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MONSANTO COMPANY
AGRICULTURAL SECTOR
P.O. BOX 473
MUSCATINE, IOWA 52761
PHONE (319) 263-0093

September 29, 2000

The Performance Track Information Center
C/o Industrial Economics Incorporated
2067 Massachusetts Avenue
Cambridge, MA 02140

Enclosed is Monsanto Muscatine Plant's application for the National Environmental Achievement Track.

We look forward to acceptance and participation in NEAT. Monsanto's Muscatine Plant was one of the first OSHA VPP Star sites in Iowa. We have gained from the networking that takes place within the VPP community and look forward to similar benefits from participation in the NEAT program.

If you have questions or need additional information, please contact Tom Ward (319-262-7344) or Christy McGuire (319-262-7148)

Sincerely,

Oscar Berryman

Oscar Berryman
Plant Manager

A07-0007

National Environmental Achievement Track

Application Form

Monsanto Company - Muscatine, Iowa Plant
Name of facility

Monsanto Company
Name of parent company (if any)

2500 Wiggens Road
Street address

Street address (continued)

Muscatine, IA 52761
City/State/Zip code

Give us information about your contact person for the National Environmental Achievement Track Program.

Name Christy M. McGuire

Title Environmental Engineer

Phone (319) 262-7148

Fax (319) 262-5604

E-mail Christy.M.McGuire@Monsanto.com

Why do we need this information?

EPA needs background information on your facility to evaluate your application.

What do you need to do?

- Provide background information on your facility.
- Identify your environmental requirements.

1 What do you do or make at your facility?

Monsanto's Muscatine plant manufactures herbicide technical ingredients (alachlor, acetochlor, butachlor, propachlor, glyphosate), manufactures several organic materials used in the herbicide manufacturing and formulating processes (chloroacetyl chloride, n-isopropylamine), and formulates and packages herbicide technicals into liquid, encapsulated, and granular finished herbicide products (e.g. Roundup®, Lasso®, Degree Xtra®).

2 List the Standard Industrial Classification (SIC) code(s) or North American Industrial Classification System (NAICS) codes that you use to classify business at your facility.

SIC
2879 2869

NAICS
32532

3 Does your company meet the Small Business Administration definition of a small business for your sector?

☐ Yes ☒ No

4 How many employees (full-time equivalents) currently work at your facility?

☐ Fewer than 50

☐ 50-99

☐ 100-499

☒ 500-1,000

☐ More than 1,000

5 Does your facility have an EPA ID number(s)?

If yes, list in the right-hand column.

☒ Yes ☐ No

EPA NPDES Number: IA 0000205
RCRA ID Number: IAD005273594
MRIEPA Pesticide Establishment No.: 000524-IA-001
TRI Facility ID: 52761MNSNTWIGGI
RMP Facility ID: 1000 003 7845

6 Identify the environmental requirements that apply to your facility. Use the Environmental Requirements Checklist, at the back of the instructions, as a reference. List your requirements to the right ***or*** enclose a completed Checklist with your application.

7 Check the appropriate box in the right-hand column.

☐ I've listed the requirements above.

☒ I've enclosed the Checklist with my application.

8 Optional: Is there anything else you would like to tell us about your facility?

See attached supplemental information

Why do we need this information?

Facilities must have an operating Environmental Management System (EMS) that meets certain requirements.

What do you need to do?

- Confirm that your EMS meets the Achievement Track requirements.
- Tell us if you have completed a self-assessment or have had a third-party assessment of your EMS.

1 Check **yes** if your EMS meets the requirements for each element below as defined in the instructions.

a. Environmental policy ☒ Yes

b. Planning ☒ Yes

c. Implementation and operation ☒ Yes

d. Checking and corrective action ☒ Yes

e. Management review ☒ Yes

2 Have you completed at least one EMS cycle (plan-do-check-act)? ☒ Yes

3 Did this cycle include both an EMS and a compliance audit? ☒ Yes

4 Have you completed an objective self-assessment or third-party assessment of your EMS? ☒ Yes

If yes, what method of EMS assessment did you use?

☒ Self-assessment

☐ GEMI ☐ Other

☐ CEMP

☒ Third-party assessment

☐ ISO 14001 Certification

☒ Other Monsanto corporate audit using modified A.D. Little auditing protocols

Why do we need this information?

Facilities must show that they are committed to improving their environmental performance. This mec that you can describe past achievements and will mc future commitments.

What do you need to do?

Refer to the Environmental Performance Table in the instructions to answer questions 1 and 2.

1 Describe your past achievements for at least two environmental aspects. If you need more space than is provided, attach copies of this page.

Note to small facilities: If you qualify as a small facility as defined in the instructions, you are required to report past achievement for at least one environmental aspect.

First aspect you've selected

What aspect have you selected?	What was the previous level (2 years ago)?		What is the current level?	
	Quantity	Units	Quantity	Units
Total Energy Use	8963	BTU/lb product	5405	BTU/lb product

i. How is the current level an improvement over the previous level?

The quantity of energy required to produce one pound of product was reduced by 3558 BTU, a reduction of almost 40%.

ii. How did you achieve this improvement?

This was achieved in one production unit by an improvement to manufacturing process technology.

Second aspect you've selected

What aspect have you selected?	What was the previous level (2 years ago)?		What is the current level?	
	Quantity	Units	Quantity	Units
Total Water Use	5.04	gal/lb product	2.16	gal/lb product

i. How is the current level an improvement over the previous level?

The quantity of water required to produce 1 pound of product was reduced by 3.21 gallons, a reduction of 60%.

ii. How did you achieve this improvement?

This was achieved in one production unit by an improvement to manufacturing process technology.

2 Select at least four environmental aspects (no more than two from any one category) from the Environmental Performance Table in the instructions and then tell us about your future commitments. If you need more space than is provided, attach copies of this section.

Note to small facilities: If you are a small facility, you are required to make commitments for at least two environmental aspects in two different categories.

First aspect you've selected

a. What is the aspect? Total Energy Use

b. Is this aspect identified as significant in your EMS? ☒ Yes ☐ No

c. What is the current level? You may choose to state this as an absolute value or in terms of units of production or output.

☐ Option A: Absolute value (Quantity/Units)

☒ Option B: In terms of units of production or output 5405 BTU/lb product (Quantity/Units)

d. What is the improvement you are committing to over the next three years? You may choose to state this as an absolute value or in terms of units of production or output.	☐ Option A: Absolute value	(Quantity/Units)
	☒ Option B: In terms of units of production or output	3611 BTU/lb product (Quantity/Units)
e. How will you achieve this improvement?	A process that currently operates on a batch-wise basis will be changed to operate continuously through equipment modifications and process improvements. This will reduce electricity and steam generation needs.	

Second aspect you've selected

a. What is the aspect?	Total Water Use	
b. Is this aspect identified as significant in your EMS?	☒ Yes ☐ No	
c. What is the current level? You may choose to state this as an absolute value or in terms of units of production or output.	☐ Option A: Absolute value	(Quantity/Units)
	☒ Option B: In terms of units of production or output	2.16 gal/lb product (Quantity/Units)
d. What is the improvement you are committing to over the next three years? You may choose to state this as an absolute value or in terms of units of production or output.	☐ Option A: Absolute value	(Quantity/Units)
	☒ Option B: In terms of units of production or output	1.18 gal/lb product (Quantity/Units)
e. How will you achieve this improvement?	Equipment modifications and process improvements will reduce the amount of steam required for process operations and will allow the additional recycling of water within a process.	

Third aspect you've selected

a. What is the aspect?	Total Solid Waste	
b. Is this aspect identified as significant in your EMS?	☒ Yes ☐ No	
c. What is the current level? You may choose to state this as an absolute value or in terms of units of production or output.	☒ Option A: Absolute value	2400 tons/year (Quantity/Units)
	☐ Option B: In terms of units of production or output	(Quantity/Units)
d. What is the improvement you are committing to over the next three years? You may choose to state this as an absolute value or in terms of units of production or output.	☒ Option A: Absolute value	2400 tons/year (Quantity/Units)
	☐ Option B: In terms of units of production or output	(Quantity/Units)
e. How will you achieve this improvement?	As part of a significant process optimization effort, the generation of one waste stream will be eliminated.	

Fourth aspect you've selected

a. What is the aspect?	BOD Discharges to Water	
b. Is this aspect identified as significant in your EMS?	☒ Yes ☐ No	
c. What is the current level? You may choose to state this as an absolute value or in terms of units of production or output.	☐ Option A: Absolute value	(Quantity/Units)
	☒ Option B: In terms of units of production or output	0.3 lb/Klb product (Quantity/Units)
d. What is the improvement you are committing to over the next three years? You may choose to state this as an absolute value or in terms of units of production or output.	☐ Option A: Absolute value	(Quantity/Units)
	☒ Option B: In terms of units of production or output	0.2 lb/Klb product (Quantity/Units)

e. How will you achieve this improvement?

As part of a significant process optimization effort, the production of reaction by-products will be reduced. These by-products are discharged from the plant after treatment in an on-site Wastewater Treatment Plant.

Why do we need this information?

Facilities must demonstrate their commitment to public outreach and performance reporting. You should hav appropriate mechanisms in place to identify communi concerns, to communicate with the public, and to pro information on your environmental performance.

What do you need to do?

- Describe your approach to public outreach.
- List three references who are familiar with your facility.

1 How do you identify and respond to community concerns?

The Muscatine Plant is continually in contact with its neighboring communities. The Plant Manager maintains a Community Advisory Board where concerns and questions in the community are raised and addressed. Monsanto often participates in radio talk shows to help answer local questions about the plant and the business as well as to update the community with activities at Monsanto. Finally, if there are concerns in the community, Monsanto representatives will attend local town/city hall meetings to answer questions and address concerns. A community survey is conducted every 3-4 years.

2 How do you inform community members of important matters that affect them?

Immediate neighbors receive the plant newspaper with informal updates on plant activities, growth, and operations. Major plant events and announcements are communicated through local newspaper coverage. Newspaper advertisements and radio commercials are often sponsored in order to help educate the community about Monsanto. Community meetings are held when specific issues warrant a need (two in the past two years). See the attached Supplemental Information for additional plant efforts on community outreach.

3 How will you make the Achievement Track Annual Performance Report available to the public?

☐ Website www.

☐ Newspaper

☒ Open Houses

☒ Other

Share with our Community Advisory Panel

4 Are there any ongoing citizen suits against your facility?

☐ Yes ☒ No

If yes, describe briefly in the right-hand column.

5 List references below

	Organization	*Name*	*Phone number*
Representative of a Community/ Citizen Group	Muscatine County Conservation Commission	Curt Weiss	319-264-5922
State/Local Regulator	Iowa Department of Natural Resources, Air Quality Bureau Chief	Pete Hamlin	(515) 281-8852
Other community/local reference	Muscatine Community School District	Boyd Harrison	319-263-6141

On behalf of the Monsanto Muscatine Plant,
[my facility],

I certify that

- I have read and agree to the terms and conditions, as specified in the *National Environmental Achievement Track Program Description* and in the *Application Instructions*;

- I have personally examined and am familiar with the information contained in this Application (including, if attached, the Environmental Requirements Checklist). The information contained in this Application is, to the best of my knowledge and based on reasonable inquiry, true, accurate, and complete, and I have no reason to believe the facility would not meet all program requirements;

- My facility has an environmental management system (EMS), as defined in the Achievement Track EMS requirements, including systems to maintain compliance with all applicable federal, state, tribal, and local environmental requirements, in place at the facility, and the EMS will be maintained for the duration of the facility's participation in the program;

- My facility has conducted an objective assessment of its compliance with all applicable federal, state, tribal, and local environmental requirements, and the facility has corrected all identified instances of potential or actual noncompliance;

- Based on the foregoing compliance assessment and subsequent corrective actions (if any were necessary), my facility is, to the best of my knowledge and based on reasonable inquiry, currently in compliance with applicable federal, state, tribal, and local environmental requirements.

I agree that EPA's decision whether to accept participants into or remove them from the National Environmental Achievement Track is wholly discretionary, and I waive any right that may exist under any law to challenge EPA's acceptance or removal decision.

I am the senior facility manager and fully authorized to execute this statement on behalf of the corporation or other legal entity whose facility is applying to this program.

Signature/Date Oscar C. Berryman 9/29/00

Printed Name/Title Oscar C. Berryman, Plant Manager

Facility Name Monsanto Company - Muscatine, Iowa Plant

Facility Street Address 2500 Wiggens Road
Muscatine, IA 52761

Facility ID Numbers EPA NPDES Number: IA 0000205
RCRA ID Number: IAD005273594
MRIEPA Pesticide Establishment No.: 000524-IA-001
TRI Facility ID: 52761MNSNTWIGGI RMP Facility ID: 1000 003 7845

National Environmental Achievement Track

Environmental Requirements Checklist

The following Checklist is provided to assist facilities in answering Section A, "Tell us about your facility," Question 6. The Checklist is given to help facilities identify the major federal, state, tribal, and local environmental requirements applicable at their facilities. The Checklist is not intended to be an exhaustive list of all environmental requirements that may be applicable at an individual facility.

If you use this Checklist and choose to submit it with your application, fill in your facility information below and enclose the completed Checklist with your application (see instructions).

Facility Name	Monsanto Company, Muscatine Plant
Facility Location:	2500 Wiggins Road, Muscatine, Iowa 52761
Facility ID Number(s):	Iowa NPDES Permit: 70-00-1-02
(attach additional sheets	EPA NPDES Number: IA 0000205
if necessary)	RCRA ID Number: IAD005273594
	Iowa Sanitary Disposal Permit Number: 70-SDP-07-97P-INC
	Iowa Water Supply Permit Number: 7048161
	Iowa Water Withdrawal Permit Number: 3495-R2
	Iowa Water Withdrawal Permit Number: 5847-MRI
	EPA Pesticide Establishment Number: 000524-IA-001
	Iowa Pesticide Dealer License Number: PD 03669 000
	Iowa Air Quality Plant Number: 70-01-008
	Iowa EIQ Number: 92-3670
	TRI Facility ID: 52761MNSNTWIGGI
	Radioactive Materials License Number: 0149-1-70-FG
	Environmental Lab Certification Number: IALAB222
	RMP Facility ID: 1000 003 7845

Air Pollution Regulations	Check All That Apply
1. National Emission Standards for Hazardous Air Pollutants (40 CFR 61)	☒
2. Permits and Registration of Air Pollution Sources	☒
3. General Emission Standards, Prohibitions and Restrictions	☒
4. Control of Incinerators	☒
5. Process Industry Emission Standards	☐
6. Control of Fuel Burning Equipment	☒
7. Control of VOCs	☒
8. Sampling, Testing and Reporting	☒
9. Visible Emissions Standards	☒
10. Control of Fugitive Dust	☐
11. Toxic Air Pollutants Control	☒
12. Vehicle Emissions Inspections and Testing	☐

Other Federal, State, Tribal or Local Air Pollution Regulations Not Listed Above (identify)

13. Standards of Performance for Volatile Organic Liquid Storage Vessels (40 CFR 60 Subpart Kb) ☒
14. Protection of Stratospheric Ozone (40 CFR 82) ☒

Hazardous Waste Management Regulations

1. Identification and Listing of Hazardous Waste (40 CFR 261)
   - Characteristic Waste ☒
   - Listed Waste ☒
2. Standards Applicable to Generators of Hazardous Waste (40 CFR 262)
   - Manifesting ☒
   - Pre-transport requirements ☒
   - Record keeping/reporting ☒
3. Standards Applicable to Transporters of Hazardous Waste (40 CFR 263)
   - Transfer facility requirements ☐
   - Manifest system and record-keeping ☐
   - Hazardous waste discharges ☐
4. Standards for Owners and Operators of TSD Facilities (40 CFR 264)
   - General facility standards ☒
   - Preparedness and prevention ☒
   - Contingency plan and emergency procedures ☒
   - Manifest system, Record keeping and reporting ☒
   - Groundwater protection ☒
   - Financial requirements ☒
   - Use and management of containers ☐
   - Tanks ☒
   - Waste piles ☐
   - Land treatment ☐
   - Incinerators ☒
5. Interim Status Standards for TSD Owners and Operators (40 CFR 265) ☐
6. Interim Standards for Owners and Operators of New Hazardous Waste Land Disposal Facilities (40 CFR 267) ☐
7. Administered Permit Program (Part B) (40 CFR 270) ☒

Other Federal, State, Tribal or Local Hazardous Waste Management Regulations Not Listed Above (identify)

8. ☐
9. ☐

Hazardous Materials Management

1. Control of Pollution by Oil and Hazardous Substances (33 CFR 153) ☒
2. Designation of Reportable Quantities and Notification of Hazardous Materials Spill (40 CFR 302) ☒
3. Hazardous Materials Transportation Regulations (49 CFR 172-173) ☒

4. Worker Right-to-Know Regulations (29 CFR 1910.1200) ☒
5. Community Right-to-Know Regulations (40 CFR 350-372) ☒

Other Federal, State, Tribal or Local Hazardous Materials Management Regulations Not Listed Above (identify)

6. Chemical Accident Prevention (40 CFR 68) ☒
7. On-Site Containment of Pesticides, Fertilizers and Soil Conditioners ☒

Solid Waste Management

1. Criteria for Classification of Solid Waste Disposal Facilities and Practices (40 CFR 257) ☐
2. Permit Requirements for Solid Waste Disposal Facilities ☒
3. Installation of Systems of Refuse Disposal ☐
4. Solid Waste Storage and Removal Requirements ☐
5. Disposal Requirements for Special Wastes ☒

Other Federal, State, Tribal or Local Solid Waste Management Regulations Not Listed Above (identify)

6. ☐
7. ☐

Water Pollution Control Requirements

1. Oil Spill Prevention Control and Countermeasures (SPCC) (40 CFR 112) ☒
2. Designation of Hazardous Substances (40 CFR 116) ☒
3. Determination of Reportable Quantities for Hazardous Substances (40 CFR 117) ☒
4. NPDES Permit Requirements (40 CFR 122) ☒
5. Toxic Pollutant Effluent Standards (40 CFR 129) ☐
6. General Pretreatment Regulations for Existing and New Sources (40 CFR 403) ☐
7. Organic Chemicals Manufacturing Point Source Effluent Guidelines and Standards (40 CFR 414) ☒
8. Inorganic Chemicals Manufacturing Point Source Effluent Guidelines and Standards (40 CFR 415) ☐
9. Plastics and Synthetics Point Source Effluent Guidelines and Standards (40 CFR 416) ☐
10. Water Quality Standards ☒
11. Effluent Limitations for Direct Dischargers ☒
12. Permit Monitoring/Reporting Requirements ☒
13. Classifications and Certifications of Operators and Superintendents of Industrial Wastewater Plants ☐
14. Collection, Handling, Processing of Sewage Sludge ☐
15. Oil Discharge Containment, Control and Cleanup ☐
16. Standards Applicable to Indirect Discharges (Pretreatment) ☐

Other Federal, State, Tribal or Local Water Pollution Control Regulations Not Listed Above (identify)

17. Pesticide Chemicals Effluent Guidelines and Standards (40 CFR 455) ☒
18. ☐

Drinking Water Regulations

1. Underground Injection and Control Regulations, Crieria and Standards (40 CFR 144, 146) ☒
2. National Primary Drinking Water Standards (40 CFR 141) ☒
3. Community Water Systems, Monitoring and Reporting Requirements (40 CFR 141) ☐
4. Permit Requirements for Appropriation/Use of Water from Surface or Subsurface Sources ☒
5. Underground Injection Control Requirements ☒
6. Monitoring, Reporting and Record keeping Requirements for Community Water Systems ☐

Other Federal, State, Tribal or Local Drinking Water Regulations Not Listed Above(identify)

7. Operation of public, non-community water system ☒
8. ☐

Toxic Substances

1. Manufacture and Import of Chemicals, Record keeping and Reporting Requirements (40 CFR 704) ☒
2. Import and Export of Chemicals (40 CFR 707) ☒
3. Chemical Substances Inventory Reporting Requirements (40 CFR 710) ☒
4. Chemical Information Rules (40 CFR 712) ☒
5. Health and Safety Data Reporting (40 CFR 716) ☒
6. Pre-Manufacture Notifications (40 CFR 720) ☒
7. PCB Distribution Use, Storage and Disposal (40 CFR 761) ☒
8. Regulations on Use of Fully Halogenated Chlorofluoroalkanes (40 CFR 762) ☐
9. Storage and Disposal of Waste Material Containing TCDD (40 CFR 775) ☐

Other Federal, State, Tribal or Local Toxic Substances Regulations Not Listed Above (identify)

10. ☐
11. ☐

Pesticide Regulations

1. FIFRA Pesticide Use Classification (40 CFR 162) ☒
2. Procedures for Disposal and Storage of Pesticides and Containers (40 CFR 165) ☒
3. Certification of Pesticide Applications (40 CFR 171) ☐
4. Pesticide Licensing Requirements ☐

5. Labeling of Pesticides ☒
6. Pesticide Sales, Permits, Records, Application and Disposal Requirements ☒
7. Disposal of Pesticide Containers ☒
8. Restricted Use and Prohibited Pesticides ☒

Other Federal, State, Tribal or Local Pesticides Regulations Not Listed Above (identify)

9. ☐
10. ☐

Environmental Clean-Up, Restoration, Corrective Action

1. Comprehensive Environmental Response, Compensation and Liability Act (Superfund) (identify)

☐
☐

2. RCRA Corrective Action (identify)
Containment of contaminated groundwater, and operation of pump-and-treat system to remediate ☒

☐

Other Federal, State, Tribal or Local Environmental Clean-Up, Restoration, Corrective Action Regulations Not Listed Above (identify)

3. ☐
4. ☐

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Supplemental Information to National Environmental Achievement Track Application Monsanto Company – Muscatine, IA

Introduction

In response to Question 8, Section A of the National Environmental Achievement Track application, the Monsanto Muscatine Plant offers the following supplemental information. This information is intended to illustrate Monsanto's commitment to environmental performance – both in terms of meeting and/or exceeding regulatory requirements and in terms of sustainable manufacturing processes.

To effectively provide this information, the document is divided into the following main sections:

- A description of our Environmental Management System (EMS)
- A summary of our Pollution Prevention Program and examples of significant projects
- A description of our public outreach efforts

Additionally, we have attached the following items to this document to further illustrate this information:

- The Monsanto Muscatine Plant Environmental, Safety & Health (ESH) Compliance Policy;
- The Monsanto (Corporate) ESH Manual Table of Contents;
- The Monsanto (Corporate) ESH Vision and Guiding Principles document; and
- The Monsanto Muscatine Plant EMS Matrix.

Environmental Management System

The components of the Monsanto Muscatine Plant EMS are enabled by, and are consistent with, Monsanto's Corporate Environmental Safety and Health (ESH) Vision and Guiding Principles. The ESH Vision sets the overall direction for Monsanto's ESH performance, while the ESH Guiding Principles provide the framework for decision making for site ESH programs, policies and goals, and day-to-day operations. ESH programs and procedures in support of the Vision and Guiding Principles are incorporated in what is known as the Monsanto Environmental, Safety and Health Manual. To provide insight into the breadth of this manual's scope, we have provided its Table of Contents as Attachment 2 to this document. Furthermore, we have provided the ESH Vision and Guiding Principles document as Attachment 3 to help explain the foundation upon which our EMS is based.

The Monsanto Muscatine plant has had most elements of a comprehensive EMS in place for several years. However, a concerted effort to fill any potential gaps in this system was initiated in 1992. At that time, Monsanto at a corporate level undertook an exhaustive EMS benchmarking effort, and from that created a "world-class" ESH compliance process. From this process, individual Monsanto facilities were provided the opportunity to develop site-specific procedures and practices to help ensure compliance with both existing and new external and internal environmental requirements. This compliance "redesign" process contains the following major elements:

- Issue screening;
- Issue translation;
- Requirement implementation;
- Document management;
- Information tracking;
- Sharing lessons learned;
- Training; and
- Auditing.

The Monsanto Muscatine plant utilized this process to enhance its EMS beginning in 1994. The foundation of the EMS is a written policy approved by the plant manager, a copy of which is provided as Attachment 1 to this document.

Upon this basis, an EMS was formally defined and documented for the Monsanto Muscatine Plant. Below are some key elements of the Muscatine Plant EMS System:

- ESH Compliance Process – This is the basic EMS system for the Muscatine Plant to insure all ESH requirements are identified and addressed. The process is monitored by the ESH Compliance Process Leadership Group. This group issues the key procedures to implement the process (Requirement Owners and MCAP), maintains the list of plant requirements, insures that Requirement Owners are assigned, and provides training to MCAP Auditors, Area Representatives, and Requirement Owners.

- Muscatine Compliance Audit Program (MCAP) – This is an internal auditing program. Auditors are recruited and trained. Selected requirements are identified for auditing under MCAP. Auditing checklists are prepared by Requirement Owners; they also identify the areas where the requirement is applicable and select a frequency for the audits. A MCAP coordinator monitors when audits are due and schedules the audits.

- Air Permit Compliance Data Management System – The plant's two highly regulated air emission points (coal boiler and hazardous waste incinerator) have automated, daily reports generated to allow for a double check of compliance status by the Environmental Group.

- Process Alarms and Interlocks – Alarms have been programmed into the operating units' instrumentation to advise operating personnel if conditions approach a permit deviation; furthermore, in many cases an interlock will terminate a particular operation if necessary to avoid the deviation.

- Release Reduction – The Muscatine Plant began an initiative in 1999 called "Spill and Release Benchmarking" to identify best practices employed by Monsanto and other companies to minimize spills and releases. The team that was formed to develop this initiative determined criteria for "world class" in preventing spills and releases and then searched for facilities around the world that met this critieria. Questions were developed to seek out best practices in preventing spills and releases. These facilities were then contacted by phone and a smaller group was visited. Sites across the US and two in Europe were visited. A total of 44 recommendations were developed to implement in the Muscatine Plant. Work is active now on implementing these recommendations.

- Spill / Release Reporting - All instances of chemicals leaving their intended system (e.g., piping, etc.) are reported internally, regardless of the amount or material. These releases are then recorded in a central database to facilitate root cause analysis. The release data is available to each unit to allow for an internal review of their releases. Any incident in which 50% of an RQ is released is subjected to a thorough plant-wide incident investigation.

- Training – All unit operations personnel receive environmental training appropriate to their job assignments. Training is provided by several methods: computer based training, formal classroom training, mentor training (OJT), monthly safety meetings, small group sessions on specific topics. Training records are tracked in an Ingenium system. Area Training Coordinators track the training requirements for technicians in their units, assist them in receiving the training, and insure the training data base is updated.

- Taskman – Taskman is a computerized system used to track status and ensure completion of all plant ESH audit recommendations, Incident Analysis recommendations, PHA recommendations, regulatory compliance dates, etc.

- Waste Tracking - A system is in place to track all off site shipments for waste disposal. This system provides ready access to information on waste generation for areas to begin efforts in waste reduction.

- Plant Web Page – Numerous compliance tools are located on the plant web page which is accessible to all plant employees: Safety Manual, Environmental Manual, MSDS's, Spill/Release Log, etc.

- Management of Change – The plant has a formal MOC procedure to track all process changes. Additionally, all capital projects (and process changes which have a potential

environmental impact) are reviewed by plant Environmental Staff with an "environmental checklist" to ensure that all environmental aspects are properly addressed prior to implementation.

The examples provided above are intended to illustrate how the Monsanto Muscatine Plant EMS has been implemented. In Section E of the National Environmental Achievement Track application, Monsanto is certifying (in part) that the facility has implemented an EMS in accordance with the Achievement Track EMS requirements. To demonstrate that the Monsanto Muscatine Plant EMS fulfills this requirement, Attachment 4 to this document provides a table which provides a partial listing of the components present in the Muscatine Plant EMS which correspond to the EMS components suggested by the National Achievement Track Program Description Document.

Pollution Prevention Program

Efforts have been underway at the Monsanto Muscatine Plant for a number of years to reduce the amount of waste generated. Goals have been established as appropriate in areas where reductions have been targeted. Some examples of pollution prevention accomplishments are as follows:

- SARA 313 Air Emissions Reductions – In 1989 Monsanto's CEO pledged that Monsanto as a whole would reduce toxic air emissions from 1987 levels by 90% by 1992. Both the Corporation and the Muscatine site met this commitment. The Muscatine Plant's 2001 SARA 313 air emissions are estimated to reflect a 96% reduction from 1987 levels.

- Hazardous Waste Reduction – The Muscatine Plant has reduced hazardous waste generation by over 75% from 1995 to 1999; estimated waste generation for 2001 will be reduced by over 80% from 1995 levels. The major contribution to this accomplishment was achieved by manufacturing a product in a separate unit which recovered waste acid versus disposal by neutralization.

- Recycle Program – The plant has recycled used oil, batteries, and metal since plant startup. In the early 1990's the plant expanded its recycle programs to include cardboard, plastic, office paper, and pallets. Approximately 700,000 pounds of cardboard, plastic, and office paper are recycled each year. Approximately 21,000 pallets are recycled each year.

- A Partial Listing of Some Specific Projects of Waste Reduction

    - New process to reduce SARA 313 compounds (1990) – reduced air emissions by over 90% in the process with the largest emissions of SARA compounds

- Process modifications plus utilization of existing solid waste incinerator to reduce SARA 313 air emissions (1994) – reduced SARA 313 air emissions from an operating unit by over 700,000 pounds
- Process Control Improvements (1999) – Waste generation per pound of product in one process was reduced by 20% by the implementation of improved process control.
- Catalyst Recycle (1999) – Spent catalyst from a manufacturing unit is now recycled which reduced disposal of catalyst by approximately 300,000 pounds per year.
- Process Change (1999) – A process change in a manufacturing process reduced solid waste generation per pound of production by 40%, hydraulic waste water load by 50%, and steam consumption per pound of product by 40%.
- Biological System pH Control (1999) – This process modification reduced caustic consumption by about 300,000 pounds per year.

The Monsanto Muscatine Plant has a sustained history of top tier environmental performance. Several of the plant's achievements in this area have been recognized with special awards from external organizations. A partial listing of these awards follows.

- Heart Association Award (1992)
- Wildlife Habitat Council Certification (1996) – In recognition of the dedication to the enhancement of wildlife habitat.
- OSHA VPP Star – Certification in 1995

At the corporate level, Monsanto is a member of the World Business Council for Sustainable Development (WBCSD). This group is a consortium of 140 companies around the world who are working together to develop a framework for assessing and reporting eco-efficiency to be used across all industries. The initial data for Monsanto (including the Muscatine Plant) utilizing this protocol is now being compiled and analyzed.

Public Outreach Efforts

One key mechanism by which Monsanto shares information with the surrounding community is through its **Community Advisory Panel (CAP).** This panel, formed in 1989, is one of the few community advisory panels in Iowa. The panel consists of about 12 community members and meets to discuss topics of concern to the community on a quarterly basis. Examples of topics discussed in recent meetings include:

- Information on products and manufacturing operations
- Y2K preparations
- Epidemiology study on a product produced at the Monsanto site
- Results of the 1999 Community Survey
- Risk Management Planning
- Community Relations Committee activities

The Muscatine Plant created a **Community Relations Committee** in 1997. This committee is a group of approximately 12 employees who represent a cross section of the plant. The charter of the group is to "develop plans and implement activities that enhance community relations." The group develops a community relations plan each year to identify the actions the group will implement in the upcoming 12 months. A key source of input for development of activities implemented by the group is a community survey conducted every 3-4 years by an outside market research firm. Some notable activities of this group in recent years is as follows:

- Open House celebrations
- Community Survey in 1999
- Adopt a Highway
- RMP Community Meetings
- Neighbor emergency response training
- Newspaper advertisements
- Radio talk show participation by the Plant Manager

Monsanto conducts other public outreach efforts at the **Corporate level**. A partial listing of these efforts follows. Further information regarding the Corporate and plant efforts noted below may be obtained by accessing www.Monsanto.com.

- Monsanto Annual Sustainability Report
- Monsanto Annual Life Sciences Awards
- Monsanto Fund Sustainability Grants

Additional public outreach activities implemented by the Muscatine Plant locally are as follows:

- Big Sand Mound Nature Preserve
- Sand Prairie Restoration
- Hosting environmental education classes for the local school districts in Louisa County
- Plant tours for local school groups, farmers, etc.
- National Science Teacher Association – Teacher Sponsorship
- Teachers Job Shadowing Program
- Martin Luther King Day Programs in the Muscatine Schools
- Household Hazardous Waste Collection Days in Muscatine and Louisa County
- Financial Support to the United Way
- Leadership role in the Muscatine County Mutual Aid Program
- HAZMAT Training for local EMT's and Police and Fire Departments
- Personal Computer Donations.

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Supplemental Information to National Environmental Achievement Track Application Monsanto Company – Muscatine, IA

Attachment 1

Monsanto Muscatine Plant Environmental, Safety & Health (ESH) Compliance Policy

MONSANTO PLANT ENVIRONMENTAL, SAFETY, AND HEALTH POLICY

We are committed to providing a safe and healthful workplace while demonstrating environmental stewardship in our community.

We will comply with all applicable federal, state, and local regulations through written procedures, effective training, and self-auditing.

We all accept the responsibility to adhere to this policy while performing our daily work.

This commitment does not end with ourselves, but extends to our fellow employees and the community.

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Supplemental Information to National Environmental Achievement Track Application Monsanto Company – Muscatine, IA

Attachment 2

The Monsanto (Corporate) ESH Manual Table of Contents

The Monsanto (Corporate) ESH Manual
Table of Contents

I. INTRODUCTION

II. THE MONSANTO VISION

III. ENVIRONMENTAL, SAFETY AND HEALTH (ESH) VISION AND GUIDING PRINCIPLES

IV. COMPLIANCE WITH ESH LAWS

V. INTERNAL GLOBAL (ESH) REQUIREMENTS SETTING PROCEDURE

VI. MONSANTO GLOBAL ESH PROGRAMS

1. Employee and Community Safety and Health
2. Facility Safety
3. Pollution Prevention
4. Waste Management
5. Distribution
6. Groundwater and Soil Quality
7. Outside Processors
8. Community Awareness at Locations
9. Environmental, Safety and Health Reviews of Capital Projects
10. Environmental, Safety and Health Reviews of Divestitures or Acquisitions of Property and/or Businesses
11. Environmental, Safety and Health Protection for Investments Over Which the Company Does Not Have Operating Control
12. Reproductive Hazards in the Workplace
13. Safe Handling of Carcinogens
14. Contractor/Guest Environmental, Safety and Health
15. Use of Animals in Research Facilities
16. Ozone-Depleting Chemicals (CFCs)
17. Environmental, Safety and Health Compliance Auditing

VII. MONSANTO GLOBAL ESH COMMUNICATION PROCEDURES

1. Employee Health and Exposure Communications
2. Significant Incident Reporting

VIII. CROSS-REFERENCE: ESH Manual and Responsible Care

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Attachment 3

The Monsanto (Corporate) ESH Vision and Guiding Principles document

Monsanto Corporate
Environmental, Safety and Health Vision and Guiding Principles

OVERVIEW

Introduction

Monsanto operates in more than 200 communities around the world. We have some 20,000 employees making quality products used by customers around the world. Building and maintaining trust in each of these populations is an obligation we all share. We will meet this obligation by demonstrating safe operations and selling safe products every hour of every day.

And while this is primarily a moral obligation - simply the *right way* to operate - it also provides a business advantage. Meeting the ESH vision builds public trust in the science we practice and gives us a competitive edge.

Purpose

The ESH Vision and Guiding Principle provide a common purpose for work related to environmental, safety and health throughout Monsanto and a context for behavior to achieve the purpose.

ESH Vision

To inspire confidence globally with trustworthy decisions, valuable products and safe activities.

ESH Guiding Principles

The following Guiding Principles will be the basis for establishing ESH requirements:

Area	Principle
Communication	We will be guided by openness and honesty as we operate our facilities and business. We will communicate our ESH Guiding Principles, goals and results to stakeholders.
Performance	We will: • Work diligently to prevent all incidents; • Protect the well-being of all people - employees, contractors, guests or neighbors - at our sites; • Enhance business results and promote sustainable development through leadership in ESH performance; • Encourage and reward both continuous improvement and breakthroughs; • Help employees to connect daily activities to long-term ESH goals; and • Employ consistent worldwide standards to achieve those objectives.

Environmental, Safety and Health Vision and Guiding Principles,
Continued

ESH Guiding Principles (continued)

The following Guiding Principles will be the basis for establishing ESH requirements:

Area	Principle
Compliance	We will comply with all external requirements and we will develop and adopt additional internal requirements to ensure protection of people, property, and the environment on a worldwide basis.
Business Decision Making	We will incorporate ESH Guiding Principles during project reviews, business strategy development and acquisitions. ESH Guiding Principles will be key factors when dealing with suppliers, toll manufacturers, partnerships and customers.
Dialogue	We will proactively engage in dialogue with stakeholders. We will seek counsel from people with diverse points of view to improve our ESH performance
Understanding Impact	We will endeavor to understand the full impact of our operations, products and services on our business, health and the environment.
Product Stewardship	We will inform our customers of the impacts of our products on health and environment and insist on their proper use.
Sustainable Development	We will develop and introduce products and services, and the requisite internal competencies, which move us toward continuously higher sustainability potential. We will improve existing products and processes to further reduce material use, wastes created and negative environmental impacts throughout the whole product life cycle (including raw material use, manufacturing, product use, and final disposal or reuse).
Regulations and Laws	We will proactively promote laws and regulations that reflect our standards of performance with respect to pressing environmental, safety, health and social issues.
Learning	We will pay attention to the world around us, respect diverse cultures and opinions, and learn from our experiences.

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Supplemental Information to National Environmental Achievement Track Application Monsanto Company – Muscatine, IA

Attachment 4

The Monsanto Muscatine Plant EMS Matrix

The Monsanto Muscatine Plant EMS Matrix

Beginning on page 3 of the National Environmental Achievement Track Program Description document, EPA identifies certain elements that a facility's EMS must contain in order to qualify for the program. The Monsanto Muscatine Plant EMS contains all of these elements, as illustrated by the examples provided in the main portion of this document. Additionally, there are numerous other programs and systems which meet these criteria but were not described in the document. Therefore to provide a more complete picture of the Monsanto Muscatine Plant EMS, the following table provides a partial listing of the components present in our EMS which correspond to the required EMS components.

Required EMS Component...	Is Included in the Monsanto Muscatine EMS by...
• Policy	• Monsanto Muscatine Plant ESH Compliance Policy • Monsanto (Corporate) ESH Manual o Both include regulatory and voluntary commitments • Annual Monsanto Sustainability Report • Active CAP Program • Adoption of Responsible Care principles
• Planning	• Documented EMS • Plant and area ESH goals established • ESH goals for individuals in leadership positions • Corporate Review of Federal Issues • Muscatine Env. Dept. Review of State and Local Issues • Requirement owners assigned for ESH requirements • Environmental Checklists for Projects • Detailed ESH Reviews for Major Projects • Release Benchmarking Initiative
• Implementation and Operation	• Definition of Roles and Responsibilities • Document Control Procedure • Web Page to make ESH information readily assessable • Environmental Incentive for all Employees • Taskman system to track recommendation status • Process Alarms and Interlocks • Ingenium system to track ESH training • Computer Based Training • Preventive Maintenance Programs • Emergency Response Plan
• Management Review	• Employee Performance Reviews • Annual Report of Environmental Performance • Monthly Discharge Monitoring Report • Annual TRI Report - Review with Management • Biennal RCRA Report - Review with Management • Annual Sustainability Report
• Continual Improvement	• Annual review of Incident Analyses by plant leadership • Third party (corporate) audit • Communications on incentive goal status