

ATTACHMENT F

# **Control Technology Plan for Bunge East's Marion, Ohio Conventional Soybean Plant**

**May, 2006**

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## 1.0 Introduction

This Control Technology Plan (CTP) is Attachment F to a Consent Decree signed by Bunge North America (East), L.L.C. (Bunge East), the United States, and the State of Ohio, among others. This CTP describes the emission reduction program that Bunge East shall implement at its conventional soybean extraction plant which it owns and operates in Marion, Ohio (Marion, Ohio Facility). This CTP contains:

- (a) Identification of all units to be controlled;
- (b) Engineering design criteria for all proposed controls;
- (c) Applicable emission limits for VOC and PM/PM10;
- (d) Monitoring parameters for all control equipment;
- (e) A schedule for installation;
- (f) Identification of units to be emission tested and definition of the test methods that will be used; and
- (g) A procedure for setting emission limits following start-up of emissions control equipment.

## 2.0 Program Summary

Bunge East shall implement a program with the goal of achieving a reduction of volatile organic compound (VOC) emissions from the soybean solvent extraction plant and particulate matter (PM/PM10) emissions from the grain elevator at the Marion, Ohio Plant.

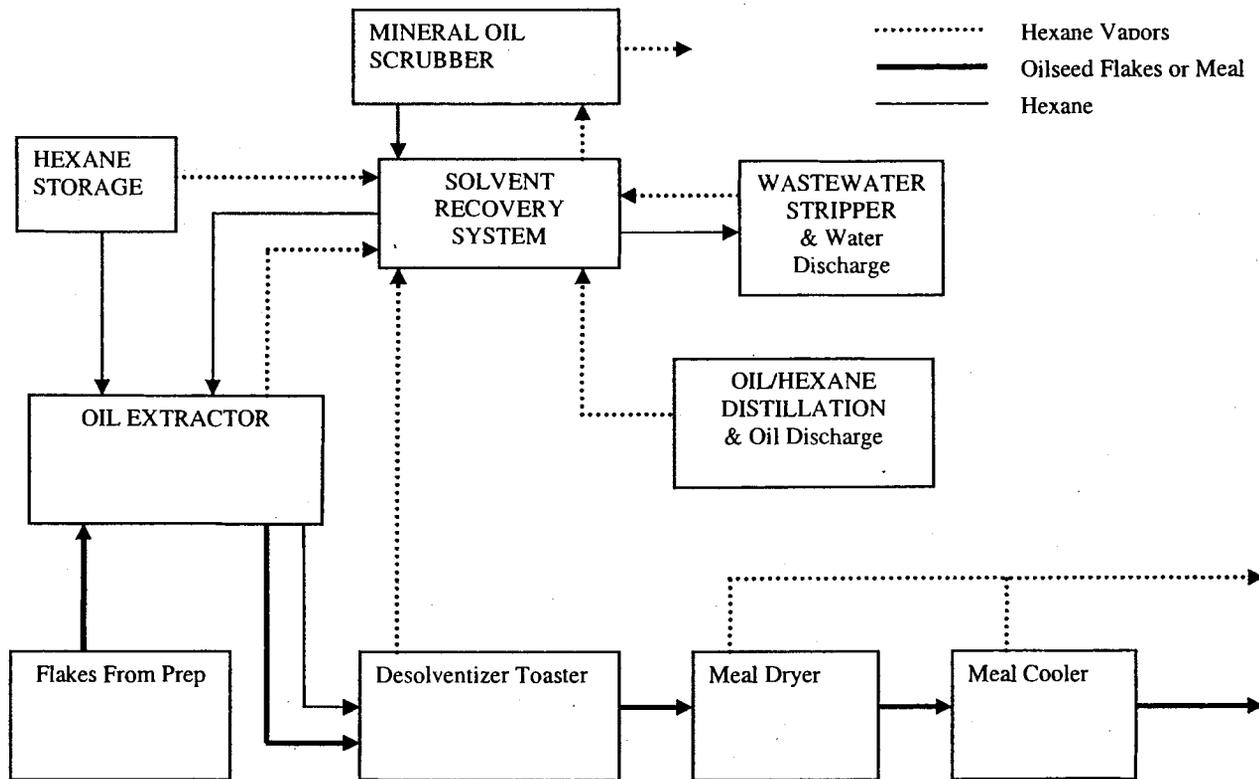
The VOC emission reduction component of this program consists of optimization of existing solvent recovery system equipment at its soybean processing plant. The optimization will aid the Marion, Ohio Plant in lowering overall VOC emissions. The VOC emission limit will be established pursuant to Section 10.0 of this CTP.

The PM/PM10 emission reduction component of this program consists of Bunge East modifying the existing RJ-Carter Day Filter system inside the grain elevator at its Marion, Ohio Soybean Plant. If the program reasonably meets the design criteria in Section 5.0 of this CTP, Bunge East will operate the baghouse according to the schedule in Section 8.0 of this CTP. The emission reduction benefits from this PM/PM10 project will be addressed in the final PM/PM10 emission limit for the baghouse, which will be established pursuant to Section 7.0 of this CTP.

3.0 Process Flow Diagrams

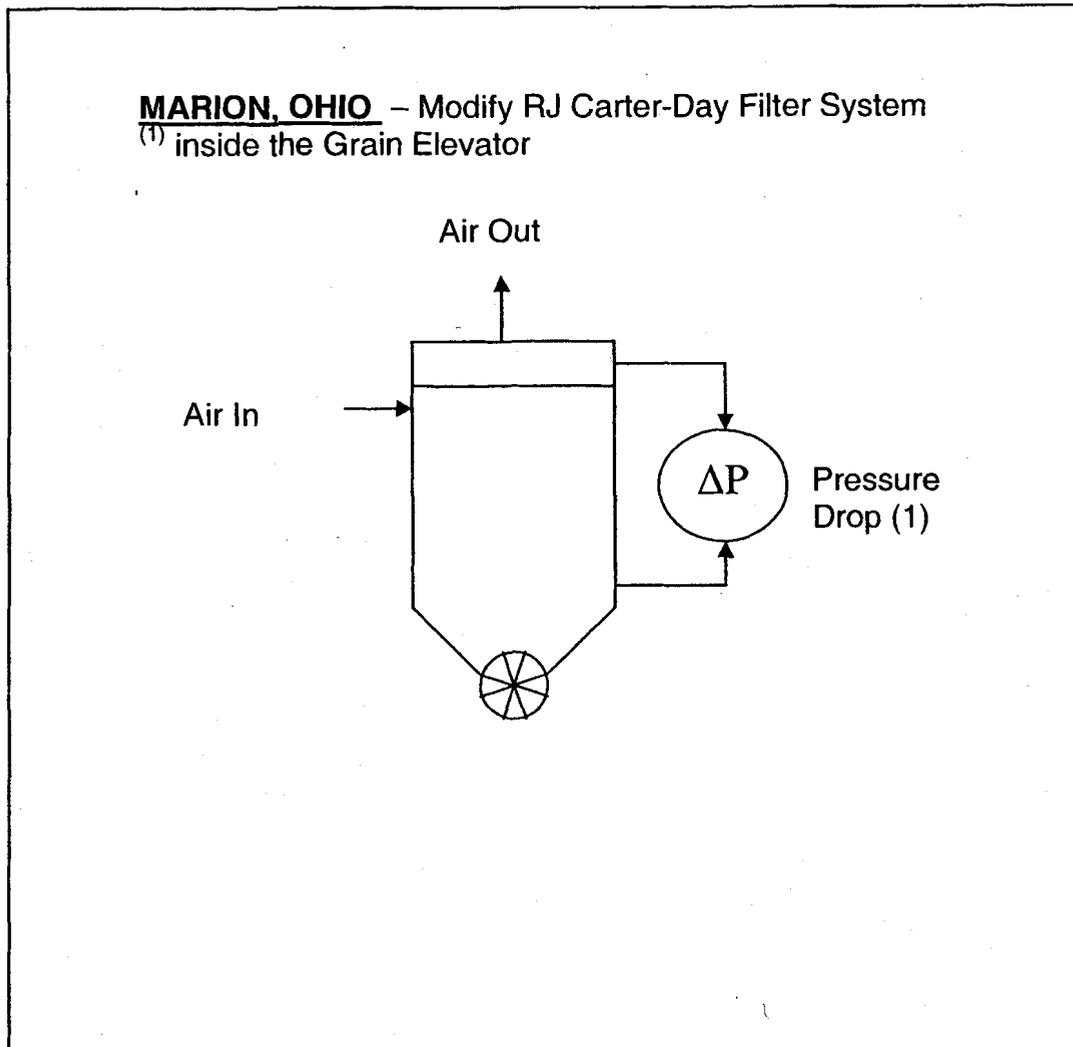
Diagram 3.1 General Process

The following process block diagram presents a general representation of the solvent extraction process at a typical Bunge East vegetable oil solvent extraction plant.



**Diagram 3.2. Process Flow Diagram Particulate Matter Reduction Project**

The following flow diagram presents the particulate matter (PM) control technology.



<sup>(1)</sup> The RJ Dust Filter System includes the existing RJ Dust Filter and all associated ductwork.

Modify RJ Dust Filter System inside the Grain Elevator to control particulate matter (PM/PM10)  
The Pressure Drop (1) of the RJ Dust Filter will be maintained within the range of 0.5 inches H<sub>2</sub>O to 8 inches H<sub>2</sub>O under normal operating conditions.

#### 4.0 Emission Units Requiring Pollution Control Equipment

The following emission unit and control equipment have been designated as affected units in the Consent Decree and have emission limits requiring either pollution control technology or an alternative project designed to reduce emissions as specified in this CTP. Changes to the requirements listed in the following table may be considered non-material modifications under Paragraph 5.b. of the Consent Decree, provided Bunge East (1) achieves the emission limits specified in this CTP and the Consent Decree for the Marion, Ohio Plant and (2) obtains prior written approval of the change(s) from EPA and the Ohio Environmental Protection Agency (OEPA) as provided in Paragraph 5.b of the Consent Decree.

Emission Unit Description	Control Equipment/Optimization Description
Baghouse for Grain Elevator (P025 North Aspiration)	Modification of RJ Carter-Day Filter System (PM/PM10)

**5.0 Engineering Design Criteria for Pollution Control Equipment**

Bunge East shall report any deviation from the design criteria listed here in the semi-annual reports required by Paragraph 47 of the Consent Decree and as required under other state and federal rules. Note that the specific design criteria listed here are preliminary and subject to change pending development of additional data. Changes to the requirements listed in the following table may be considered non-material modifications under Paragraph 5.b. of the Consent Decree, provided Bunge East (1) achieves the emission limits specified in this CTP and the Consent Decree for the Marion, Ohio Plant, and (2) obtains prior written approval of the change(s) from EPA and OEPA as provided in Paragraph 5.b. of the Consent Decree.

Emission Unit Description	Control Equipment/ Optimization Description	Design Criteria Targets
Baghouse for Grain Elevator (P025 North Aspiration)	Modification of RJ Carter-Day Filter System (PM/PM10)	0.01 grains/dry standard cubic foot <sup>(1)</sup>

<sup>(1)</sup> The estimated PM emission reductions will be approximately 3 tons per year, based on the increased capture of fugitive emissions.

Emissions of PM/PM10

$$\begin{aligned} \text{after controls} &= \text{baghouse outlet loading} \times \text{flow rate} \\ &= 0.00034 \text{ gr/scf} \times 21,700 \text{ cfm} \times 60/7000 \times 6276 \text{ hrs} \times 1 \text{ ton}/2000\text{lb} \\ &= 0.19 \text{ ton/yr} \end{aligned}$$

The 3.39 tons fugitive PM/year estimate and the 2.60 tons fugitive PM10/year estimate were both calculated using two out of the last five years that are representative of actual emissions at the Marion, Ohio Facility. The facility's processing quantities and related grain elevator emissions for 2001 and 2002 were deemed to be representative of a normal operational year (i.e., no abnormal shutdown periods). Therefore, as shown in the following table, the fugitive PM/PM10 emissions for the grain elevator that will be reduced with the modified RJ-Carter Day Filter system is approximately 3 tons/year.

Year	Fugitive PM Emissions (tpy)	Fugitive PM10 Emissions (tpy)
2001	3.63	2.84
2002	3.16	2.44
Avg	3.39	2.60

$$\begin{aligned} \text{PM} &= 3.39 \text{ tons} - 0.19 \text{ tons} = 3.20 \text{ tons /year reduction} \\ \text{PM10} &= 2.60 \text{ tons} - 0.19 \text{ tons} = 2.41 \text{ tons/year reduction} \end{aligned}$$

The modification of the RJ Carter-Day filter system will include: (a) resizing some of the dust aspiration ducts to increase aspiration efficiency; (b) installing gates on the existing dust aspiration ducts to legs #6, #7 and #8; (c) installing a dust aspiration duct to the scalper; (d) installing dust aspiration hoods and ducts to the south tripper belt conveyor; (e) installing solenoid gates on the scalper and south tripper dust aspiration ducts to provide a means of focusing dust aspiration to those items of equipment only when

they are operating; and (f) replacing some of the existing duct work to improve efficiency by eliminating aspiration air leaks.

#### 6.0 Monitoring Parameters for Pollution Control Equipment

Beginning no more than 30 days following startup of the control equipment described below or thirty days after lodging of the Consent Decree, whichever is later, Bunge East shall monitor the parameters listed below. Changes to the requirements listed in the following table may be considered non-material modifications under Paragraph 5.b. of the Consent Decree, provided Bunge East (1) achieves the emission limits specified in this CTP and the Consent Decree for the Marion, Ohio Plant and (2) obtains prior written approval of the change(s) from EPA and OEPA as provided in Paragraph 5.b. of the Consent Decree.

All monitoring data collected shall be recorded and maintained on-site. Bunge East shall report any deviation of monitoring frequency, record keeping and/or range in the semi-annual reports required by Paragraph 47 of the Consent Decree and as required under other state and federal rules.

Emission Unit Description	Control Equipment / Optimization Description	Parameter Monitored	Compliance Operating Range/Limit	Monitoring Frequency
Baghouse for Grain Elevator (P025 North Aspiration )	Modification of RJ Carter-Day Filter System (PM/PM10)	Pressure Drop	0.5 inches to 8 inches H <sub>2</sub> O, under normal operating conditions	Once per week

**7.0 Emission Limits**

The table below lists the emissions limits that must be met pursuant to the requirements of this CTP and the Consent Decree. Bunge East shall report any deviation from emission limits in the semi-annual reports required by Paragraph 47 of the Consent Decree and as required under other state and federal rules.

Emission Unit Description	Control Equipment/ Optimization Description	Pollutant	Emission Limit(s)
Baghouse for Grain Elevator (P025 North Aspiration )	Modification of RJ Carter-Day Filter System (PM/PM10)	PM/PM10	0.01 grains/dry standard cubic foot
Conventional Soybean Extraction System	N/A	VOC	Solvent Loss Ratio <sup>(1)</sup>

<sup>(1)</sup> The procedure for establishing this limit is outlined in Section 10.0 of this CTP.

**8.0 Schedules for Emission Reduction Projects**

Bunge East shall report any deviation from the applicable schedules in the semi-annual reports required by Paragraph 47 of the Consent Decree and as required under other state and federal rules.

The following schedule implements Paragraph 24 of the Consent Decree:

**Modify Filter for Baghouse**

Emission Reduction Project	Schedule
Modification of RJ Carter-Day Filter System (PM/PM10)	December 31, 2005

### 9.0 Pollution Control Equipment Performance Test Schedule and Test Methods

By no later than June 30, 2006, Bunge East shall conduct the following performance testing on the RJ Carter-Day Filter System.

Emission Unit / Pollution Control Device	Pollutant(s) Tested	Test Method
Baghouse for Grain Elevator (P025 North Aspiration) / RJ Carter-Day Filter System	PM/PM10	As applicable, Methods 1, 2, 3A or B, 4, and 5/202.

Testing for compliance or demonstration of emission limits shall be conducted in accordance with a protocol approved by EPA and OEPA. During source testing, Bunge East shall monitor, at a minimum, the operating parameters specified in Section 6.0 of this CTP.

No later than 60 days after the completion of the source testing, Bunge East shall submit an emissions report to OEPA.

Bunge East shall comply with the emission limit established in Section 7.0 of the CTP by June 30, 2006.

### 10.0 Procedures for Optimization of Control Equipment and Setting Emission Limits

#### Interim VOC SLR Emissions Limit

In accordance with Attachment A to the Consent Decree, Bunge East shall begin to account for solvent loss and quantity of oilseeds processed to comply with a 0.20 gal/ton VOC solvent loss ratio (SLR) at the Marion, Ohio Plant. The first compliance determination with this interim limit will be based on the first 12 operating months of data collected after the date on which Bunge East begins to account for solvent loss under this paragraph.

#### Final VOC SLR Emissions Limit

In accordance with Attachment A to the Consent Decree, Bunge East shall comply with a final VOC SLR limit for the Marion, Ohio Plant established according to the requirements of the VOC CTP for Defendants' Soybean Extraction Plants and Paragraphs 31 through 36 of the Consent Decree.