West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Permitting Action Under 45CSR30 and Title V of the Clean Air Act
(Group 4/8)
(Aldicarb)

Permit Number: **R30-03900007-2005**
Application Received: **October 8, 1996**
Plant Identification Number: **03900007**
Permittee: **Bayer CropScience, LP**
Facility Name: **Institute Site**
Mailing Address: **P.O. Box 1005**
Institute, WV 25112

Physical Location:	Institute, Kanawha County, West Virginia
UTM Coordinates:	432.0 km Easting • 4,248.3 km Northing • Zone 17
Directions:	The facility is located west of Institute, WV, adjacent to State Route 25 and West Virginia State University.

Facility Description

Bayer CropScience, an agricultural chemical based company, operates a multi-product, multi-process chemical plant. The Plant has five basic manufacturing units along with several other production facilities primarily responsible for producing raw materials used in the manufacture of agricultural chemicals. The principal products produced at the Institute site are SEVIN brand carbaryl, TEMIK brand aldicarb, LARVIN brand thiodicarb, methomyl, RHODIMET AT-88, oxamyl, BPMC, Carbofuran, and Carbosulfan.
SIC Codes: 2879; 2869

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Criteria Pollutants	**Potential Emissions (Group 4)**	**2001 Actual Emissions (Group 4)**
Carbon Monoxide (CO)	0	0
Nitrogen Oxides (NO_X)	0	0
Particulate Matter (PM_{10})	0	0
Total Particulate Matter (TSP)	0	0
Sulfur Dioxide (SO_2)	0	0
Volatile Organic Compounds (VOC)	0.434	0.303
PM_{10} is a component of TSP.		
Hazardous Air Pollutants	**Potential Emissions (Group 4)**	**2001 Actual Emissions (Group 4)**
Hydrogen Chloride	0.473	0.463
Some of the above HAPs may be counted as PM or VOCs.		

Title V Program Applicability Basis

This facility has the potential to emit over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs. Due to this facility's potential to emit over 10 tons per year of a single HAP and over 25 tons per year of aggregate HAPs, (Bayer CropScience) is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

Group 4 at this facility* has been found to be subject to the following applicable rules:

Federal and State:	45CSR1	NOx budget trading program. (#2 Powerhouse – Group 1)
	45CSR6	Open burning prohibited.
	45CSR7	Particulate Matter emissions
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for construction, modification, relocation, etc.
	45CSR16	New Stationary Sources
	45CSR21	Volatile Organic Compound emissions
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 60	Tanks NSPS
	40 C.F.R. Part 61	Asbestos inspection and removal

	40 C.F.R. Part 63 MMM	Pesticide Active Ingredient (PAI) MACT
State Only:	45CSR4	No objectionable odors.
	45CSR27	Toxic Air Pollutants

*Other groups at this facility may be subject to additional applicable state and federal rules.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	**Date of Issuance**	**Permit Determinations or Amendments That Affect the Permit *(if any)***
R13-793	5/13/1985	
CO-R27-92-12	4/30/1992	
CO-R21-97-4	2/19/1997	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

Aldicarb

1. 45CSR6 - *To Prevent and Control Air Pollution from Combustion of Refuse.*
   The maximum allowable particulate matter that may be discharged from any incinerator into the open air is limited by the requirements in 45CSR6. To convert to lbs/hr to determine the corresponding 45CSR6 limit:

   The emission limitation from 45CSR§6-4.1 is:
   Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)

   The Flare (242A) Incinerator Capacity (tons/hr) is 6.98 tons/hr. The F factor is 5.43. Therefore, the corresponding particulate matter limit (via 45CSR6-4.1) is (6.98*5.43) equal to 37.9 lbs/hr. This is given in Condition 4.1.7.

   The facility uses natural gas as fuel for the flare to burn waste VOC gases, so there is essentially no particulate matter that is expected to be generated by this process, which is much less than the 37.9 lbs/hr that they are currently allowed to emit. Therefore, compliance with the PM limit shall be shown by ensuring that the flare is operating correctly. Condition 4.1.6 requires that the flare operate at all times during the Aldicarb process, as well as maintain a minimum fuel flow to the flare of 250 pounds per hour in order to perform correct combustion. Condition 4.2.2 requires that the facility continuously monitor the flame flare presence, as well as the gas flow. Condition 4.4.2 requires the facility keep records of any time that the flare pilot is absent, as well as natural gas usage of the flare.

   The flare is also subject to the opacity limits of Rule 6. The permittee is required to conduct monthly 40 CFR 60, Appendix A, Method 22 visible emissions observations (Method 22 observations). If during

these observations or at any other time, visible emissions appear, a Method 9 evaluation must be conducted within twenty-four (24) hours unless corrective action is taken and recorded. The permit provides for reduced periodic visual observations following collection of sufficient readings to show that the flare meets opacity limits. The permittee is required to keep appropriate records of all evaluations, observations, and corrective actions. Based on the EPA's approval of similar provisions for other like facilities, WVDAQ believes that the periodic monitoring approach for this facility is appropriate.

2. 45CSR7 - *To prevent and control PM air pollution from manufacturing processes and associated operations*

   The Flare (242A) is subject to the mineral acids limit of 4.2. The corresponding limit is 210 milligrams HCl per dry cubic meter. At normal operations, the design rate estimates 19 milligrams per cubic meter. Condition 4.3.1 requires the facility to submit a protocol in order to verify the HCl emission rates within 60 days of the issuance date of the permit. By verifying the emissions at normal operation, as well as showing proper operation of the flare (see 1. above), this will ensure the facility meets the emission limits of 45CSR§7-4.2.

3. 45CSR13 – *Permits for Construction*
   The R13-793 application shows that all of the MIC is removed by the Scrubber (A-2732), and that all of the DCM is converted to HCl by the Flare (242A), during normal operations. In order to show compliance with the emission limits, it is necessary to limit the production to that listed in the application as well as the proper operation of the control devices.

   Condition 4.1.1 limits the amount of MIC and DCM that the facility can use per batch. Condition 4.1.2 limits the number of batches, and amount of material per batch. Condition 4.1.3 requires that the facility use the control devices at all times the Aldicarb process is running. Condition 4.4.1 requires the facility to keep records of the amount of MIC and DCM used per batch, the total batch size, and the number of batches.

   Condition 4.1.5 and 4.1.6 set the operating conditions for the scrubber and flare. Condition 4.2.1 requires the facility to monitor the scrubber aqueous caustic solution, the pressure drop, and the liquor flow rate in order to show that it is operating correctly. Condition 4.2.2 requires the facility to continuously measure the combustion temperature and to continuously monitor the presence of flame in the flare in order to show that it is operating correctly. Condition 4.4.2 requires the facility to record any times that the flare is not operating, and to keep natural gas records of the fuel usage.

5. 40CFR63 Subpart MMM - PAI MACT – *Pesticide Active Ingredient MACT*
   Bayer CropScience is subject to the Pesticide Active Ingredient MACT. All of the applicable standards, testing, monitoring, recordkeeping, and reporting requirements for the equipment and for equipment leaks have been incorporated into this permit.

6. 40CFR Subpart 60 Kb - Tanks
   The storage tanks subject to 40CFR60 Subpart Kb are also subject to the storage tank provisions of 40CFR63 Subpart MMM. 40CFR63.1360(i)(3) states that storage tanks that are subject to Subpart Kb are only required to comply with the provisions of Subpart MMM, which are included in the Permit.

7. 45CSR21 – *Prevent and Control Air Pollution From the Emission of Volatile Organic Compounds*
   The facility has an existing Rule 21 consent order that is applicable to this Group. For the Aldicarb Group, the facility must use Leak Detection and Repair (LDAR) monitoring that is as stringent as 45CSR§21-37 or 40CFR63, Subpart H. The applicable requirements for this subpart is attached as Appendix A.

8. 45CSR27 – *Prevent and Control Air Pollution From the Emission of Toxic Air Pollutants*
   The facility has the Potential to Emit Methylene Chloride (listed as Dichloromethane by the facility) of greater than 5,000 lbs/yr. Therefore they are subject to Rule 27. The facility has an existing Rule 27 Consent Order that incorporates the Best Available Technology Plan, along with Methylene Chloride limits for the flare 242A. These Methylene Chloride limits are given in Condition 4.1.20. To show

compliance with the fugitive emission limits Leak Detection and Response Program will be used regarding Methylene Chloride to minimize fugitive emissions. This is given in Condition 4.1.19, which incorporates the requirement from the Consent Order. To show compliance with the Methylene Chloride limits from the Consent Order, Condition 4.1.1 limits the amount of Methylene Chloride that the facility can use per batch. Condition 4.1.2 limits the number of batches, and amount of material per batch. Condition 4.1.3 requires that the facility use the control devices at all times the Aldicarb process is running. Condition 4.4.1 requires the facility to keep records of the amount of Methylene Chloride used per batch, the total batch size, and the number of batches.

Condition 4.1.5 and 4.1.6 set the operating conditions for the scrubber and flare. Condition 4.2.1 requires the facility to monitor the scrubber aqueous caustic solution, the pressure drop, and the liquor flow rate in order to show that it is operating correctly. Condition 4.2.2 requires the facility to continuously measure the combustion temperature and to continuously monitor the presence of flame in the flare in order to show that it is operating correctly. Condition 4.4.2 requires the facility to record any times that the flare is not operating, and to keep natural gas records of the fuel usage.

There are additional flare requirements that come from the PAI MACT and included in the Permit.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. 40CFR Subpart 63 MMM – PAI MACT (Condensers/Scrubber/HCL)
   The MACT has provision for condensers used as control devices. However, Condenser A-3100 is used to recover DCM and return it to a product storage tank where it is later used as product. Therefore, this condenser is not a control device and is not subject to the PAI MACT.
   40CFR63.1362(b)(2)(iv)(B) allows a flare to be used as an alternative to the process vent requirements that would regulate the scrubber. Therefore, the MACT conditions for scrubbers do not apply.
   40CFR63.1362(b)(3) limits HCL emissions for a Group 1 process vent. However, the process vent with HCl does not have the PTE to emit HCl greater than 6.8 Mg/yr, so it is not subject to 40CFR63.1362(b)(3).

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: March 15, 2006
Ending Date: April 14, 2006

All written comments should be addressed to the following individual and office:

Mike Egnor
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 – 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

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Response to Comments (Statement of Basis)

Not applicable.