West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03900007-2010**
Application Received: **November 25, 2009**
Plant Identification Number: **03900007**
Permittee: **Bayer CropScience, LP**
(Powerhouses/Maintenance/WWTU/Laboratory)
(Group 1 of 8)
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 • 4,248.310 km Northing • Zone 17
Directions:	The facility is located west of Institute, WV, adjacent to State Route 25 and West Virginia State University

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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

Group Description

The facility was divided into 8 Title V Permits. They were broken down as follows:
Group 1 – Powerhouses, Maintenance, Wastewater Treatment Unit, Laboratories
Group 2 – Rhodimet
Group 3 – Carbofuran Unit, Carbosulfan Unit
Group 4 – Aldicarb, BPMC, Oxamyl
Group 5 – Polymers (Note this process was closed in 2004 and no Title V Group 5 Permit was issued)

Group 6 – Larvin Unit
Group 7 – Naphthol Unit, PANA, Jet
Group 8 – Phosgene, MIC, SEVIN

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	**Potential Emissions (Group 1)**	**2008 Actual Emissions (Facility Wide)**
Carbon Monoxide (CO)	193	70
Nitrogen Oxides (NO_X)	3,456	2,526
Particulate Matter (PM_{10})	185	33.7
Total Particulate Matter (TSP)	523	67.3
Sulfur Dioxide (SO_2)	11,143	3,371
Volatile Organic Compounds (VOC)	57	117
PM_{10} is a component of TSP.		
Hazardous Air Pollutants	**Potential Emissions (Group 1)**	**2008 Actual Emissions (Facility Wide)**
Hydrogen Chloride	190.2	112.4
Hydrogen Fluoride	23.8	13.9

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 459 TPY of CO, 6,951 TPY of NOx, 185 TPY of PM10, 11,143 TPY of SO2, 620 TPY of VOC's, and 920 TPY of Total HAP's. Due to this facility's potential to emit over 100 tons per year of CO, NOx, SO2, VOC's, 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 1 at this facility* has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Particulate Matter emissions
	45CSR6	Open burning prohibited.
	45CSR7	Particulate Matter emissions
	45CSR10	SO2 Air Emissions

	45CSR11	Standby plans for emergency episodes.
	45CSR13	
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR40	Control of Ozone Season NOx
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 63 EEE	National Emissions Standards for Hazardous Air Pollutants from Hazardous Waste Combustors
	40 C.F.R. Part 64	Compliance Assurance Monitoring
	40 C.F.R. Part 75 Subpart H	NOx Mass Emissions Provisions
State Only:	45CSR4	No objectionable odors.
	45CSR42	Greenhouse Gas Emissions Inventory Program

*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, 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)*
R13-0277	1/27/1977	
R13-2001B	1/26/2009	
R13-2190A	1/20/2000	
R13-1033	8/31/1988	
R13-1248	7/23/1990	
R13-1308A	2/10/2009	
CO-R40-C-2010-7	3/12/2010	

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

This is a renewal of the Title V permit. The following changes have been made to the most recent version of this Permit:

Powerhouse No.1

1. 40 CFR Part 63 Hazardous Waste Combustor MACT EEE – *National Emissions Standards for Hazardous Air Pollutants from Hazardous Waste Combustor*
Boilers 3 and 4 are subject to the 40CFR63 Subpart EEE Hazardous Waste Combustors MACT. These boilers are classified as existing liquid fuel boilers. The emission limits are given in Condition 4.1.13. The Permittee performed an initial comprehensive performance test (CPT) in January and May 2009. The applicable operating parameter limits are given in Condition 4.1.15. However, these results have not been certified by EPA or WV DEP, and as such, may change, and the facility would be required to operate under the new operating parameter limits and modify this Title V Permit if necessary. Condition 4.1.14 shows the calculations used to determine the Destruction and Removal Efficiency (DRE) of the Boilers. Condition 4.1.16 requires the Permittee to determine the as-fired heating value of each batch of hazardous waste, and that they are subject to the thermal emission concentration standards, which are more stringent than the mass or volume emission concentration standards. Condition 4.1.17 requires that the boilers automatically cut off whenever a operating parameter limit as specified in Condition 4.1.15 is exceeded. Condition 4.1.18 requires the Permittee to comply with any changes in design, operation, or maintenance as provided in 40CFR§63.1206(b)(5). Condition 4.1.19 references combustion system leak provisions as listed in 40CFR§63.1206(c)(5). Condition 4.1.20 requires the permittee to develop and maintain an operator training and certification program. Condition 4.1.21 requires the Permittee to implement and maintain an operation and maintenance plan. Condition 4.1.22 requires the Permittee to develop and implement a feed stream analysis plan and record it in the operating record. Condition 4.1.23 requires a continuous monitoring system (CMS) performance evaluation plan. Conditions 4.2.5 through 4.2.9 require the establishment of rolling average limits for mercury, hydrogen chloride and chloride gas, maximum ash federate, semivolatile metals, and chromium. Conditions 4.2.10 through 4.2.14 require installation, calibration, maintenance, operations, and other requirements of the continuous emissions monitoring systems (CEMS), feed stream analysis requirements, and performance evaluation requirements. Condition 4.2.15 requires the Permittee to comply with the monitoring provisions identified in the Documentation of Compliance, which is listed in Table 6.1 in Condition 4.1.15. Condition 4.4.3 requires the Permittee to maintain a copy of the Start-up, Shutdown, and Malfunction (SSM) Plan on Site. Condition 4.4.4 requires a copy of all data recorded by continuous monitoring systems (CMS) as well as all notification, reports, plans, and other documents submitted. Condition 4.4.5 requires the permittee to maintain a record of changes that will not adversely affect compliance with the emission standards or operating requirements, and must document the change upon making such change. Condition 4.4.6 requires the permittee to keep a copy of any documentation of investigation and evaluation of excessive exceedances during malfunctions. Condition 4.4.7 requires the permittee to keep a copy of any documentation of investigation and corrective measures taken for any automatic waste feed cutoffs that result in an exceedances of an emission standard or operating parameter limit. Condition 4.4.8 through 4.4.11 require the Permittee to keep copies of any documentation and results of the automatic waste feed cutoff operability testing, Operator Training and Certification program, Operation and Maintenance (O&M) Plan, and Feedstream Analysis Plan. Condition 4.4.12 requires the Permittee to adhere to the Recordkeeping Requirements for Continuous Monitoring Systems (CMS). Condition 4.4.13 requires records of the Emergency Safety Vent operating plan in the operating record. Condition 4.4.14 requires records of any corrective measures for any emergency safety vent openings in the operating record. Condition 4.5.4 contains reporting requirements for compliance progress reports, periodic and/or immediate startup, shutdown, and malfunction reports, excessive emissions and continuous monitoring system (CMS) performance reports and summaries, startup, shutdown, and malfunction plan, excessive exceedances reports, and emergency safety vent opening reports.

Powerhouse No.2

1. **40 C.F.R. Part 64 – *Compliance Assurance Monitoring (CAM)***

The permittee will submit a CAM plan for Boilers 10, 11, and 12 to assure compliance with the 45CSR§2-4.1.a. and R13-0277 PM mass limitation, which is 50.0 lb/hr aggregated from the three units. Boilers 10, 11, and 12 are all pollutant-specific emission units (PSEUs) for the purposes of CAM. The PM emissions of Boilers 10, 11, and 12 are controlled by electrostatic precipitators (ESPs). The potential pre-control emissions of PM from each PSEU are greater than the major source threshold for PM. Thus, PSEUs meet all three applicability criteria given under 40 C.F.R. §§ 64.2(a)(1)-(3).

The Permittee will submit a CAM plan to suggest an opacity indicator range of zero to no more than 10% (the upper level to be determined by testing). The permittee shall develop a testing plan in order to establish an opacity range that demonstrates compliance with the PM limit. This is given in Condition 5.2.6. According to §64.4(e), this testing must be complete "prior to use of the monitoring." However, there is a deadline to implement the CAM monitoring. Testing *and* implementation of the monitoring (which includes the test result opacity range), must be complete within 180 days of issuance of the permit (§64.4(e)). The Permittee will perform testing to verify that 0-10% opacity will demonstrate compliance with the particulate matter mass emission limit. The CAM-related testing and CAM plan implementation will be conducted according to a schedule set forth in permit condition 5.2.6. Table 1 below summarizes the CAM plan.

Table 1 – CAM Plan for Steam Generators *Unit 1, 2* and 3

Elements of the CAM Plan	Indicator No. 1 of 1
I. GENERAL CRITERIA	Opacity
Monitoring Approach	Opacity is continuously measured and recorded by a certified opacity monitoring system (5.2.2.).
Indicator Range	The indicator range is zero to 10% opacity, and will be verified by testing (5.2.6.). Monitoring shall be implemented within 180 days of issuance of this renewal permit (5.2.6.(c)). Continuously measured opacity values are reduced to six-minute block averages (5.2.5.(a)). These 6-minute averages are averaged into 3-hour block average opacity values (5.2.5.(c)). An excursion is defined as two consecutive 3-hour block averages greater than 10% (5.2.5.(d)). Excursions trigger an inspection, evaluation, and corrective action (5.2.8.). Excursions are also included in the recordkeeping (5.4.7.), and reporting requirements (5.5.6.).
QIP threshold	If five (5) percent or greater of the 3-hour average COMS opacity values indicate excursions during a calendar quarter, the permittee must develop a QIP (5.2.10.(2)).
II. PERFORMANCE CRITERIA	
Specifications for obtaining representative data	The location of the opacity monitors is in accordance with 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1). The COMS was installed in accordance with PS-1. Therefore, the employed COMS must be used to comply with CAM (see §64.3(d)(1)), and §§64.3(a) and (b) are automatically satisfied when COMS is used (see §64.3(d)(2)(ii)). Refer to condition 5.2.2.
Verification of Operational Status	The COMS is not *new or modified monitoring equipment*; therefore, verification of operational status pursuant to §64.3(b)(2) is not applicable.
QA/QC Practices and Criteria	The COMS was installed and evaluated in accordance with PS-1. Zero and span drift are checked daily, and filter audits are performed in accordance with PS-1. §64.3(b)(3) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii). Refer to condition 5.2.2.
Monitoring frequency	The monitoring frequency is continuous (5.2.2., 5.2.11). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
Data Collection Procedure	The data are collected by a computerized data acquisition and handling system (DAHS). This system collects and retains all relevant opacity data (5.2.2., 5.4.7). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).

Elements of the CAM Plan	Indicator No. 1 of 1
Averaging Period	The averaging period is on a six-minute block basis (5.2.5.a.). These 6-minute averages are averaged into 3-hour block average opacity values (5.2.5.c.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).

Carbon monoxide
Boilers 10, 11, and 12 are not subject to CAM for carbon monoxide (CO) because the units do not use a control device to control CO emissions (cf. 40 C.F.R. §64.2(a)(2)).

Oxides of Nitrogen
Boilers 10, 11, and 12 are not subject to CAM for oxides of nitrogen (NOx) because such emissions from the units are subject to emission standards that apply solely under an emissions trading program that has been approved by the Administrator for NOx (cf. 40 C.F.R. §64.2(b)(1)(iv)).

Sulfur Dioxide
Boilers 10, 11, and 12 are not subject to CAM for sulfur dioxide (SO2) because the units do not use a control device to control SO2 emissions (cf. 40 C.F.R. §64.2(a)(2)).

Volatile Organic Compounds
Boilers 10, 11, and 12 are not subject to CAM for volatile organic compounds (VOC) because the units do not use a control device to control VOC emissions (cf. 40 C.F.R. §64.2(a)(2)).

Hazardous Air Pollutants
Boilers 10, 11, and 12 are not subject to CAM for hazardous air pollutants (HAPs) because the units are not subject to an emission limitation or standard for HAPs (cf. 40 C.F.R. §64.2(a)(1)).

2. 45CSR40 – Control of Ozone Season NOx
Consent Order CO-R40-C-2010-7 was issued to the facility under the Clean Air Interstate Rule 40CFR75, Subpart H. It regulates the emissions of NOx emissions during the Ozone Season. Boilers No. 10, 11, and 12 were allotted 6, 5, and 6 Allocation Allowances respectively. This is given in Condition 5.1.26. This equates into tons per Ozone Season of NOx emissions. If the Permittee does not exceed these NOx emissions during the ozone season, the remainder may be banked or traded. This is given in Condition 5.1.27. Condition 5.1.30 specifies how the Permittee calculates their NOx emissions for these boilers during the Ozone Season. Condition 5.2.4 describes the recertification procedures of testing the continuous monitoring of NOx, as well as quality control of the data. Condition 5.4.5 specifies the requirements for continuous emissions monitoring and reporting of the results.

Wastewater Treatment Unit/Maintenance/Laboratory

N/A

Non-Applicability Determinations

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

1. 45CSR1 – NOx Budget Trading Program
This rule has been repealed since the last modification of the Title V Permit. As such, the applicable requirements from the rule have been removed.

Powerhouse No.1

1. 40 C.F.R. Part 64 - Compliance Assurance Monitoring (CAM)

Group 1 (Powerhouses/Maintenance/WWTU/Laboratories) Boiler 3, 4, and 5 are in Powerhouse #1. Boilers 3 and 4 are subject to the Hazardous Waste Combustor MACT and therefore exempt from CAM via 40CFR§64.2(b)(i). This states that emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act are exempt from Compliance Assurance Monitoring. The Hazardous Waste Combustor MACT, 40CFR63, Subpart EEE was proposed after November 15, 1990. Boiler #5 is exempt because the unit does not use a control device to control emissions (via 40 C.F.R. §64.2(a)(2)), which says that CAM is not applicable if the unit does not use a control device to achieve compliance with any such emission limitation or standard.

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: November 3, 2010
Ending Date: December 3, 2010

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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601 57th Street SE
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Response to Comments (Statement of Basis)

Not applicable.