☐ No, go to question 40 (Records Retention)
CATEGORY II EXEMPTION (IDAPA 58.01.01.222)	
22. Does all of the equipment or the activity being exempted qualify for an explicit exemption in accordance with IDAPA 58.01.01.222 (excluding the exemptions listed in IDAPA 58.01.01.222.01.a for laboratory equipment, 01.e for a pilot plant, and 02.j for a petroleum environmental remediation source by vapor extraction)? **Note: Multiple stationary IC engines do not have to total less than the listed horsepower to meet the exemption listed in Section 222.01.c (e.g. multiple 600 bhp IC engine qualify for exemption). Multiple pieces of fuel burning equipment must have a total combined heat input rating of less than 50 MMBtu/hr to meet the exemption listed under 222.02.c (e.g. multiple 49 MMBtu/hr boilers do not qualify for exemption). Multiple pieces of "other" fuel burning equipment must have a total combined heat input rating of less than 1 MMBtu/hr to meet the exemption listed under 222.02.d.*	☐ No The project may be exempt under Category I, go back to question 17. ☐ No, qualifies for an exemption under IDAPA 58.01.01.222.01.a, 01.e, and 02.j ☐ Yes Identify the applicable exemption(s) on the attached Category II Addendum sheet, go to question 40 (Records Retention)
23. Is the exemption for **laboratory equipment** in accordance with IDAPA 58.01.01.222.01.a?	☐ Yes ☐ No, go to question 27
24. Does the laboratory equipment emit Toxic Air Pollutants (TAPs) which are required to comply with Section 223? *Note: Supporting documentation must be attached to this form.*	☐ Yes (complete TAPs Exemption Section, starting with Question 32) ☐ No
25. Are radionuclides emitted from the laboratory equipment *(Note: This question only applies to DOE facilities)*?	☐ Yes ☐ No, go to question 40 (Records Retention)
26. If yes, are potential emissions of radionuclides from the laboratory equipment being exempted less than 1% of the applicable standard in accordance with IDAPA 58.01.01.221.02? *Note: Supporting documentation must be attached to this form.*	☐ Yes, go to question 40 (Records Retention) ☐ No *Note: The project cannot be exempted.*
27. Is the exemption for a **pilot plant** that will terminate operation one year after the commencement of operations and for which the exemption will not be renewed in accordance with IDAPA 58.01.01.222.01.e? *Note: Supporting documentation must be attached to this form.*	☐ Yes ☐ No, go to question 31
28. Does the pilot plant emit Toxic Air Pollutants (TAPs) which are required to comply with Section 223? *Note: Supporting documentation must be attached to this form.*	☐ Yes (complete TAPs Exemption Section, starting with Question 32) ☐ No
29. Are radionuclides emitted from the pilot plant *(Note: This question only applies to DOE facilities)*?	☐ Yes ☐ No, go to question 40 (Records Retention)
30. If yes, are uncontrolled potential emissions of radionuclides from the pilot plant being exempted less than 1% of the applicable standard in accordance with IDAPA 58.01.01.221.02?? *Note: Supporting documentation must be attached to this form.*	☐ Yes ☐ No *Note: The project cannot be exempted.*
31. Is the exemption for a **petroleum environmental remediation source by vapor extraction** with an operation life not to exceed five (5) years (except for landfills) in accordance with IDAPA 58.01.01.222.02.j?	☐ No The project may be exempt under Category I, go back to question 17. ☐ Yes See the ***Guidance for Remediation of Petroleum Contaminated Media*** available at www.deq.idaho.gov, go to question 40 (Records Retention)

Toxic Air Pollutants (TAPs) EXEMPTION (IDAPA 58.01.01.223)	
32. Does the equipment or activity being exempted emit TAPs?	☒ Yes ☐ No, go to question 40 (Records Retention)
33. Are the TAPs that are emitted also HAPs that are regulated by a Federal NSPS or NESHAP Rule (see IDAPA 58.01.01.210.20)? *Note: If so, the target HAP emissions (controlled by the NSPS or NESHAP) from this equipment or activity can be excluded from the TAPs analysis.*	☐ Yes, exclude the target HAPs from the regulated equipment or activity from the TAPs exemption analysis ☒ No, include HAPs from the regulated equipment or activity in the TAPs exemption analysis
34. Is the increase in uncontrolled TAP emissions from the equipment or activity being exempted Below Regulatory Concern (**BRC**) in accordance with IDAPA 58.01.01.223.01? *Note: Supporting documentation must be attached to this form.*	☐ Yes, go to question 40 (Records Retention) ☒ No
35. Is the increase in the uncontrolled emission rate for all TAPs emitted from the equipment or activity being exempted less than or equal to all applicable screening emission levels listed in IDAPA 58.01.01.585 and 586 in accordance with IDAPA 58.01.01.223.02.a? **Level I** *Note: Supporting documentation must be attached to this form.*	☐ Yes, go to question 39 (end of this Section) ☒ No
36. Is the increase in the uncontrolled ambient concentration for all TAPs emitted from the equipment or activity being exempted less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586 in accordance with IDAPA 58.01.01.223.02.b? **Level I** *Note: Supporting documentation must be attached to this form.*	☐ Yes, go to question 39 (end of this Section) ☒ No
37. Is the uncontrolled ambient concentration at the point of compliance for all TAPs emitted by the source less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586 in accordance with IDAPA 58.01.01.223.03.a? *Note: If the owner or operator installs and operates control equipment that is not otherwise required to qualify for an exemption and the controlled emission rate (refer to Section 210) of the source for all toxic air pollutants is less than or equal to ten percent (10%) of all applicable screening emission levels listed in Sections 585 and 586.* **Level II** *Note: Supporting documentation must be attached to this form.*	☐ Yes, go to question 39 (end of this Section) ☒ No
38. Is the uncontrolled ambient concentration at the point of compliance for all TAPs emitted by the source less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586 in accordance with IDAPA 58.01.01.223.04.a? *Note: The controlled emission rate (refer to Section 210) for all toxic air pollutants emitted by the source shall be less than or equal to all applicable screening emission levels listed in Sections 585 and 586.* **Level III** *Note: Supporting documentation must be attached to this form.*	☐ Yes ☒ No *Note: The project cannot be exempted.*
39. The owner or operator of a source claiming a Level I, II, or III exemption shall submit a certified report for the previous calendar year to the Department for each Level I, II, or III exemption determination. The owner or operator is not required to annually submit a certified report for a Level I, II, or III exemption determination previously claimed and reported. The report shall be labeled "Toxic Air Pollutant Exemption Report" and shall state the date construction has or will commence and shall include copies of all exemption determinations completed by the owner or operator for each Level I, II, and III exemption. **Level I, II, or III Report**	☐ TAPs report is included with the exemption analysis ☐ TAPs report is not included (Note: report must be submitted by May 1st of next year)
RECORDS RETENTION (IDAPA 58.01.01.220.02)	
40. *Unless the source is subject to and the owner or operator complies with Section 385, the owner or operator of the source, except for those sources listed in Subsections 222.02.a. through 222.02.g., shall maintain documentation on site which shall identify the exemption determined to apply to the source and verify that the source qualifies for the identified exemption. The records and documentation shall be kept for a period of time not less than five (5) years from the date the exemption determination has been made or for the life of the source for which the exemption has been determined to apply, which ever is greater, or until such time as a permit to construct or an operating permit is issued which covers the operation of the source. The owner or operator shall submit the documentation to the Department upon request.* Will records be maintained in accordance with IDAPA 58.01.01.222.02?	☐ Yes ☐ N/A This exemption is for a source subject to Section 385 or is listed in Subsections 222.02.a. through 222.02.g. Therefore, records are not required to be maintained. ☐ No *Note: The project cannot be exempted.*

CERTIFICATION (IDAPA 58.01.01.123)

In accordance with IDAPA 58.01.01.123 (Rules for the Control of Air Pollution in Idaho), I certify based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

41. Responsible Official's Name and Title:		
42. Responsible Official's Signature:		Dated:

CATEGORY II EXEMPTION (IDAPA 58.01.01.222) Addendum		
222.01.b	Environmental characterization activities including emplacement and operation of field instruments, drilling of sampling and monitoring wells, sampling activities, and environmental characterization activities.	☐ Applicable Provide details
222.01.c	Stationary internal combustion engines of less than or equal to six hundred (600) horsepower and which are fueled by natural gas, propane gas, liquefied petroleum gas, distillate fuel oils, residual fuel oils, and diesel fuel; waste oil, gasoline, or refined gasoline shall not be used. To qualify for this exemption, the source must be operated in accordance with the following:	
	i. One hundred (100) horsepower or less -- unlimited hours of operation.	☐ Applicable Provide details
	ii. One hundred one (101) to two hundred (200) horsepower -- less than four hundred fifty (450) hours per month.	☐ Applicable Provide details
	iii. Two hundred one (201) to four hundred (400) horsepower -- less than two hundred twenty-five (225) hours per month.	☐ Applicable Provide details
	iii. Four hundred one (401) to six hundred (600) horsepower -- less than one hundred fifty (150) hours per month.	☐ Applicable Provide details
	Note: Any quantity of IC engines less than or equal to six hundred (600) horsepower are eligible to meet this exemption.	
222.01.d	Stationary internal combustion engines used exclusively for emergency purposes which are operated less than five hundred (500) hours per year and are fueled by natural gas, propane gas, liquefied petroleum gas, distillate fuel oils, residual fuel oils, and diesel fuel; waste oil, gasoline, or refined gasoline shall not be used. *Note: Any quantity of emergency IC engines are eligible to meet this exemption.*	☐ Applicable Provide details
222.02.a	Air conditioning or ventilating equipment not designed to remove air pollutants generated by or released from equipment.	☐ Applicable Provide details
222.02.b	Air pollutant detectors or recorders, combustion controllers, or combustion shutoffs.	☐ Applicable Provide details
222.02.c	Fuel burning equipment for indirect heating and for heating and reheating furnaces using natural gas, propane gas, liquified petroleum gas, or biogas (gas produced by the anaerobic decomposition of organic material through a controlled process) with hydrogen sulfide concentrations less than two hundred (200) ppmv exclusively with a capacity of less than fifty (50) million btu's per hour input. *Note: Multiple pieces of fuel burning equipment must have a total combined heat input rating of less than 50 MMBtu/hr to meet this exemption.*	☐ Applicable Provide details
222.02.d	Other fuel burning equipment for indirect heating with a capacity of less than one million (1,000,000) btu's per hour input. *Note: Multiple pieces of "other" fuel burning equipment must have a total combined heat input rating of less than 1 MMBtu/hr to meet this exemption.*	☐ Applicable Provide details
222.02.e	Mobile internal combustion engines, marine installations, and locomotives.	☐ Applicable Provide details
222.02.f	Agricultural activities and services. *Note: See definition of "Agricultural Activities" in IDAPA 58.01.01.007.*	☐ Applicable Provide details
222.02.g	Retail gasoline, natural gas, propane gas, liquified petroleum gas, distillate fuel oils and diesel fuel sales.	☐ Applicable Provide details
222.02.h	Used Oil Fired Space Heaters which comply with all the requirements listed in the Rule.	☐ Applicable Provide details
222.02.i	Multiple chamber crematory retorts used to cremate human or animal remains using natural gas exclusively with a maximum average charge capacity of two hundred (200) pounds of remains per hour and a minimum secondary combustion chamber temperature of one thousand five hundred (1500) degrees Fahrenheit while operating.	☐ Applicable Provide details
222.02.k	Dry cleaning facilities that are not major under, but subject to, 40 CFR Part 63, Subpart M.	☐ Applicable Provide details

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
Air Permit Hotline – 1-877-5PERMIT

Federal Rule Applicability – **Form FRA**
6/7/2018

In each box in the table below, CTRL+click on the blue underlined text for instructions and information.

IDENTIFICATION	
1. Company Name:	2. Facility Name:
Amvac Chemical	
3. Brief Project Description:	Creates various isecticides, herbicides and fungicides as well as flour pellets

APPLICABILITY DETERMINATION	
4. List all applicable subparts of the New Source Performance Standards (NSPS) (40 CFR part 60). List all non-applicable subparts of the NSPS which may appear to apply to the facility but do not. Examples of NSPS-affected emissions units include internal combustion engines, boilers, turbines, etc. Applicant must thoroughly review the list of affected emissions units.	List of all applicable subpart(s): List of all non-applicable subpart(s) which may appear to apply but do not: ☒ Not Applicable
5. List applicable subpart(s) of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR part 61 and 40 CFR part 63). List all non-applicable subparts of the NESHAP which may appear to apply to the facility but do not. Examples of affected emission units include solvent cleaning operations, industrial cooling towers, paint stripping and miscellaneous surface coating. Reference EPA's webpage on NESHAPs for more information.	List of all applicable subpart(s): List of all non-applicable subpart(s) which may appear to apply but do not: FFFF, VVVVVV, BBBBBBB ☒ Not Applicable
6. For each subpart identified above, conduct a complete regulatory analysis using the instructions and referencing the example on the following pages. **Note**: Regulatory reviews must be submitted with sufficient detail so that DEQ can verify applicability and document in legal terms why the regulation does or does not apply. Regulatory reviews submitted with insufficient detail will be determined incomplete.	☒ A detailed regulatory review has been provided ☐ DEQ has already been provided a detailed regulatory review (please provide a reference)

IF YOU ARE UNSURE HOW TO ANSWER ANY OF THESE QUESTIONS, CALL THE AIR PERMIT HOTLINE AT 1-877-5PERMIT.

It is emphasized that it is the applicant's responsibility to satisfy all technical and regulatory requirements, and that DEQ will help the applicant understand those requirements <u>prior</u> to submittal of the application but that DEQ will not perform the required technical or regulatory analyses on the applicant's behalf.

Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

§63.2435 Am I subject to the requirements in this subpart?

(a) You are subject to the requirements in this subpart if you own or operate miscellaneous organic chemical manufacturing process units (MCPU) that are located at, or are part of, a major source of hazardous air pollutants (HAP) emissions as defined in section 112(a) of the Clean Air Act (CAA).

Amvac Chemical is not a major source of HAPs, nor do they meet the definition of a MCPU. Therefore, the facility is not subject to the subpart.

Subpart VVVVVV—National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

§63.11494 What are the applicability requirements and compliance dates?

(a) Except as specified in paragraph (c) of this section, you are subject to this subpart if you own or operate a chemical manufacturing process unit (CMPU) that meets the conditions specified in paragraphs (a)(1) and (2) of this section.

(1) The CMPU is located at an area source of hazardous air pollutant (HAP) emissions.

(2) HAP listed in Table 1 to this subpart (Table 1 HAP) are present in the CMPU, as specified in paragraph (a)(2)(i), (ii), (iii), or (iv) of this section.

(i) The CMPU uses as feedstock, any material that contains quinoline, manganese, and/or trivalent chromium at an individual concentration greater than 1.0 percent by weight, or any other Table 1 HAP at an individual concentration greater than 0.1 percent by weight. To determine the Table 1 HAP content of feedstocks, you may rely on formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet (MSDS) for the material. If the concentration in an MSDS is presented as a range, use the upper bound of the range.

(ii) Quinoline is generated as byproduct and is present in the CMPU in any liquid stream (process or waste) at a concentration greater than 1.0 percent by weight.

(iii) Hydrazine and/or Table 1 organic HAP other than quinoline are generated as byproduct and are present in the CMPU in any liquid stream (process or waste), continuous process vent, or batch process vent at an individual concentration greater than 0.1 percent by weight.

(iv) Hydrazine or any Table 1 HAP is produced as a product of the CMPU.

Amvac Chemical is an Area source for HAPs, and maybe considered a CMPU per the definition, but the CMPU does not use any material containing quinoline, manganese or trivalent chromium. Nor does Amvac produce quinoline or hydrazine as a byproduct. There the facility is not subject to the subpart

Subpart BBBBBBB—National Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry

§63.11579 Am I subject to this subpart?

(a) You are subject to this subpart if you meet all of the following conditions:

(1) You own or operate a chemical preparations facility (as defined in §63.11588, "What definitions apply to this subpart?"),

(2) The chemical preparations facility is a stationary area source of hazardous air pollutants (HAP) (as defined in §63.2), and

(3) The chemical preparations facility has at least one chemical preparations operation in target HAP service (as defined in §63.11588, "What definitions apply to this subpart?").

Amvac Chemical does not prepare any chemical containing a target HAP. A target HAP is considered chromium, lead, manganese and nickel, none of which are prepared or emitted by Amvac. Therefore, the facility is not subject to the subpart.

Appendix C EMISSION INVENTORY

Fung/Insect AI Chemicals
Thiram 95%+
Clothianidin 98%
Tebuconizole 98%
Pentachloronitrobenzene 96%+
Bifenthrin 90%+
Imidacloprid 98%
Chlorothalinil 98%+
Abamectin 98%+
Baytan
Iprodione
Metalaxyl
Penflufen
Prothioconazole
Trifloxystrobin
Imazalil
Fibronil
Ipconazole 94.5%+
Carboxin 98%+

Deadline Pellet Components
Flour 90%

Herbicide AI Chemicals
Topramezone 95%+
Oryzalin
Atrazine
Dacthal 95%+
Metribuzin
Flumioxazin

	Material	Type	Process/Area Where Product Used	How Product is Applied	Safety Data Sheet	Comments
1	Technical Bifenthrin	Insecticide	Insecticide AI Chemicals	Viscous liquid to waxy solid	Bifenthrin Tech SDS.pdf (5-25-2016)	
2	Clothianidin Technical Pesticide	Insecticide	Insecticide AI Chemicals	White to yellow powder	Clothianidin Technical SDS.pdf (9-12-2013)	
3	Imidacloprid	Insecticide	Insecticide AI Chemicals	Solid. May form dust, aerosols.	Imidacloprid SDS.pdf (6-27-2014)	
4	Chlorothalonil Technical	Fungicide	*Fungicide*	White Powder	Chlorothalonil Technical 576_v1.0 SDS-US.pdf	
5	Technical Grade PCNB	Fungicide	Fungicide	Light Yellow Granular	Technical Grade PCNB SDS.pdf (4-16-2015)	585 & 586 TAPS
6	Tebuconizole 98%	Fungicide	Fungicide	White Powder. Solid.	Folicur Technical.pdf	
7	Chemtura THIRAM TECHNICAL, US EPA Label	Fungicide/Insecticide	Fungicide	Light brown powder.	Thiram Technical SDS.pdf (2-26-2013)	585 TAP
8	Wheat Products (whole, rolled, flaked, ground or flour)	Inert	Deadline Pellet	Off-White Powder	Flour.pdf	
9	Dacthal Technical; Technical Chlorthal dimethyl	Herbicide	Herbicide AI Chemicals	Technical grade herbicide for use in	Dacthal Technical SDS.pdf (5-11-2015)	586 TAP
10	Topramezone Technical (95%+)	Herbicide	Herbicide AI Chemicals	Off -White (beige) Powder	Topramezone Tech 334_3.pdf	
11	Baytan (CN) TC 1X500KG FBC US	Fungicide	Fungicide	Grey-beige solid.	Baytan TC SDS.pdf	
12	Imazalil	Fungicide	Fungicide	Solid	Imazalil SDS.pdf	
13	Iprodione Technical	Fungicide	Fungicide	Free flowing white powder.	Iprodione Technical SDS.pdf	
14	Metalaxyl	Fungicide	Fungicide	Solid	Metalaxyl SDS.pdf	
15	Penflufen TC 1X100KG DRM US	Fungicide	Fungicide	Colorless to pale (green/blue/pink) chrystalline	Penflufen TC SDS.pdf	
16	Prothioconazole Technical Fungicide	Fungicide	Fungicide	White to beige powder	Prothioconazole SDS.pdf	
17	Trifloxystrobin	Fungicide	Fungicide	Solid	Trifloxystrobin SDS.pdf	
18	Atrazine	Herbicide	*Herbicide AI Chemicals*	White Powder	Atrazine SDS (Sigma-Aldrich).pdf	
19	Oryzalin Technical	Herbicide	*Herbicide AI Chemicals*	Orange Granular	Orzalin Technical (19044-88-3)	
20	Abamectin Technical	Fungicide	Fungicide	White Powder	Abamectin Technical (Makhteshim Agan of North America).pdf	
21	Fipronil Technical	Insecticide	Insecticide AI Chemicals	Powder	Fibronil Tech Gharda ('15) MSDS (Gharda Chemicals Limited).pdf	
22a	Metribuzin Technical	Herbicide	Herbicide AI Chemicals	White Powder	Metribuzin Tech msds.pdf	585 TAP
22b	Flumioxazin Technical	Herbicide	Herbicide AI Chemicals	White Powder	0499rev2 Flumi TG.pdf	
22c	Pyroxasulfone Technical	Herbicide	Herbicide AI Chemicals	White Powder	Pyroxasulfone Technical.pdf	
23	Carboxin Technical	Fungicide	Fungicide	Powder	Carboxin Technical.pdf	
24	Ipconazole Technical	Fungicide	Fungicide	Powder	Ipconazole Technical SDS.pdf	

% of PM10	50%
% of PM2.5	50%

1 **SDS File Name:** Bifenthrin Tech SDS.pdf (5-25-2016)
Product Manufacturer: AMVAC Chemical Corp
Product Name: Technical Bifenthrin
Notes: Viscous liquid to waxy solid

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM_{10} and $PM_{2.5}$ is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Bifenthrin	82657-04-3	0.02	0.13	3.07E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

2 **SDS File Name:** Clothianidin Technical SDS.pdf (9-12-2013)
Product Manufacturer: Bayer Crop Science
Product Name: Clothianidin Technical Pesticide
Notes: White to yellow powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Clothianidin	210880-92-5	0.02	0.13	3.11E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

3 **SDS File Name:** Imidacloprid SDS.pdf (6-27-2014)
Product Manufacturer: Sigma-Aldrich
Product Name: Imidacloprid
Notes: Solid. May form dust, aerosols.

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Imidacloprid	138261-41-3	0.02	0.14	3.12E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

4 **SDS File Name:** Chlorothalonil Technical 576_v1.0 SDS-US.pdf
Product Manufacturer: AMVAC Chemical Corp
Product Name: Chlorothalonil Technical
Notes: White Powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled

It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.

1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)

The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Chlorothalonil	1897-45-6	0.02	0.13	3.01E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

5 **SDS File Name:** Technical Grade PCNB SDS.pdf (4-16-2015)
Product Manufacturer: AMVAC Chemical Corp
Product Name: Technical Grade PCNB
Notes: Light Yellow Granular

Emissions
Annual Applied (lb/yr): 5,939.28
Max Hourly lbs (lb/hr):[1] 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled

It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.

There are two TAPs and are thus limited to 4 total daily batches per PTC Application

By default the PM emissions are limited too. (lb/hr represents 1 batch)

Maximum PM10 = 50%; PM2.5 = 50% of total PM

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP	
Pentachloronitrobenzene	82-68-8	0.01632	0.13	4.85E-02	Y	Y	585
Hexachlorobenzene	118-74-1	8.5E-06	6.92E-05	2.52E-05	Y	Y	586
PM2.5		8.50E-03	6.92E-02	2.52E-02			
PM10		8.50E-03	6.92E-02	2.52E-02			

6 **SDS File Name:** Folicur Technical.pdf
Product Manufacturer: Bayer Crop Science
Product Name: Tebuconizole 98%
Notes: White Powder. Solid.

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled

It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.

1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)

The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Tebuconazole	107534-96-3	0.01666	0.14	3.12E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

7 **SDS File Name:** Thiram Technical SDS.pdf (2-26-2013)
Product Manufacturer: Chemtura Corporation
Product Name: Chemtura THIRAM TECHNICAL, US EPA Label
Notes: Light brown powder.

Emissions
Annual Applied (lb/yr): 23,757
Max Hourly lbs (lb/hr): 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled

It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.

There is one TAP and is thus limited to 16 total daily batches per PTC Application

By default the PM emissions are limited too. (lb/hr represents 1 batch)

Maximum PM10 = 50%; PM2.5 = 50% of total PM

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP	
Thiram	137-26-8	0.01649	0.13	1.96E-01	N	Y	585
PM2.5		8.50E-03	6.92E-02	1.01E-01			
PM10		8.50E-03	6.92E-02	1.01E-01			

8 **SDS File Name:** Flour.pdf
Product Manufacturer: La Crosse Milling Company
Product Name: Wheat Products (whole, rolled, flaked, ground or flour)
Notes: Off-White Powder

Emissions
Annual Potential Applied (lb/yr): 3,754 **Control Efficiency** 0.005 gr/dscf
Max Hourly lbs (lb/hr) 0.43

Component	CAS No.	Max Wt. Fraction[1]	Actual Emissions (lb/hr)	Actual Emissions (T/yr)
PM2.5		0.0092	3.94E-03	1.727E-02
PM10		0.2890	1.24E-01	0.542

1. The maximum mass fraction of flour particulate matter is derived on Texas A&M University Test data. (See TexasAM_flour.pdf)
The baghouse operates 8760 hr/yr and has a grain loading rate of 0.005 gr/dscf based on manufacturer specs @ a flow of 10,000 cfm.
Pellet crumbs are pulled from the baghouse back to the pellet extruder for continual reprocessing. The system is essentially closed and cycles the return system every 30 seconds.

9 **SDS File Name:** Dacthal Technical SDS.pdf (5-11-2015)
Product Manufacturer: AMVAC Chemical Corp
Product Name: Dacthal Technical; Technical Chlorthal dimethyl
Notes: Technical grade herbicide for use in preparation of formulated products. Fine off-white to gray powder.

Emissions
Annual Applied (lb/yr): 203
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
There is one TAP and is thus limited to 50 total annual batches per PTC Application
By default the PM emissions are limited too. (lb/hr represents 1 batch)
Maximum PM10 = 50%; PM2.5 = 50% of total PM

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP	
Benzene, hexachloro-	118-74-1	3.40E-05	2.77E-04	3.46E-06	Y	Y	586
PM2.5		8.50E-03	6.92E-02	8.64E-04			
PM10		8.50E-03	6.92E-02	8.64E-04			

10 **SDS File Name:** Topramezone Tech 334_3.pdf
Product Manufacturer: AMVAC Chemical Corp
Product Name: Topramezone Technical (95%+)
Notes: Off -White (beige) Powder

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Topramezone	210631-68-8	0.01615	1.31E-01	3.03E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

11 **SDS File Name:** Baytan TC SDS.pdf
Product Manufacturer: Bayer Crop Science
Product Name: Baytan (CN) TC 1X500KG FBC US
Notes: Grey-beige solid.

Emissions

Annual Potential Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Triadimenol	55219-65-3	0.017	1.38E-01	3.03E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

12 **SDS File Name:** Imazalil SDS.pdf
Product Manufacturer: Sigma-Aldrich
Product Name: Imazalil
Notes: Solid

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Imazalil	35554-44-0	0.017	1.38E-01	3.19E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

13 **SDS File Name:** Iprodione Technical SDS.pdf
Product Manufacturer: FMC Corporation
Product Name: Iprodione Technical
Notes: Free flowing white powder.

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Iprodione	36734-19-7	0.01632	1.33E-01	3.06E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

14 **SDS File Name:** Metalaxyl SDS.pdf
Product Manufacturer: Sigma-Aldrich
Product Name: Metalaxyl
Notes: Solid

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14
Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Methyl-N-(2,6-dimethylphenyl)-N-(methoxyacetyl)	57837-19-1	0.017	1.38E-01	3.19E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		

PM10		8.50E-03	6.92E-02	1.59E-02		

15 **SDS File Name:** Penflufen TC SDS.pdf
Product Manufacturer: Bayer Crop Science
Product Name: Penflufen TC 1X100KG DRM US
Notes: Colorless to pale (green/blue/pink) chrystalline powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Penflufen	494793-67-8	0.0167824	1.37E-01	3.15E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

16 **SDS File Name:** Prothioconazole SDS.pdf
Product Manufacturer: Bayer Crop Science
Product Name: Prothioconazole Technical Fungicide
Notes: White to beige powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Prothioconazole	178298-70-6	0.016609	1.35E-01	3.12E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

17 **SDS File Name:** Trifloxystrobin SDS.pdf
Product Manufacturer: Sigma-Aldrich
Product Name: Trifloxystrobin
Notes: Solid

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Trifloxystrobin	141517-21-7	0.017	1.38E-01	3.19E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

18 **SDS File Name:** Atrazine SDS (Sigma-Aldrich).pdf
Product Manufacturer: Superelco
Product Name: Atrazine
Notes: White Powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled

It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
2-Chloro-4-ethylamine-6-isopropylamine-1,3,5	64742-95-6	0.017	1.38E-01	3.19E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

19 **SDS File Name:** Orzalin Technical (19044-88-3)
Product Manufacturer: UPI
Product Name: Oryzalin Technical
Notes: Orange Granular

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Oryzalin	19044-88-3	0.01445	1.18E-01	2.71E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

20 **SDS File Name:** Abamectin Technical (Makhteshim Agan of North America).pdf
Product Manufacturer: Makhteshim Agan
Product Name: Abamectin Technical
Notes: White Powder

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Oryzalin	71751-41-2	0.016592	1.35E-01	3.11E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

21 **SDS File Name:** Fibronil Tech Gharda ('15) MSDS (Gharda Chemicals Limited).pdf
Product Manufacturer: Gharda Chemical Limited
Product Name: Fipronil Technical
Notes: Powder

Emissions
Annual Applied (lb/yr): 3,751.12
Max Hourly lbs (lb/hr): 8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Fipronil	120068-37-3	0.01666	1.36E-01	3.12E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

22 **SDS File Name:** Metribuzin Tech msds.pdf, 0499rev2 Flumi TG.pdf, Pyroxasulfone Technical.pdf

Product Manufacturer: Bharat Rasayan Limited, Valent USA Corporation, Kumiai Chemical
Product Name: Metribuzin Technical, Flumioxazin Technical, Pyroxasulfone Technical
Notes: White Powder

	Emissions
Annual Applied (lb/yr):	23,757.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 99.8% for PM10 and 98.3% PM2.5 is controlled
It calculated that 6.042 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
The three chemicals are combined for each batch
There is one TAP and is thus limited to 16 total daily batches per PTC Application
By default the PM emissions are limited too. (lb/hr represents 1 batch)
Maximum PM10 = 50%; PM2.5 = 50% of total PM

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Metribuzin	21087-64-9	1.62E-02	1.31E-01	1.92E-01	N	Y
Flumioxazin	103361-09-7	1.70E-02	1.38E-01	2.02E-01	N	N
Pyroasulfone	447399-55-55	1.65E-02	1.34E-01	1.96E-01	N	N
PM2.5		8.50E-03	6.92E-02	1.01E-01		
PM10		8.50E-03	6.92E-02	1.01E-01		

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23 **SDS File Name:** Carboxin Technical.pdf
Product Manufacturer: Greatchem Chemicals
Product Name: Carboxin Technical
Notes: Powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Carboxin	5234-68-4	1.67E-02	1.36E-01	3.12E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

24 **SDS File Name:** Ipconazole Technical SDS.pdf
Product Manufacturer: Chemtura Corporation
Product Name: Ipconazole Technical
Notes: Powder

	Emissions
Annual Applied (lb/yr):	3,751.12
Max Hourly lbs (lb/hr):	8.14

Note that maxmium captured material from each batch is 6 lb/batch. 98.3% PM10 and PM2.5 is controlled
It calculated that 6.102 lb of the material becomes airborne, 6 is captured by the filter with 0.102 lb being released in a 90 minutes timeframe.
1 batch per line (2 total lines) every 90 mins. Facility is open 8,760 hr/yr (5,840 batches/line/yr; 11,680 total batches)
The batches are assumed to be utilized evenly across the 19 powders with no HAP/TAP as PM is the only pollutant of interest; Maxmium % of PM10 is 50% PM2.5 is 50%

Component	CAS No.	Max Wt. Fraction	Actual Emissions (lb/hr)	Actual Emissions (T/yr)	HAP	TAP
Ipconazole	125225-28-7	1.61E-02	1.31E-01	3.01E-02	N	N
PM2.5		8.50E-03	6.92E-02	1.59E-02		
PM10		8.50E-03	6.92E-02	1.59E-02		

	Emissions	
Emissions	**lb/hr**	**T/yr**
Particulate Matter (2.5 microns)	0.07	0.55
Particulate Matter (10 microns)	0.19	1.07
Hazardous Air Pollutants (HAPs)	0.13	4.85E-02

Toxic Air Pollutant (TAP)	**CAS #**	**585/586**	**Max lb/hr**	**T/yr**	**Avg lb/hr**	**Net Screening Emission Level (EL) lb/hr**	**Modeling Required?**
Pentachloronitrobenzene	82-68-8	585	0.13	4.85E-02	3.32E-02	3.33E-02	No
Hexachlorobenzene	118-74-1	586	3.46E-04	2.87E-05	6.55E-06	1.30E-05	No
Thiram	137-26-8	585	0.13	1.96E-01	1.342E-01	3.33E-01	No
Metribuzin	21087-64-9	585	0.13	1.92E-01	1.314E-01	3.33E-01	No
Uncontrolled TAP Verification*							
Uncontrolled Pentachloronitrobenzene	82-68-8	585	7.81	34.21	7.81	3.33E-02	Yes
Uncontrolled Hexachlorobenzene	118-74-1	586	2.03E-02	8.91E-02	2.03E-02	1.30E-05	Yes
Uncontrolled Thiram	137-26-8	585	7.89	34.57	7.89	3.33E-01	Yes
Uncontrolled Metribuzin	21087-64-9	585	7.73	33.85	7.73	3.33E-01	Yes

*Permit Required

Appendix D MANUFACTURER DATA

U.S. Air Filtration, Inc.

Clearing the Air for a Cleaner Environment

STANDARD SPECIFICATION FOR:	**16 oz Polyester Felt**	
Construction	Polyester Needle Punchced Felt	
Fiber Composition	PET	
Scrim Composition	PET	
Felt Area Weight	16.2 +/-5%	oz/sy
Thickness	0.06 - 0.07	inch
Mean Air Permeability	32 - 39	cfm/sf/min @ 0.5" H2O
Breaking Strength - MD	>290	PSI
Breaking Strength - CMD	>320	PSI
Breaking Elongation (PSI) - MD	20	%
Breaking Elongation (PSI) - CMD	40	%
Dry Shrinkage MD (265 F) warp	<1.5	%
Dry Shrinkage CMD (265 F) weft	<1.5	%
Operating Temperatures	<265	deg F
Recommended Maximum Continuous	265	deg F
Recommended Maximum Surge	300	deg F
Finish	Heat Set, Singed, Calendered	

sff

Filter Efficiency (Dust/Grain Loading)

Definition: Efficiency is a measure of how much dust is collected by a certain filter media. The measurement and descriptions used are very differently between cartridges and filter bags.

Cartridge Media Efficiency Ratings: Cartridge media states efficiencies as a percentage of certain sizes particles trapped by the filter media. The following is an example of the efficiency rating for our standard spun bond poly media.

Particle Efficiency by Weight:

0.5 micron	99.70%
1.0 micron	99.80%
2.0 micron	100%

Filter Bags: Filter bags use a different measurement for efficiencies than cartridges. This is primarily because bags rely much more on the filter cake to catch the smaller particles. Bag media efficiencies are based on the volume of total emissions allowed through the baghouse and not micron size. It is measured in grains per dry standard cubic foot (gr/dscf).

1. Standard felts = 0.005 grains per dry standard cubic feet.
   a. 7000 grains per pound
   b. DSCF is equivalent to the CFM of the system.
   c. Example: Maximum emissions = .005 / 7000 * 20,000 cfm x 60min = .85 lbs / hr of dust on a 20,000 CFM system

U.S. Air Filtration, Inc.

Clearing the Air for a Cleaner Environment Since 1987

TECHNICAL DATA SHEET
FILTER CARTRIDGE SPECIFICATIONS
PART NUMBER: USAF-C0080-2-L

Dimensions:	**Height:**	**20”**
	Outside Diameter:	**13.82 and 16.67”**
	Inside Diameter:	**10.6”**
Top End Cap:	**Material:**	**Electro Galvanized (22 ga)**
	Style:	**Open with Lip Flange**
Bottom End Cap:	**Material:**	**Electro Galvanized (22ga)**
	Style:	**Closed**
Gasket:	**5/8” x 5/8” x 14” ID Isoprene sponge**	
Inner Retainer:	**Electro galvanized expanded metal 3/8” x 5/8” (9.53 mm x 15.88 mm) 72% open area**	
Outer Retainer:	**None**	
Filter Media Area:	**136 ft²**	
Media Type:	**ProTura Nanofiber Technology**	
Permeability:	**20 cfm/ft² @ 0.5” w.g.** **160 L/sec/m² @ ΔP 20 mm w.g.**	
Maximum Temperature:	**180º F (82.22ºC)**	
Minimum Efficiency Reporting Value:	**MERV 15 @ 900 cfm**	

Particle Efficiency by Weight Test Dust: AC Fine

Particle Size:	**0.3 – 1.0**	**micron----------------**	**89%**
	1.0 – 3.0	**micron----------------**	**98.3%**
	3.0 – 10.0	**micron----------------**	**99.8%**

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Dust Control Capture

Date:	Location:	Batch:	Equipment:	lbs Captured	By
10/23/2018	Herbicide Unit	710452MS0009	MacFlo	6 lbs	J. Hance
10/24/2018	Herbicide Unit	710452MS0010	MacFlo	6 lbs	J. Hance
10/30/2018	Herbicide Unit	710452MS0011	MacFlo	5 lbs	J. Hance

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PERFORMANCE CHARACTERISTICS OF $PM_{2.5}$ SAMPLERS IN THE PRESENCE OF AGRICULTURAL DUSTS

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Abstract

Tests in a controlled laboratory environment were performed on three $PM_{2.5}$ samplers: a FRM sampler with Wells Impactor Ninety-Six, a FRM sampler with Sharp-Cut Cyclone, and a High-Volume $PM_{2.5}$ Sampler. Three dusts were used for sampling: alumina, corn starch, and wheat flour. Ten replications were performed for each sampler in each dust for a total of ninety replications. Concentration measurements for the test samplers were compared to the "true" $PM_{2.5}$ concentrations, determined by multiplying the fraction less than 10 µm from the Coulter Counter PSD times the TSP concentration. The results showed the percent error of the $PM_{2.5}$ samplers increased with the MMD of the dust sampled. The hypothesis was that the $PM_{2.5}$ samplers used to monitor $PM_{2.5}$ concentrations in the ambient air will not accurately perform in an agricultural environment. It was concluded that the use of these $PM_{2.5}$ samplers would result in unfair regulation of the agricultural industry.

Introduction

In recent years, several studies have been published that associate daily mortality with concentrations of $PM_{2.5}$. These studies resulted in the revision of the National Ambient Air Quality Standards (NAAQS) by the Environmental Protection Agency, which was promulgated on July 18, 1997 and adopted on September 16, 1997. This revision included a new standard for fine particulates ($PM_{2.5}$), which is defined as particulate matter less than 2.5 µm in aerodynamic diameter.

The long-term $PM_{2.5}$ standard, assessed as the three-consecutive year arithmetic mean of annual averages, was set at 15 µg/scm. The short-term $PM_{2.5}$ standard, assessed as the 98^{th} percentile of 24-hour concentrations averaged over three consecutive years, was set at 65 µg/scm (EPA, 1997). However, while the agency based its standard on epidemiological data that linked mortality with particulate matter concentrations, laboratory studies using controlled human exposure did not produce physiological changes**.** This uncertainty about the mechanism of action was a key issue in the debate over the final $PM_{2.5}$ standards (Cooney, 1998). The debate made it all the way to the United States Supreme Court, and in February of 2001, the constitutionality of the 1997 Revisions to the Clean Air Act was unanimously upheld.

Shortly after the revision of the NAAQS, a $PM_{2.5}$ sampler was developed for the Federal Reference Method (FRM). This sampler, however, was mandated "by design" rather than "by performance," due to the limited performance data available for the sampler. An update published by the EPA (2000) states: "the requirement that these instruments rely on specific design elements, rather than performance criteria alone, is structured to produce greater measurement precision and to avoid the data measurement uncertainties experienced in the PM_{10} monitoring program." This lack of performance data, however, does not allow for a margin of error to be specified for the sampler. The designation "by design" then implies that the FRM $PM_{2.5}$ sampler is an accurate sampler.

The EPA seeks various methods for monitoring the concentrations of $PM_{2.5}$ in the ambient air. Methods that are determined to meet specific requirements for adequacy are designated as either reference or equivalent methods. This allows for their use by states and other agencies for determining attainment for the NAAQS. In 40 CFR Part 50 (EPA, 1997), the accuracy of a considered method is defined in a relative sense. The accuracy is defined as the degree of agreement between a subject field $PM_{2.5}$ sampler and a collocated $PM_{2.5}$ reference method audit sampler operating simultaneously at the urban monitoring site location of the subject sampler. In other words, the subject field $PM_{2.5}$ sampler is set next to a FRM $PM_{2.5}$ sampler in the presence of an urban dust, and if the results from both methods statistically agree, then the subject field $PM_{2.5}$ sampler is deemed accurate enough to become a reference or equivalent method.

EPA's focus is on urban environments, yet they also regulate agriculture. Urban dust has an MMD of 5.7 µm and a GSD of 2.25 (EPA, 1996). Agricultural dusts have a larger MMD than that of urban dust. Agricultural dusts such as grain dusts have a MMD ranging from 12 to 16 µm and a GSD ranging from 1.8 to 2.2 (Parnell et al., 1986), while cotton gin dusts have a range of MMDs from 20 to 23 µm and a GSD range of 1.8-2.0 (Wang, 2000). Since reference or equivalent methods are mandated in the presence of urban dusts, and not agricultural dusts,which have a much larger mass median diameter (Figure

1), agriculture could be directly impacted with the use of these methods. It is important to determine if there are differences between $PM_{2.5}$ samplers when sampling agricultural dusts.

Methods and Procedures

A controlled laboratory environment was used throughout this research. This set-up consisted of the samplers, operated within a dust chamber. This chamber included an external dust entrainment system. The temperature in the chamber ranged from 24°C – 29°C during testing periods.

Dust Chamber and Entrainment System

The dust chamber was constructed from particleboard and allowed for the testing of four samplers at once. The chamber consisted of a cubed body portion measuring 2.44 meters at each dimension, with two 45° transitions located on opposite ends of the cube. A single inlet blower located at the end of one transition was capable of moving air at a rate of 127.5 m^3/min through the chamber. A duct connected to the opposite transition allowed dust particles to travel around the outside of the dust chamber body and into the inlet of the fan, to be recirculated throughout the chamber (Figure 2). Perforated walls with 17.5% open area were located between each transition and the cube body of the chamber to act as air straighteners (Figure 3).

A dust feeder injected dust into the chamber. An aluminum disk with a diameter of 61 cm and a thickness of 2.54 cm was used to hold the dust. The disk had a radial rectangular groove, with a cross-sectional area of 2 cm^2, in which the dust was placed. A motor rotated the disk at adjustable speeds. A venturi tube was used to move the dust from the disk into the chamber through Teflon tubing. The suction side of the venturi tube was located over the groove. Air was passed through the venturi tube, and as the disk turned, dust moved into the system and was conveyed into the chamber through the tubing (Figure 4). It was released at a point close to the outlet of the fan, which helped eliminate the settling of the dust. Three dusts were used in this research: corn starch, wheat flour, and brown fused aluminum oxide (alumina).

Tests

Samplers that were tested were a FRM $PM_{2.5}$ sampler with a WINS preseparator, a FRM $PM_{2.5}$ sampler with a Sharp-Cut Cyclone (SCC), and a high-volume $PM_{2.5}$ sampler. Two total suspended particulate (TSP) samplers were also used in this research. One TSP sampler was used to determine the concentration of the dust present in the chamber for each test. The other TSP sampler allowed for a particle size distribution of the entrained dust to be found. A total of ten tests were run for each $PM_{2.5}$ sampler for each of the three dusts. Concentrations from each sampler were calculated for each test.

The particulates captured on the filters during testing were sized using the Coulter Counter Multisizer III (CCM) method. Results of a CCM PSD are particulate matter volume percent versus equivalent spherical diameter (ESD). To change these results to PM mass percent versus aerodynamic equivalent diameter (AED), an assumption must be made. The particle density for the different size particles is assumed to be constant. By entering the square root of the particle density into the CCM software, the resulting particle sizes can automatically be changed from ESD to AED. If the particles have a known shape factor, the square root of the particle density would also be divided by the square root of the shape factor (Mark et al., 1985).

Particulate materials from natural and manmade sources are often nonspherical in shape. The shape and size of particles greatly influence their mechanical properties. The drag force on a nonspherical particle is generally greater than that on a sphere of the same volume moving at the same velocity (Cheng et al., 1988). Therefore, the behavior of a particle is determined by particle size, shape and density. The dynamic shape factor (κ) relating sedimentation diameter to equivalent volume diameter can range from 1.0 to 2.0.

The alumina dust used in this research has an angular shape, not unlike that of a mineral dust such as quartz. Shape plays an important role in processes that concern the adhesion of particles to the collection surface of an impactor. The sharp edges of alumina, with their small local radii of curvature, would considerably reduce the adhesion forces compared to those of a sphere with an equivalent geometrical size. A mean shape factor for alumina dust was determined from the mass median diameter of the dust. The grade designation of the dust used in this research was F1200, which had a shape factor of 1.44 (Mark et al., 1985). A pycnometer was used to find the particle density for the alumina utilized in this research (3.91 g/cm^3).

No shape factor data for corn starch or wheat flour was available in the literature. For the purposes of this research, it was assumed that the particles of these two dusts were spherical, corresponding to a shape factor of one. The particle densities for corn starch and wheat flour were found using the pycnometer, and were 1.5 g/cm^3 and 1.46 g/cm^3, respectively.

Results

Inlet PSDs

In this research, a lognormal distribution was not the best representation of either the inlet or outlet PSDs. Inlet PSDs of all three dusts were found using the CCM. Figures 5, 6, and 7 show the PSDs for all three dusts. It can be seen that although a lognormal distribution might have represented the corn starch and alumina PSDs, it would not have been an appropriate fit for the wheat flour PSD

However, the purpose of the duct on the dust chamber was to recirculate smaller particles throughout the chamber, since the dusts contain only a very small percentage of particles smaller than 2.5 μm. The TSP sampler has a cut-point of approximately 40 μm, so the PSD found from the TSP filter should be representative of the dust entrained in the dust chamber. Figures 8, 9, and 10 show the PSDs of the dust being sampled inside the dust chamber.

Five representative TSP filters were chosen from each set of dust tests, in order to see if the dust distribution within the dust chamber varied throughout the testing. No variations were found, so an average of the five PSDs for each dust was used to represent that dust's inlet PSD. Table 1 shows a comparison between the PSD of the dust and the PSD of the PM captured on the TSP filter. It can be seen that the dust entrained in the dust chamber contained a larger percentage of smaller particles. It is hypothesized that this was a result from the recirculation process. The MMD represents the middle of a PSD: half of the mass on the filter is above the MMD and half is below. The addition of the smaller particles resulted in more mass in the lower half of the particle size ranges. This addition of mass shifted the MMD of the entrained dust PSD to the left. The PSDs of the corn starch and alumina entrained in the dust chamber also showed the trend of an increased GSD. However, the GSD of the wheat flour entrained it the chamber, as compared to the straight wheat flour, decreased. This may be explained by the larger particles in wheat flour settling out, which would decrease the width of the PSD. This hypothesis is also discussed in the concentration section.

Outlet PSDs

The outlet PSDs were found by sizing the PM captured on the filters for each $PM_{2.5}$ sampler with the CCM. The outlet PSDs varied dramatically between dusts for each sampler. Figures 11, 12, and 13 show a sample outlet PSD for each of the three dusts for the High-Volume $PM_{2.5}$ sampler, the FRM with SCC, and the FRM with WINS, respectively. For each sampler, the filters used when sampling the dusts with larger MMDs (corn starch and wheat flour) contained most of their mass in larger particles. The fine particulate on the filter was overwhelmed by the larger particles, inhibiting the calculation of a fractional efficiency curve for the samplers.

The mass on the filter was biased towards the larger particles. This phenomenon leads to the belief that there was a large amount of $PM_{2.5}$ in the ambient air; when, in fact, the "true" $PM_{2.5}$ concentration was much lower than what was measured. This was especially true of the dusts with larger MMDs (corn starch and wheat flour), which are representative of agricultural dusts.

Concentrations

The inlet concentrations for each test were found by dividing the mass captured on the TSP glass fiber filters by the volume of air that passed through the filters. The same process was used for each $PM_{2.5}$ filter to get the outlet concentrations. The inlet concentrations varied for each test, as well as between dusts. The mean and standard deviations for the inlet concentrations of each dust are shown in Table 2. The motor speed was set to turn the dust feeder disk at four revolutions per hour for corn starch and wheat flour. It was deduced from the lower inlet concentrations for wheat flour that the dust has larger particles that tend to settle out, instead of staying entrained throughout the chamber. For alumina, the dust feeder disk turned at approximately 1.5 revolutions per hour. Due to the high initial concentrations of alumina within the chamber, the motor speed had to be reduced. The higher concentration might be explained by alumina consisting of mostly smaller particles that stay entrained.

Another important factor affecting inlet concentrations is the shape factor of the particles in each dust. Wheat flour and corn starch have very similar particle densities (approximately 1.5 g/cm^3). Corn starch and wheat flour were fed into the dust chamber at the same rate; however, there was over three times the concentration of corn starch as wheat flour in the chamber. Shape factor is the obvious explanation. Nonspherical particles will settle more slowly than their equivalent volume spheres (Hinds, 1999). Wheat flour particles are most likely closer to spherical than those of corn starch. This would mean wheat flour has a smaller shape factor, close to one, while corn starch has a larger shape factor.

AED is converted from ESD by the square root of the particle density over the shape factor. For dusts that have the same particle density, one with a smaller shape factor would result in higher AEDs. Therefore, the wheat flour most likely has a larger MMD than reported, while the corn starch has a smaller MMD.

The average and standard deviations for the outlet concentrations are shown in Table 3. For every dust, the WINS measured the smallest outlet concentration, followed by the High-Volume $PM_{2.5}$ sampler. The FRM with SCC measured the largest. The same increasing pattern could be seen with the standard deviations.

Statistical Analysis

For each dust, the inlet concentrations were calculated for each trial. The outlet concentrations were calculated for each sampler as well. The inlet concentration varied between each test. This might be explained by the recirculation of dust in the chamber. Human error involved in the filling of the dust feeder may have also contributed. The outlet concentrations from each $PM_{2.5}$ sampler were normalized in order to compare results between samplers. For every trial, normalization was achieved by dividing the outlet concentration for each sampler by the corresponding inlet concentration. This gives a ratio of the $PM_{2.5}$ measured by each sampler over the TSP for each test.

A split-plot design was used to statistically compare the results from each sampler in each type of dust. The whole plot treatment was the ten tests that were ran for each dust and the whole plot experimental units were the three $PM_{2.5}$ samplers. The three test dusts were the subplot experimental units. This design allowed for comparisons between the samplers to be made, as well as the determination of any interaction between samplers and the dust sampled. Outliers in the normalized data were removed as to not bias the results of the analysis. Outliers were defined as any data points more than three standard deviations away from the mean. A SAS program was written to compare results between samplers and dusts.

Tests of fixed effects for the dust, samplers, and, most importantly, interaction between the dust and samplers were performed. The results indicated that there were significant interactions between dust and samplers with 95% confidence. Since there were significant interactions, the comparison of whole-plot means at a fixed level of the sub-plot factor could be made. These data were used to determine whether there were significant differences between the least-square means of the normalized results from the three samplers, while in the presence of the same dust.

All comparisons were made using a 95% confidence level. Results showed that while sampling alumina, there was significant difference between the means of the FRM with WINS and the other two samplers, but no difference between the means of the FRM with SCC and High-Volume $PM_{2.5}$ samplers. According to these results, if a FRM sampler with WINS, a FRM sampler with SCC, and a High-Volume $PM_{2.5}$sampler sampled simultaneously in an urban environment, the FRM with WINS results would not statistically agree with the other two samplers' results. However, the FRM with SCC and High-Volume $PM_{2.5}$ sampler would return results that statistically agree. This research showed that, according to the EPA's requirements for designation of a reference or equivalent method for monitoring $PM_{2.5}$ concentrations, neither the FRM with SCC nor the High-Volume $PM_{2.5}$ sampler would be adequate. Although the High-Volume $PM_{2.5}$ sampler is not an EPA-approved $PM_{2.5}$ sampler, the SCC (when used in conjunction with a FRM sampler) was designated by the EPA as an equivalent method and is currently used to monitor $PM_{2.5}$ concentrations in the ambient air.

The statistical analysis also showed there were significant differences between the mean results of all the samplers when sampling wheat flour. If these samplers simultaneously sampled in an agricultural environment, the concentration measurements from each sampler would differ. However, when sampling corn starch, there was no significant difference between the means. It should be noted the within-sample variations for the normalized data were large. Data in which between-sample variability is small relative to the within-sample variability is more likely to be presumed as statistically agreeing.

Discussion

Coulter Counter analysis of the PM captured on the TSP filters showed 0.46% $PM_{2.5}$ for corn starch, 0.92% $PM_{2.5}$ for wheat flour, and 5.34% $PM_{2.5}$ for alumina. Using the inlet concentrations, the "true" concentration of $PM_{2.5}$ in the ambient air can be found. For example, if a TSP sampler measured a total concentration of 1000 ⌠g/scm, and 10% was $PM_{2.5}$, there would be 100 ⌠g/scm of $PM_{2.5}$ in the ambient air. If an "ideal" $PM_{2.5}$ sampler samples at the same time as the TSP sampler, it should measure 100 ⌠g/scm. This research showed the tested $PM_{2.5}$ samplers are not "ideal," and would not measure the $PM_{2.5}$ concentration in the ambient air accurately.

To determine the accuracy of the tested $PM_{2.5}$ samplers, the error between the "true" $PM_{2.5}$ concentration and the concentration measurements from the samplers were calculated. The exact $PM_{2.5}$ concentration contained in each dust for every trial, found using the Coulter Counter data and the inlet concentrations, was considered to be the "true" $PM_{2.5}$ concentration. This was compared to the $PM_{2.5}$ concentration measurements for each $PM_{2.5}$ sampler in the corresponding trial. Table 4 shows the average percent error and standard deviation for every sampler in the three dusts. All of the samplers' concentration results exceeded the "true" $PM_{2.5}$ concentrations. The FRM with WINS sampled the best, followed by the High-Volume $PM_{2.5}$ sampler and FRM with SCC, respectively. Although the FRM with WINS performed better than the other two tested $PM_{2.5}$ samplers, it still does not accurately monitor $PM_{2.5}$ concentrations in either urban or agricultural dusts. However, the error terms increased with the MMD of the dust, as did the standard deviation. The sampler's performance worsens when sampling agricultural dusts. This could be detrimental to the agricultural industry if these samplers were used to determine if an agricultural facility meets the NAAQS.

Methods for monitoring the concentration of $PM_{2.5}$ in ambient air are examined by the EPA. Methods that are determined to meet specific requirements for adequacy are designated as either reference or equivalent methods. However, the accuracy of a considered method is defined in a relative sense. The accuracy is defined as the degree of agreement between a subject field $PM_{2.5}$ sampler and a collocated $PM_{2.5}$ reference method audit sampler operating simultaneously at the urban monitoring site location of the subject sampler. If the results from both methods statistically agree, then the subject field $PM_{2.5}$ sampler is deemed accurate enough to become a reference or equivalent method. However, the samplers are not tested in the presence of agricultural dusts, which have much larger MMDs than urban dusts.

It is assumed that the performance characteristics of a sampler do not depend on the MMD of the ambient air. The results of this research show otherwise. The error terms for each of the three $PM_{2.5}$ samplers tested increased as the MMD of the sampled dust increased. The FRM with SCC, an equivalent method, measured over nineteen times (average) the actual concentration of $PM_{2.5}$ when sampling wheat flour. Errors such as these can be detrimental to agriculture. Most agricultural dusts contain very little, if any, particles with an AED of 2.5 μm or smaller. EPA set the short-term $PM_{2.5}$ standard at 65 μg/scm. If the EPA wished to monitor the concentration of $PM_{2.5}$ at the property line of a cotton gin, where the actual concentration of $PM_{2.5}$ was 10 μg/scm, a FRM with SCC might be used. If the PM released by the cotton gin had an MMD similar to that of wheat flour, instead of measuring a property line concentration of 10 μg/scm, it may measure 190 μg/scm. If inaccurate measurements such as these continued, the cotton gin would exceed the short-term $PM_{2.5}$ standard. Since the government believes the facility is not meeting the NAAQS, it could impose fines, the addition of costly abatement equipment, or possibly even the closure of the facility in order to decrease the inaccurately measured property-line concentration of $PM_{2.5}$. These high additional costs are unfair to the ginner and can be avoided by the use of a more accurate method for sampling $PM_{2.5}$.

Inappropriate regulation of agriculture will continue as long as the EPA uses inaccurate $PM_{2.5}$ samplers to monitor concentrations of $PM_{2.5}$ at the property lines of agricultural facilities. A more appropriate sampling method needs to be implemented, as well as a better determination of reference or equivalent methods. The standard in which EPA determines the accuracy of a subject sampling method needs to be modified. Testing should be carried out in agricultural environments, as well as urban. Sampling in a controlled laboratory environment, in order to avoid the inaccurate sampling of agricultural dusts, should also be included.

Conclusion

Three FRM with WINS, FRM with SCC, and High-Volume $PM_{2.5}$ samplers were tested in a controlled laboratory environment. They were tested with controlled concentrations of three dusts: alumina, corn starch, and wheat flour. The MMDs increased with each dust, respectively.

The dust chamber used had a duct for recirculating dust throughout the chamber. It was hypothesized this duct would increase the amount of fine particulates available for sampling. It was observed from the PSDs of the dusts entrained in the chamber that there was an increase in the fraction of smaller particles when compared to the PSDs of the packaged dusts. The PSDs of the entrained dust also showed a decrease in the MMDs. It was also discovered the PSDs of the entrained dust were not appropriately represented by a lognormal distribution, as normally accepted.

The inlet concentrations for each dust were found for every test. The mean concentrations varied from dust to dust. It was hypothesized the variations were due to the shape factor of the dust particles. The shape factor of a particle helps describe the physical properties of the particle, such as settling rate and adhesion, and is important in the conversion of ESD to AED.

The shape factor of alumina particles was known; however, no shape factor data could be found in the literature for either corn starch or wheat flour particles. Corn starch and wheat flour have very similar particle densities. It was believed, because of the smaller concentrations of wheat flour in the chamber when fed at an equal rate as corn starch, that the wheat flour particles have a shape factor close to that of a sphere (1.0) and corn starch has a larger shape factor. The addition of a shape factor when converting ESD to AED can move a MMD to the left or right, which is important when classifying dusts.

The outlet concentrations were also found for each test. In order for the results to be statistically analyzed, the data were normalized by dividing the outlet concentration by the inlet concentration. The analysis showed there were significant interactions between dusts and samplers. It was concluded from the analysis that the results from the three tested samplers statistically agreed when sampling in the presence of corn starch, but did not when sampling wheat flour. Also, in the presence of alumina dust, the FRM with SCC and the High-Volume $PM_{2.5}$ sampler statistically agreed, although neither results agreed with those from the FRM with WINS. The High-Volume $PM_{2.5}$ sampler is not mandated for government use, but the FRM with SCC is. According to these results, the FRM with SCC should not have met the EPA's accuracy requirements for a reference or equivalent $PM_{2.5}$ monitoring method.

The filters from the samplers used in this research contained a great amount of larger particles, as shown by the outlet PSDs for each test. It is believed that when sampling dusts with large MMDs (as agricultural dusts do), the larger particles overwhelm the preseparator, allowing them to penetrate. This may also cause smaller particles to be captured, instead penetrating the preseparator as they should. The larger particles on the filter, which have a greater mass, will lead to an inaccurate measure of the concentration of $PM_{2.5}$ in the ambient air.

The accuracy of the tested $PM_{2.5}$ samplers was determined by finding the error between the concentration measurements for the samplers and the "true" $PM_{2.5}$ concentrations. The percentage of $PM_{2.5}$ in the ambient air was taken from the inlet PSDs, and using the inlet concentrations, the "true" concentration of $PM_{2.5}$ in the air was found. This, along with the concentration measured by the sampler, was used to calculate the percent error for each test. Results showed the error and standard deviation increased as the MMD of the sampled dust increased. The WINS had the smallest error terms, followed by the High-Volume $PM_{2.5}$ sampler and the SCC, respectively. Standard deviations also increased in this pattern.

The results of this research showed as the MMD of a dust increased, the performance of the $PM_{2.5}$ samplers decreased. Subject field $PM_{2.5}$ samplers are tested by the EPA and their accuracy defined compared to the performance of a collocated FRM with WINS, when sampling simultaneously in an urban environment. If their results statistically agree, the subject sampler could be deemed as an equivalent or reference method used for monitoring the concentration of $PM_{2.5}$ in the ambient air.

The agricultural industry generates dusts with much larger MMDs than urban dusts. According to the results from these experiments, if any of the tested samplers were used to find property line concentrations for agricultural facilities, the concentration measurements would greatly exceed the true $PM_{2.5}$ concentration. This could prove detrimental to the agriculture industry. Inaccurate sampling of agricultural dusts would bring about the unneeded and unfair regulation of agriculture facilities, resulting in high, unnecessary costs. The EPA needs to implement a more appropriate sampling method for monitoring the $PM_{2.5}$ concentration in the ambient air, as well as a better determination of reference or equivalent methods. The EPA's standard for determining the accuracy of a subject method needs to be modified. Testing of subject methods should be performed in a controlled laboratory setting, as well as in both urban and agricultural environments.

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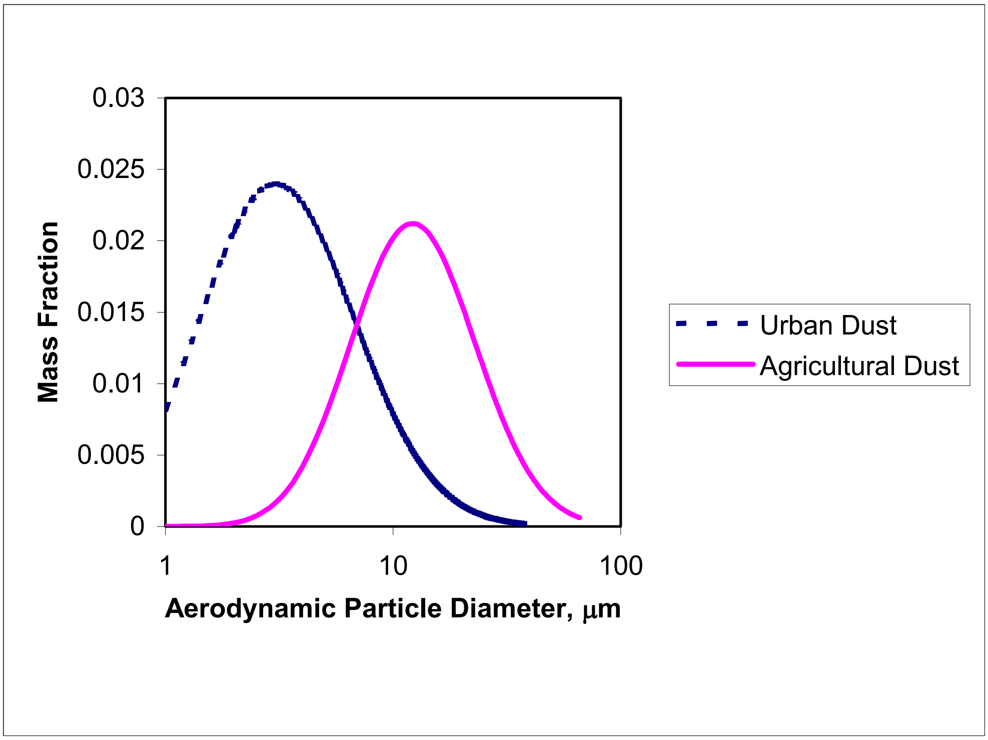

Figure 1. Particle size distributions of urban dust (MMD=5.7, GSD=2.25) and agricultural dust (MMD=18, GSD=1.9).

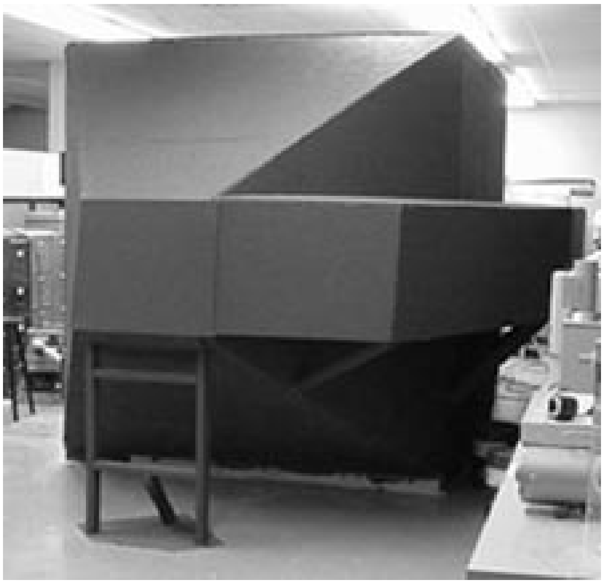

Figure 2. Back view of dust chamber showing one 45° transition and the connected duct.

Figure 3. Inside view of chamber, showing sampler set-up and air straightener located between one transition and cube body of chamber.

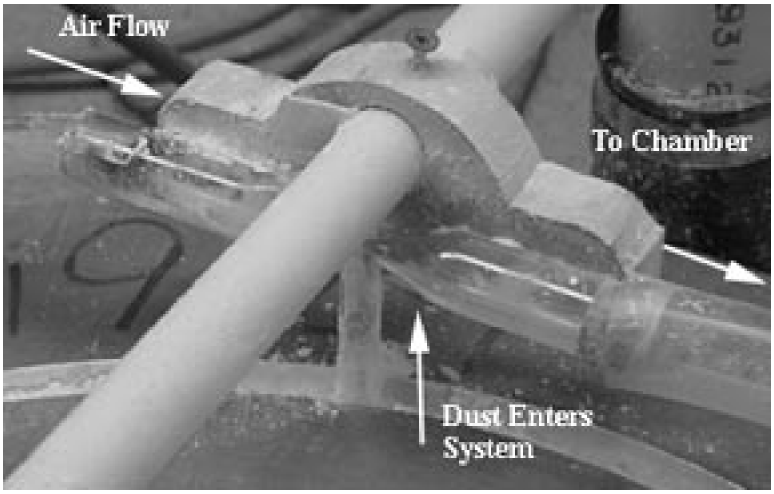

Figure 4. Venturi tube that is used to move dust from disk into chamber.

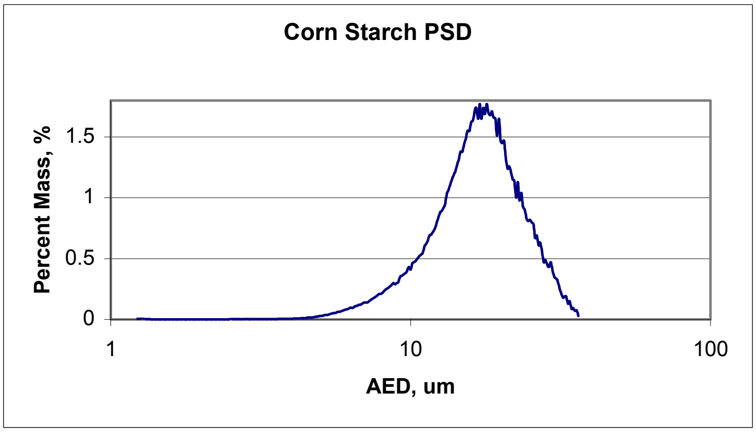

Figure 5. CCM PSD of corn starch.

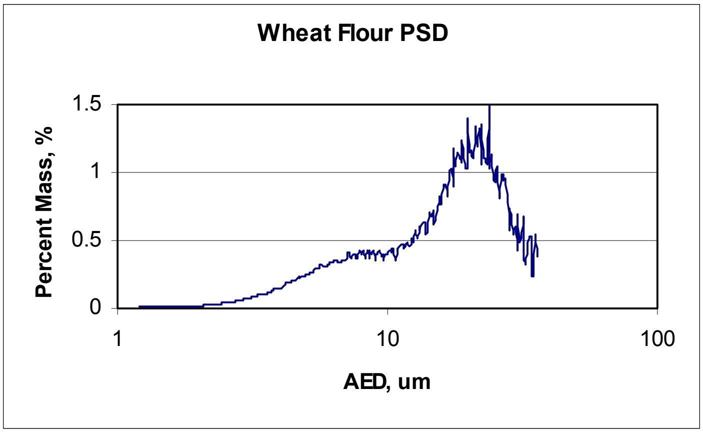

Figure 6. CCM PSD of wheat flour.

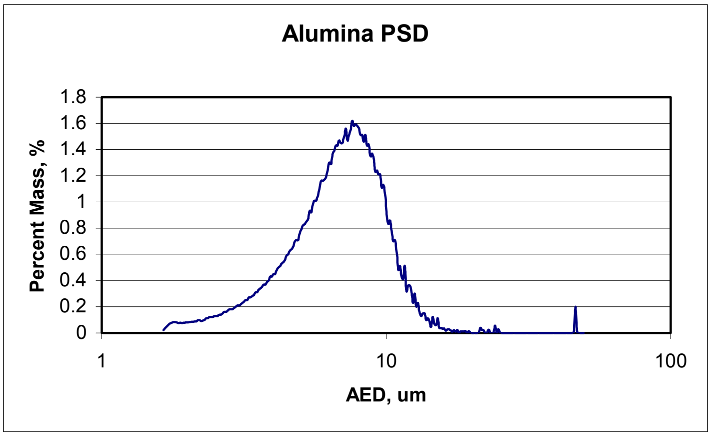

Figure 7. CCM PSD of F1200 brown fused aluminum oxide.

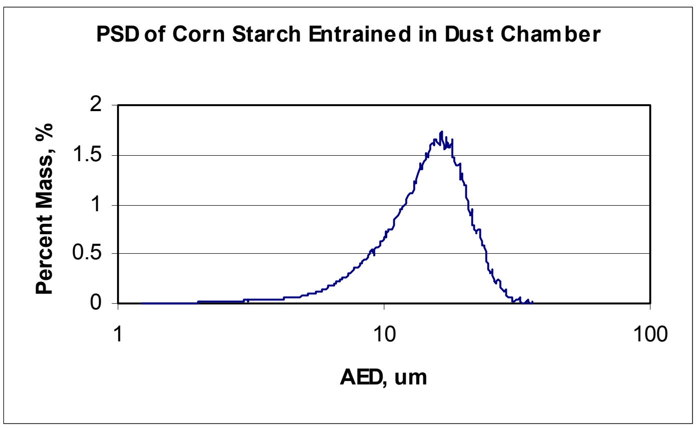

Figure 8. CCM PSD of corn starch as sampled by TSP sampler, representative of entrained dust.

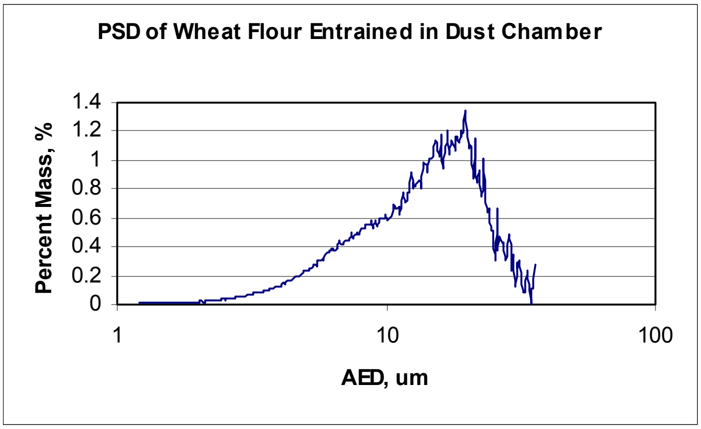

Figure 9. CCM PSD of wheat flour as sampled by TSP sampler, representative of entrained dust.

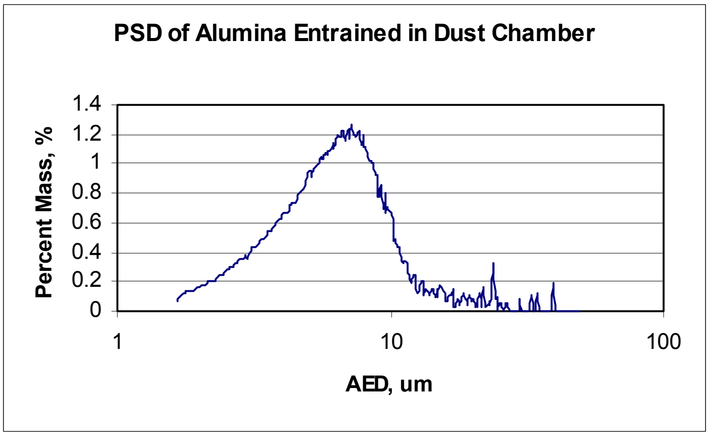

Figure 10. CCM PSD of alumina as sampled by TSP sampler, representative of entrained dust.

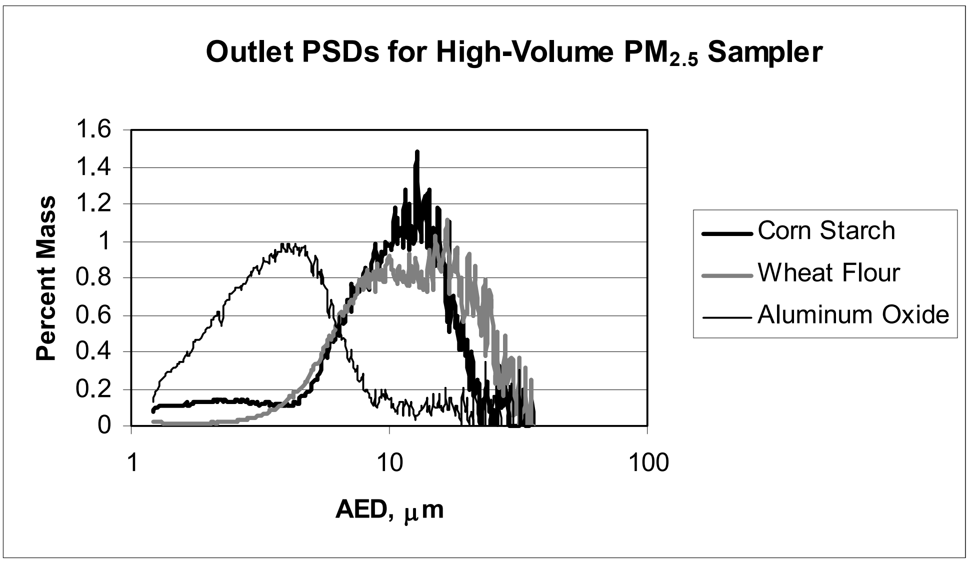

Figure 11. High-Volume $PM_{2.5}$ sampler outlet PSDs for each of the three dusts used in testing.

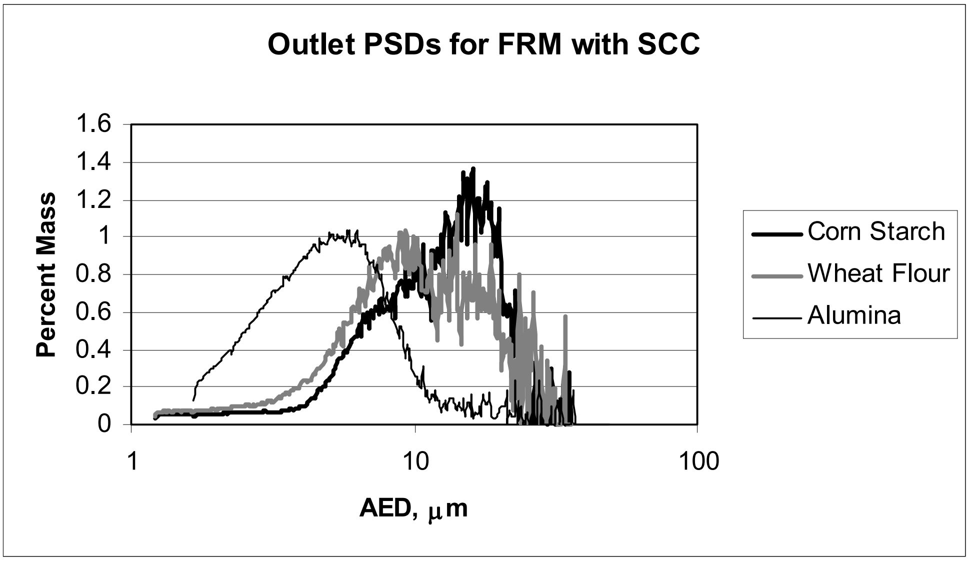

Figure 12. FRM with SCC outlet PSDs for each of the three dusts used in testing.

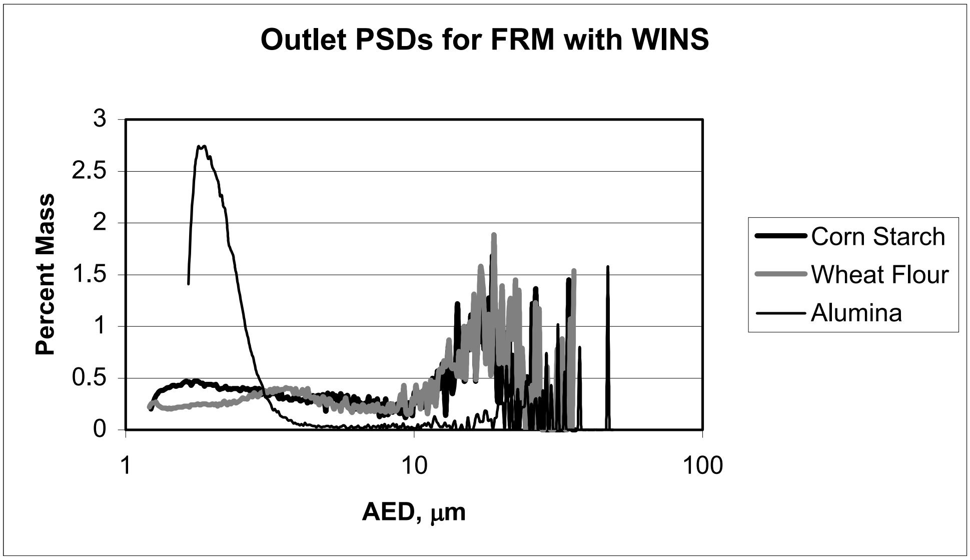

Figure 13. FRM with WINS outlet PSDs for each of the three dusts used in testing.

Appendix E SAFETY DATA SHEETS

Please refer to the associated OneDrive Link for all SDS.

Appendix F EXEMPTION LETTER

Stantec

Stantec

Memo

To:	Dennis Achey 6556 Simpkin Lane Marsing, Idaho 83639	From:	Eric Clark 727 East Riverpark Lane, Suite 150 Boise, Idaho 83706
File:	203701094	Date:	March 10, 2020

Reference: Amvac Chemical Corporation – Exemption Determination

Mr. Achey:

The following memorandum outlines Stantec's findings as it pertains to air quality permitting applicability for Amvac Chemical Corporation (Amvac) located in Marsing, Idaho. Based on our understanding of the facility's process, emissions and the Idaho exemption rules, Amvac does not require an air quality permit for the process lines that include only criteria pollutants. As discussed in the associated Permit to Construct application, other process lines that contain state-regulated toxic air pollutants require a permit.

Exemption Criteria

The state of Idaho air rules identifies specific criteria a facility must meet to be considered exempt. These rules are outlined in section 220-223 and in part section 210. Each section is outlined and discussed in terms of Amvac.

IDAPA 58.01.01.220

GENERAL EXEMPTION CRITERIA FOR PERMIT TO CONSTRUCT EXEMPTIONS

*01. **General Exemption Criteria**. Sections 220 through 223 may be used by owners or operators to exempt certain sources from the requirement to obtain a permit to construct. Nothing in these sections shall preclude an owner or operator from choosing to obtain a permit to construct. For purposes of Sections 220 through 223, the term source means the equipment or activity being exempted. For purposes of Sections 220 through 223, fugitive emissions shall not be considered in determining whether a source meets the applicable exemption criteria unless required by federal law. No permit to construct is required for a source that satisfies all of the following criteria, in addition to the criteria set forth at Sections 221 and 223 or 222 and 223 (as required):*

a. The maximum capacity of a source to emit an air pollutant under its physical and operational design without consideration of limitations on emission such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed would not:

i. Equal or exceed one hundred (100) tons per year of any regulated air pollutant.

ii. Cause an increase in the emissions of a major facility that equals or exceeds the significant emissions rates set out in the definition of significant at Section 006.

b. Combination. The source is not part of a proposed new major facility or part of a proposed major modification.

*02. **Record Retention**. Unless the source is subject to and the owner or operator complies with Section 385, the owner or operator of the source, except for those sources listed in Subsections 222.02.a. through 222.02.g., shall maintain documentation on site which shall identify the exemption determined to apply to the source and verify that the source qualifies for the identified exemption. The records and documentation shall be kept for a period of time not less than five (5) years from the date the exemption determination has been made or for the life of the source for which the exemption has been determined to apply, whichever is greater, or until such time as a permit to construct or an operating permit is issued which covers the operation of the source. The owner or operator shall submit the documentation to the Department upon request.*

Amvac meets the criteria set forth in sections 220.01.a and b as emissions are less than 100 ton/yr of a regulated pollutant and are not considered a major facility. Also, this project is not part of a major modification. Additionally, Amvac needs to abide with the criteria set forth in section 220.02 by maintaining appropriate records.

IDAPA 58.01.01.221 Category 1 Exemption

No permit to construct is required for a source that satisfies the criteria set forth in Section 220 and the following:

*01. **Below Regulatory Concern**. The maximum capacity of a source to emit an air pollutant under its physical and operational design considering limitations on emissions such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed shall be less than ten percent (10%) of the significant emission rates set out in the definition of significant at Section 006.*

*02. **Radionuclides**. The source is not required to obtain approval to construct in accordance with the applicable radionuclides standard in 40 CFR Part 61, Subpart H.*

*03. **Toxic Air Pollutants**. The source shall comply with Section 223.*

*04. **Mercury**. The source shall have potential emissions that are less than twenty-five (25) pounds per year of mercury. Fugitive emissions shall not be included in the calculation of potential mercury emissions.*

The Amvac facility consists of two process lines that consists of fungicide/insecticide chemicals or herbicide chemicals. Flowable or suspendable concentrates (SC) that comprise of adding an active ingredient into a liquid emulsion, used to formulate seed coatings, foliar sprays, in-furrow fungi or insecticide control as well as to formulate SCs for the control of weeds.

Additionally, Amvac operates a flour-based pellet process line. In the case of the extrusion of pellets, the equipment used in all stages of its production have dust and crumb capture spots and, except for make-up air, the entire process is considered a closed system.

Reference: Amvac Chemical Corporation – Exemption Determination

Amvac develops several powdered insecticides, fungicides, and herbicides. All chemicals are formulated with a ratio of 30-40% powder with a mixture of water and other inert liquids. They are developed in flowable single batches of approximately 3,000 gallons. Emissions from each fungicide/insecticide batch are controlled by a Donaldson Torit filter. Manufacturer control efficiency minimum is 98.3% for $PM_{2.5/10}$, respectively. The facility operates four Donaldson Torit control units. Additionally, there is a Mac Flo control filter, also with a $PM_{2.5/10}$ manufacturer efficiency of 98.3% that operates for all herbicide flowables.

Each controlled batch for either herbicide or fungicide/insecticide operates for 90 minutes. Amvac has conducted operating tests to determine how much powder is captured during each batch run regardless of chemical flowable. Internal test results demonstrated that six pounds of powder was retained in each batch. It was calculated that 6.102 lb of the material becomes airborne, 6 is captured by the appropriate filter with 0.102 lb being released in a 90 minutes timeframe. The 0.102 lb was derived from a minimum control efficiency of 98.3%. Amvac powders also have a calculated $PM_{2.5}/PM_{10}$ percentage of total PM of 50% and 50%, respectively which was derived a sieve analysis conducted by the facility. See attached for details.

Emission calculations assume that each process line is operated simultaneously (2 flowable lines and the 1 flour line). It also assumed that each line operates continuously (8,760 hr/yr) throughout the year. This does not represent reality but was applied for conservative purposes. The total number of flowable annual batches was determined as follows:

$$8{,}760\,\frac{hr}{yr} \div 1.5\,\frac{hr}{batch} \times 2\ lines = 11{,}680\ \frac{batches}{yr}$$

Amvac utilizes nineteen flowables that do not contain any regulated pollutant other than particulate matter. Therefore, the 11,680 total batches were allocated evenly across each of the nineteen products. Hourly $PM_{2.5/10}$ emissions were determined by taking the maximum rate of each of nineteen flowables at each line for 90 minutes. Annual emissions are aggregated for all flowables.

The total particulate emissions of the flour pellets were calculated by applying the manufacturer control concentration (0.005 grain/dscf) and a maximum flow rate of 10,000 cubic feet per min. The maximum lb/hr emission rate was calculated to be 0.43, which equates to 3,754 lb/yr (1.88 tpy) of total particulate. A Texas A&M University study was utilized for flour particle distribution. Total Suspended Particulate wheat flour showed that the percentage of PM_{10} is 28.9% and $PM_{2.5}$ is 0.92%.

Based on all elements described above, it was determined that all criteria pollutants are well below regulatory concern as defined in section 221.01 (see Table 1).

Table 1 – Criteria Pollutants

	Potential to Emit tons per year					
Emission Unit	**PM_{10}**	**$PM_{2.5}$**	**NO_x**	**CO**	**SO_2**	**VOC**
Flowables	0.53	0.53	N/A	N/A	N/A	N/A
Flour Pellets	0.54	0.02	N/A	N/A	N/A	N/A
Total	**1.07**	**0.55**	**N/A**	**N/A**	**N/A**	**N/A**
BRC Threshold	**1.5**	**1.0**	**4.0**	**10.0**	**4.0**	**4.0**

1. Note that Amvac has other process lines that emit TAPs within four products, which also emits a very small amount of PM. This are included into the flowable totals. For further details regarding the TAPs refer to the associated PTC application for these four products.

Radionuclides, regulated TAPS and mercury are not emitted by Amvac within the seven products applied to the three process lines. As a result, Amvac complies with rules 221.02 through 221.04.

223. EXEMPTION CRITERIA AND REPORTING REQUIREMENTS FOR TOXIC AIR POLLUTANT EMISSIONS.

No permit to construct for toxic air pollutants is required for a source that satisfies any of the exemption criteria below, the recordkeeping requirements at Subsection 220.02, and reporting requirements as follows:

01. Below Regulatory Concern (BRC) Exemption. The source qualifies for a BRC exemption if the uncontrolled emission rate (refer to Section 210) for all toxic air pollutants emitted by the source is less than or equal to ten percent (10%) of all applicable screening emission levels listed in Sections 585 and 586.

02. Level I Exemption. To obtain a Level I exemption, the source shall satisfy the following criteria:

a. The uncontrolled emission rate (refer to Section 210) for all toxic air pollutants shall be less than or equal to all applicable screening emission levels listed in Sections 585 and 586; ***or***

b. The uncontrolled ambient concentration (refer to Section 210) for all toxic air pollutants at the point of compliance shall be less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586.

03. Level II Exemption. To obtain a Level II exemption, the maximum capacity of a source to emit a toxic air pollutant under its physical and operational design considering limitations on emissions such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed at the point of compliance is less than or equal to ten percent (10%) of all applicable screening emission levels listed in Sections 585 and 586.

Each of the three process lines discussed earlier do not emit any regulated TAPs as defined by IDAPA sections 585/586. Therefore, the requirements of Section 223 do not apply to the Amvac process lines. However, there are four chemical products that do emit some TAPs on a separate process line(s). It was determined that process line(s) does not meet the Level I or Level II exemption. As a result, a PTC application has been submitted to address that process line(s).

Conclusion

Stantec believes that the non-TAP flowable process lines and the flour process line are exempt from state of Idaho air quality permitting requirements. Please let me know if you have any questions. Thank you.

Eric E. Clark

Eric Clark
Project Engineer
Phone: (208) 388-4324
eric.clark@stantec.com

Attachment: Emission Inventory, SDSs, Supporting Documentation

c. KellyW@amvac.com; JohnR@amvac.com; mzygmont@kmcllaw.com; pnunez@kmcllaw.com

APPENDIX B – FACILITY DRAFT COMMENTS

The following comments were received from the facility on June 12, 2020:

Facility Comment: The flour PM_{10} in Table 4.2 of the permit states 0.52 tpy for the flour PM_{10} and needs to state 0.542 tpy.

DEQ Response: It was a typo. Table 4.2 in the permit will be updated for the flour PM_{10} to state 0.542 tpy. Also, tables 4, 5, and 8 of the SOB will be updated to reflect the change as well.

APPENDIX C – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company:	**Amvac Chemical Corporation**
Address:	**6556 Simpkin Ln.**
City:	**Marsing**
State:	**Idaho**
Zip Code:	**83639**
Facility Contact:	**Dennis Achey**
Title:	**Site Manager**
AIRS No.:	**073-00016**

N	Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
Y	Did this permit require engineering analysis? Y/N
N	Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM10	1.1	0	1.1
VOC	0.0	0	0.0
Total:	0.0	0	**1.1**
Fee Due	**$ 2,500.00**		

Comments:

The following comments were received from the facility on June 12, 2020:

Facility Comment: The flour PM_{10} in Table 4.2 of the permit states 0.52 tpy for the flour PM_{10} and needs to state 0.542 tpy.

DEQ Response: It was a typo. Table 4.2 in the permit will be updated for the flour PM_{10} to state 0.542 tpy. Also, tables 4, 5, and 8 of the SOB will be updated to reflect the change as well.