



Environmental  
Protection Agency

John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

June 21, 2011

Mr. Chris Leedy  
Cognis Corporation  
4900 Este Avenue  
Cincinnati, Ohio 45232-1419

**Re: Cognis Corporation -- OH0137812; 1IF00017\*BD -- CEI  
NOTICE OF VIOLATION**

Dear Mr. Leedy:

On June 15, 2011, I met with Bruce Tolson, Mike Murphy, and Ralph Quisno to conduct a compliance evaluation inspection (CEI) at the Cognis Corporation facility. The purpose of this inspection was to evaluate compliance with the terms of the NPDES permit. Please note that the report, by its format, tends to highlight negative areas.

As indicated on the attached NPDES Compliance Inspection Report, two of the areas evaluated received a marginal rating, and two areas received a satisfactory rating. The reasons for this rating are provided in the attached report.

Thank you and your staff for the time extended during the inspection. If you have any questions, feel free to contact me at 937.285.6108.

Sincerely,

Marianne Piekutowski  
Environmental Specialist 2  
Division of Surface Water

Enclosures

Cc: Bruce Tolson, Cognis Corporation  
Ralph Quisno, Cognis Corporation  
Mike Murphy, BASF Corporation



State of Ohio Environmental Protection Agency  
Southwest District Office

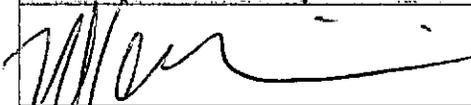
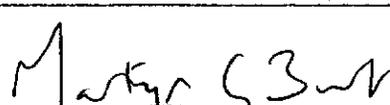
NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
11F00017*BD	OH0137812	06/15/2011	C	S	2

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Cognis Corporation 4900 Este Avenue Cincinnati, Ohio 45232-1419	10:00 am	12/1/2009(Mod)
	Exit Time	Permit Expiration Date
	11:45 am	12/28/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Bruce Tolson, Safety, Health, & Environment Manager	513.482.3813	
Mike Murphy, Site EHS Services/Ecology	937.547.6798	
Ralph Quisno, EHS Specialist III	513.482.2997	
Name, Address and Title of Responsible Official	Phone Number	
Christopher Leedy, Operations Director Cognis Corporation 4900 Este Avenue Cincinnati, Ohio 45232-1419	513.482.2100	

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	N	Flow Measurement	N	Pretreatment
N	Records/Reports	N	Laboratory	N	Compliance Schedule
N	Operations & Maintenance	M	Effluent/Receiving Waters	M	Self-Monitoring Program
S	Facility Site Review	N	Sludge Storage/Disposal	N	Other
N	Collection System				

**Section D: Summary of Findings (Attach additional sheets if necessary)**  
See attached report.

Inspector	Reviewer
	
Date 6/21/11	Date 6/22/11
Marjane Piekutowski Division of Surface Water Southwest District Office	Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office

Sections E thru K: Complete on all inspections as appropriate  
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

**Section E: Permit Verification**

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee ..... Y
- (b) Correct name and location of receiving waters..... Y
- (c) Do Categorical Standards apply?...If yes, list applicable standards.. Y  

40 CFR 414 to MSD discharge
- (d) Product(s) and production rates conform with permit application (Industries)..... NA
- (e) Flows and loadings conform with NPDES permit..... NA
- (f) Treatment processes are as described in permit application... Y
- (g) All discharges are permitted..... Y
- (h) Number and location of discharge points are as described in permit..... Y
- (i) Storm water discharges properly permitted..... Y

Comments/Status:

a) The facility is now owned by BASF. This will become effective on July 1, 2011. The transfer paperwork has been submitted as required.

**Section F: Compliance**

- (a) Any significant violations since the last inspection..... N
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... Y
- (d) Permittee has a compliance schedule..... NA
- (e) Compliance schedule contained in...N/A
- (f) Permittee is in compliance with schedule..... NA
- (g) Has biomonitoring shown toxicity in discharge since last inspection NA

Comments/Status:

a) Facility has been having Oil and Grease violations. There have not been any pH violations since it is being taken in the field. The facility has contracted with Green Cities for green infrastructure projects to eliminate violations by eliminating stormwater discharges. The soil borings have been completed, and the facility is waiting on the results. There will be a site-wide meeting at the end of June to discuss this project.

**Section G: Operation & Maintenance**

**Treatment Works:**

Treatment facility properly operated and maintained

(a) Standby power available.....generator  or dual feed ..... NA

i. What does the back-up power source operate.....

NA

ii. How often is the generator tested under load.....

NA

(b) Which components have an alarm system available for power or equipment failures.....

NA

(c) All treatment units in service other than backup units..... NA

(d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....

NA

(e) Any major equipment breakdown since last inspection..... NA

(f) Operation and maintenance manual provided and maintained..... NA

(g) Any plant bypasses since last inspection..... NA

(h) Any plant upsets since last inspection..... NA

**Comments/Status:**

These are storm water discharges. There is retention of storm water on-site, but no active treatment of the storm water.

**Section H: Sludge Management**

(a) Method of Sludge Disposal...

- Land Application  
 Haul to Another NPDES Permittee  
 Haul to a Mixed Solid Waste Landfill

**NA**

\*if one of the selected methods is land application, complete applicable charts.

**Class A - Exception Quality Sewage Sludge (monitoring station 584)**

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 - Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 - Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Class B Sewage Sludge (monitoring station 581)**

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 – Aerobic Bench Scale Analysis	Option 4 – Specific Oxygen Uptake Rate	Option 5 – Aerobic Time and Temperature	Option 6 – Alkali Addition	Option 7 – >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 – Land Injection	Option 10 – Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (a) Has amount of sludge generated changed significantly since the last inspection..... NA
- (b) How much sludge storage is provided at the plant.....
- (c) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... NA
- (d) Any complaints received in last year regarding sludge..... NA
- (e) 5/8" screen at headworks for facilities that land apply sludge..... NA
- (f) Are sludge application sites inspected to verify compliance with NPDES permit..... NA
- (g) Is a contractor used for sludge disposal..... NA  
 If so, what is the name of the contractor.....

**Comments/Status:**

There is no treatment nor is there sludge generated.

**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices operated and maintained..... NA  
Type of device (e.g. weir with ultrasonic level sensor):  

Volume of storm water times the surface area.
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- (b) Calibration frequency adequate ..... NA  
(Date of last calibration: NA)
- (c) 24-hour recording instruments operated and maintained.....NA
- (d) Flow measurement equipment adequate to handle full range of flows..... NA
- (e) Actual flow discharged is measured..... NA
- (f) Flow measuring equipment inspection frequency  
Daily Weekly monthly other

**Comments/Status:**

Storm water discharges. Use the rainfall amount times the surface area tributary to the outfall.

**Section I: Self-Monitoring Program (con't)**

**Sampling:**

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y  
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

**Comments/Status:**

Cardinal Laboratories performs the analytical work.

**Section I: Self-Monitoring Program (con't)**

**Laboratory:**

*General*

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... N
- (b) Do SOP's include the following if applicable..... N
  - Title
  - Scope and Application
  - Summary
  - Sample Handling and Preservation
  - Interferences
  - Apparatus and Materials
  - Reagents
  - Procedure
  - Calculations
  - Quality Control
  - Maintenance
  - Corrective Action
  - Reference (Parent Method)

*Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.*

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (d) If alternate analytical procedures are used, proper approval has been obtained..... NA
- (e) Analyses being performed more frequently than required by permit. N
- (f) If (e) is yes, are results in permittee's self-monitoring report..... NA
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y  
(see score from GLC page)
- (h) Commercial laboratory used..... Y  
Parameters analyzed by commercial lab: **pH, Fecal Coliform, cBOD,**

**TSS, O&G, COD, PAH**

Lab name: **Cardinal Laboratories**

*Discharge Monitoring Report Quality Assurance (DMRQA)*

- (a) Participation in latest USEPA quality assurance performance sampling..... NE  
Date:
- (b) Were any parameters "Unsatisfactory"..... NE
- (c) Reasons for "Unsatisfactory" parameters.....

?

**Comments/Status:**

The facility may be obtaining DMRQA results for Cardinal Laboratories.

**Section J: Effluent/Receiving Water Observations**

**Outfall # 010**

Outfall Description: Final outfall for storm water discharges from the Esters area. This outfall has been plugged. There is water coming in at low spot in the pipe. The line was CCTVed. Will remain plugged until such time as the leak is stopped or green infrastructure installed.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 011**

Outfall Description: Final outfall for storm water discharges from the former Esters area and the grassy areas.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 014**

Outfall Description: Final outfall for storm water discharges from the Esters area.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 020**

Outfall Description: Final outfall for storm water discharges from the CARE warehouse areas.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 021**

Outfall Description: Final outfall for storm water discharges from the CARE products area. There are booms in this area for the sheen from the diesel leak remediation.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 026**

Outfall Description: Final outfall for storm water discharges from the Esters areas.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 033**

Outfall Description: Final outfall for storm water discharges from the Esters area.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 038**

Outfall Description: Final outfall for storm water discharges from the Air Products liquid hydrogen storage area.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Outfall # 040**

Outfall Description: Final outfall for storm water retention basin from the Fatty Alcohol and APG Surfactants and ground water.

Receiving Stream: Mill Creek

Receiving Stream Description: Channelized concrete. There was no discharge the day of the inspection. Creek was clear and flowing.

**Comments/Status:**

The facility is currently pursuing green infrastructure options for some of the outfalls. Outfall 010 is one in particular. Cognis is looking into the possibility of this in other areas.

It was raining at the time of the inspection, but the outfalls were not discharging at that point in time.

**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?

Permit # : 11F00017\*BD  
NPDES # : OH0137812

- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

**Comments/Status:**

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Permit # : 11F00017\*BD  
NPDES # : OH0137812

# General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Balance</b>				
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights <sup>1,2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<b>NR</b>
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. <sup>3</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Cleanliness, air movement, vibration	• Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams <sup>4</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Drying Oven (Suspended Solids)</b>				
• Temperature Recordkeeping	• Temperature recorded with each use <sup>4</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<b>NR</b>
		• Log book maintained <sup>2</sup>	<input type="checkbox"/> Yes	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup> . Correction factor posted on thermometer / equipment <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Thermometer temperature accurate to 0.5° Celsius <sup>5</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° C <sup>4</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

# ● General Lab Criteria ●

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>pH Meter</b>				
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) <sup>3</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>NR</b>
	• Logbook maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result <sup>7</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet <sup>2</sup> <b>NA – Part of pH pen</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing <sup>8</sup> <b>NA</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: <i>The pH pen has three point calibration done a minimum of weekly to ensure the meter is ready to be used. There needs to be a written SOP for the collection and measurement of the pH. The approved test method for pH should also be kept on-site with SOP.</i>				

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Dissolved Oxygen Meter</b>				
• Calibration Method	• Air or known DO calibration method <sup>10</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<b>NR</b>
	• Calibration per manufacturer specification <sup>10</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Logbook maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration verification required at least once each day the meter is used. <sup>3</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil) <sup>11</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

# ● General Lab Criteria

Criteria	Standard Methods Requirement		Rating
<b>Incubator (CBOD/ E-Coli)</b>	Acceptable?		<b>NR</b>
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use <sup>1</sup> (E-Coli)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature checked / recorded daily <sup>2</sup> (CBOD)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (CBOD) is 20° C ±1.0 <sup>o12</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5 <sup>o22</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained <sup>2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature correction information posted on incubator <sup>1</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) <sup>23</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature Log (thermometer accurate to 0.5 Celsius). <sup>1</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement		Rating
<b>Refrigerator</b>	Acceptable?		<b>NR</b>
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.5 Celsius). <sup>5</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Thermometer held in water bath. <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Refrigerator temperature ≤6° Celsius. <sup>13</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages. <sup>14</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: *Usually the samples are iced down and picked up by the contract lab. There are times where they may be refrigerated. The refrigerator used for this must have the appropriate thermometer, and equipment log. An SOP should be developed for ensuring this is being done.*

# ● General Lab Criteria ●

Criteria	Standard Methods Requirement		Rating
<b>Chlorine Meter</b>	Acceptable?		
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV <sup>15</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>NR</b>
	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Method	• Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification <sup>16</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained. <sup>2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: :			

Criteria	Standard Methods Requirement		Rating
<b>Ammonia Meter</b>	Acceptable?		
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>NR</b>
	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Method	• Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. <sup>17</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing <sup>18</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: :			

# General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Sample Collection/Handling</b>				<b>NR</b>
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). <sup>19</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). <sup>19</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection <sup>14</sup> NA – Only grab samples.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equipment blanks utilized <sup>14</sup> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Logbook being maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Comments: *A written SOP should be developed for taking samples and cleaning of the sample equipment. An equipment log should be maintained for this. Cardinal Labs provides the sample containers and chain-of-custody forms.*

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Desiccator</b>				<b>NR</b>
• General criteria	• Properly working seals.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Desiccant fresh (blue color)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Documentation	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Bench sheets</b>				<b>NR</b>
• General criteria	• Date(s) <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Analyst initials <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Blue or black ink pen <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Calibration information <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Corrections, single line through, initialed and dated <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

# ● General Lab Criteria ●

Criteria	Standard Methods Requirement		Rating
Hot Water Bath (Fecal Coliform/E. Coli)		Acceptable?	
• Temperature Recordkeeping	• Temperature Log (thermometer accurate to 0.2° C) <sup>21</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• Incubator temperature 44.5° C ± 0.2° <sup>21/24</sup>		
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Water Level	• Thermometer total immersion or partial (line on thermometer to ID immersion depth) <sup>1,5</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

NR

Comments:

Criteria	Standard Methods Requirement		Rating
Autoclaves/Steam Sterilizers		Acceptable?	
• All apparatus utilized is adequately sterilized before use	• Sterilizing temperature 121° C <sup>25</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• 10 to 30 minutes time based on material being sterilized <sup>26</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Documentation	• Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust. <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Performance Checks	• Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules <sup>1</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

NR

Comments:

# General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating								
<b>Final Effluent Temperature Monitoring</b>											
• General Criteria	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>NR</b>								
	• Thermometer accurate to 0.1° Celsius <sup>5</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No									
	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No									
Comments:											
<b>Number of Criteria Rated:</b>			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: right;"><b>Acceptable</b></td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: right;"><b>Marginal</b></td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: right;"><b>Unacceptable</b></td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: right;"><b>Total Number of Areas Rated</b></td><td style="text-align: center;">0</td></tr> </table>	<b>Acceptable</b>	0	<b>Marginal</b>	0	<b>Unacceptable</b>	0	<b>Total Number of Areas Rated</b>	0
<b>Acceptable</b>	0										
<b>Marginal</b>	0										
<b>Unacceptable</b>	0										
<b>Total Number of Areas Rated</b>	0										
<p><b>Acceptable Ratings</b> – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).</p> <p><b>Marginal Ratings</b> – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).</p> <p><b>Unsatisfactory Rating</b> - Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).</p>											
<table style="width: 100%;"> <tr> <td style="width: 40%;">Consider recommending PAI Audit from DES when:</td> <td style="width: 60%;">                     &gt;60% of ratings are Marginal                      &gt;45% of ratings are a combination of Marginal or Unacceptable                      &gt;30% of ratings are Unacceptable                 </td> </tr> </table>				Consider recommending PAI Audit from DES when:	>60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable						
Consider recommending PAI Audit from DES when:	>60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable										

## Notation of Referenced Method

- |  |  |
|--|--|
| 1 Method 9020-B, Item 3<br>2 Method 1020-A, Item 1<br>3 Method 1020-B, Item 10<br>4 Method 2540-B, Item 2<br>5 Method 2550-B, Item 1<br>6 Method 1020-A, Item 1<br>7 Method 4500-H B, Item 4<br>8 Method 4500-H B, Item 2<br>9 Method 1020-B, Item 2<br>10 Method 4500-O B, Item 3<br>11 Method 4500-O G, Item 3<br>12 Method 5210-B, Item 5<br>13 CFR 136.3, Table II | 14 Method 1060A, Item 1<br>15 Method 4500-CI I, Item 2<br>16 Method 4500-CI I, Item 4<br>17 Method 4500-NH3 D, Item 4<br>18 Method 4500-NH3 D, Item 2<br>19 Method 1060-B, Item 2<br>20 Method 1060-B, Item 1<br>21 Method 9222D, Item 1<br>22 Method 9223 B, Item 2<br>23 Method 9223 B, Item 3<br>24 Method 1603, Item 2<br>25 Method 9030-B, Item 3<br>26 Method 9020 B, Table IV |
|--|--|

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

# General Lab Criteria

<b>Preservation and Holding Times</b>						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH <sub>3</sub> -N	P, G	500	G, C	Analyze as soon as possible or add H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO <sub>3</sub> to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

<b>Approved Standard Methods</b>	
CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH <sub>3</sub> D
Total Residual Chlorine, DPD Colorimetric Method	Std Methods 4500-Cl G
Total Suspended Solids, Dried at 103-105 °C	Std Methods 2540-D
Dissolved Oxygen, Membrane Electrode Method	Std Method 4500-O G
pH, Electrometric Method	Std Methods 4500-H+ B
Fecal Coliform, Membrane Filter Procedure	Std Methods 9222D
Escherichia Coli, Enzyme Substrate Test	Std Method 9223B
Escherichia Coli Membrane Filtration Procedure	EPA Method 1603
Oil and Grease	USEPA 1664A or Std Methods 5520B
Metals, general	USEPA 200, Std Methods 3111B or C, or 3120B
Volatiles (Purgeables by purge and trap)	USEPA 6210, Std Methods 624
Semi-Volatiles (Base/Neutrals and acids)	USEPA 6410, Std Methods 625
Pesticides	USEPA 6410 and 6630, Std Methods 608

**COGNIS CORPORATION**  
**NPDES COMPLIANCE EVALUATION INSPECTION**  
**DATE OF INSPECTION: June 15, 2011**

**ITEMS FOR DISCUSSION:**

The facility has had Oil and Grease violations from its outfalls. BASF has purchased Cognis Corporation. The permit transfer has been submitted, and will become effective on July 1, 2011.

**COMPLIANCE EVALUATION:**

A rating of Marginal was given to the "Effluent/Receiving Waters" section because of the Oil and Grease. Since the facility has begun sampling pH in the field, the pH violations have been eliminated.

***EFFLUENT LIMIT VIOLATIONS***

Station No 11F00017021

<b>Parameter</b>	<b>Code</b>	<b>Date</b>	<b>Permit Limit</b>	<b>Reported</b>
Oil and Grease, Hexane	00552	11/16/2010	10 mg/L	27.5 mg/L
Oil and Grease, Hexane	00552	2/1/2011	10 mg/L	10.8 mg/L
Oil and Grease, Hexane	00552	3/4/2011	10 mg/L	14 mg/L
Oil and Grease, Hexane	00552	4/1/2011	10 mg/L	18.5 mg/L
Oil and Grease, Hexane	00552	4/29/2011	10 mg/L	18.5 mg/L

Station No. 1 IF00017040

<b>Parameter</b>	<b>Code</b>	<b>Date</b>	<b>Permit Limit</b>	<b>Reported</b>
Oil and Grease, Hexane	00552	12/11/2010	10 mg/L	34.7 mg/L
Oil and Grease, Hexane	00552	2/1/2011	10 mg/L	10.9 mg/L

Please be advised that failure to comply with the effluent limitations, or to satisfy monitoring or reporting requirements of your NPDES permit may be cause for enforcement action pursuant to the Ohio Revised Code Chapter 6111. The step(s) being taken to resolve these violations have been provided in the notification of violation provided by the facility.

The facility is pursuing the use of green infrastructure, and eliminating some of its outfalls to Mill Creek. The facility is also finishing separating out flows from Emery Oleochemicals lines. Cognis is hoping to eliminate any discharge to the same collection system. A permit to install (PTI) has been submitted to Ohio EPA to separate the discharges to the sanitary sewer. Cognis would longer discharge to Emery's

## Cognis Corporation -- Page 2

pretreatment system. The PTI is currently under review by Ohio EPA and MSD of Greater Cincinnati.

Cognis is now taking its pH readings in the field. A written standard operation procedure (SOP) should be developed for this. In addition, SOPs should be developed for sample collection, the sample refrigerator, and the cleaning of sampling equipment. These were discussed during the inspection. The information needed in these SOPs is in the General Laboratory Criteria (GLC) form and the Compliance Evaluation Inspection (CEI) form.

### OBSERVATIONS:

Cognis Corporation Cincinnati operations (Cognis) produce CARE chemicals that cover the entire spectrum of hair, skin and body care, as well as household and industrial detergents and cleaners. The facility also supports Cognis' Functional Products business by producing various esters that are used in a wide variety of markets such as coatings, lubricants, graphic arts, adhesives, agriculture and mining.

The primary raw materials for the CARE products are coconut oil, palm stearine oil, palm kernel oil, methanol, and dextrose with the finished products being fatty alcohols, glycerine and alkyl polyglycoside (APG®) surfactants. The primary raw materials for the Ester products are azelaic acid, oleic acid, glycerine and various alcohols.

Cognis receives, manufactures, and/or ships multiple types of chemicals at the Cincinnati plant. The primary raw materials for the Cognis operations are vegetable oils, alcohols, dextrose, fatty acids, solvents, and acids. These materials are generally stored in bulk storage tanks and containers located within covered areas. All warehouse drains are connected to the process sewer. In addition, all chemical bulk storage tanks are located within a secondary containment system. Most bulk storage tanks are located within a tank farm area, and utilize a barrier wall around the tank farm for containment purposes. The tank farm areas drain to the process sewer system.

Within the Esters Department, the following chemicals may be used and stored:

- Biphenyl (used as a heat transfer fluid and drains to the process sewer);
- Methanol (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer);
- Phosphoric acid (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer); and
- Phthalic Anhydride (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer).

Within the CARE Department, the following chemical may be used and stored:

- Copper Compounds (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer);

### Cognis Corporation -- Page 3

- Hydrochloric acid (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer);
- Methanol (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer);
- Sulfuric Acid (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer); and
- Zinc Compounds (used in manufacturing and could drain to storm sewer during transportation; the manufacturing uses drain to the process sewer).

Cognis employs a number of traditional storm water management practices to control and manage the quality and quantity of storm water run-off:

- Storm water runoff within the CARE manufacturing area drains to a containment pond where the first quarter inch of rainfall is collected, any grease and oil is removed, and the water phase is used as cooling water in the manufacturing process prior to being discharged in the process sewer system. The additional storm water in the CARE area is routed through the storm sewer system, and is discharged directly to the Mill Creek. This process of collecting the first quarter inch is thought to be adequate to remove any pollutants that could be in the run-off. A containment wall has been constructed to the west of Building 97 to divert storm water runoff to the storm water system and to the collection pond rather than direct sheet flow to Mill Creek.
- Within the Ester Department, outfall 11F00017036 collects storm water runoff from the roadway and paved area between Buildings 53 and 56. Outfall 11F00017032 was eliminated. Outfall 11F00017033 collects storm water runoff from paved areas between Buildings 106 and 56, from paved areas north of Warehouse 69, and from the visitor parking lot. This outfall has a minimal potential to have contaminants from these areas. Also, within the Ester area, a full-length containment wall has been constructed at the Mill Creek bank area. This wall has several openings (identified as outfalls P and Q) to allow storm water runoff to drain to Mill Creek. Each of these outfalls contains a manual valve that is maintained in the closed position. Following the storm event, the collected storm water is visually inspected for signs of contaminants, and if there are no signs of this, then the runoff is released to Mill Creek. The Esters Department is in the planning phase of a "collect and discharge" system for the area. This will eliminate any potential storm water discharge without inspection for pollutants. Permit to Install (PTI) Application Number 626532 has been issued.
- Outfall 11F00017038 collects storm water runoff from the Air Products liquid hydrogen storage portion of the plant. This runoff is from the gravel area, and is collected in catch basin 38A, which discharges to Mill Creek via outfall 11F00017038.
- Outfall 11F00017010 collects storm water runoff from the roadway to the east of the South Bridge. This area is subject to normal truck traffic. A manual valve

has been placed in the collection basin for outfall 11F00017010, and the "catch, inspect and release" operation is used for this outfall. This outfall is currently plugged until the source of the pooled water in the line is determined. This outfall is a candidate for elimination with green infrastructure.

- Outfall 11F00017014 collects storm water runoff from the roadway west of Building 32. This area is subject to normal truck traffic. A manual valve has been placed in the collection basin for Outfall 11F00017014 and the "catch, inspect and release" operation is used for this outfall.

- Outfall 11F00017011 collects storm water runoff from the roofs of Building 55, 39 and 39A. These buildings are no longer utilized for manufacturing and do not store chemicals. These three buildings were demolished in 2008.

- Outfall 11F00017020 collects storm water runoff from the roof of warehouse 67.

- Outfall 11F00017021 collects storm water runoff from the paved areas around and between Buildings 67 and 96. This area is subject to normal truck traffic. A manual valve has been placed in the collection basins for outfall 11F00017021, and the "catch, inspect and release" operation is used for this outfall.

- Outfalls 11F00017012 and 11F00017037 were eliminated.

- Outfall 11F00017040 is the discharge from a storm water detention basin. This basin takes ground water from the site and storm water. The storm water retention basin has the capability to be diverted to the pretreatment system, and then switched and discharged to the Mill Creek. The general procedure for this retention basin is:

- The first 0.25 inches of rainfall (about 16,748 gallons) is collected from the Fatty Acid and APG<sup>®</sup> Surfactants manufacturing area, and flows to the concrete storm water retention basin. This quantity was deemed sufficient to clean any contamination from the collection surfaces.

- After the first 0.25 inches of rainfall, the retention basin inlet valve is closed and additional rain water runoff bypasses the basin and discharges directly to Mill Creek.

- After the rainfall event is over, the storm water collected in the basin is pumped manually to tank 199-T05. Here the grease and oil are removed and the remaining water phase is used in the process area of Unit 108 to cool the bottom streams from methanol fractionation column 108-C02 using heat exchanger 108-H07.

- The process water from the heat exchanger is discharged via the pretreatment system to MSD.

The rail car loading/unloading area spill containment area has been repaired. Any spill goes into a sump and is then pumped to the pretreatment system for treatment. The concrete has been repaired, and lined with stainless steel that has been welded to prevent leaks. A slip resistant grating has been placed over the top of the stainless steel.

**Cognis Corporation -- Page 5**

A retaining wall has been built around the coconut oil unloading area to the plant north of Building 93 to protect the storm water collection system.

The storm drains in the facility are painted yellow to identify that the area discharging to Mill Creek.

Cognis has been implementing the sheen language that was a result of the permit appeal negotiations. This is only for the outfalls with an intermittent storm water discharge. The outfalls with ground water and the storm water retention basin have monthly monitoring and Oil and Grease limits.

**RECOMMENDED ACTIONS**

Cognis Corporation should develop SOPs for sample collection, pH, the sampling refrigerator, and sample equipment cleaning. A copy of these should be provided to Ohio EPA when they are complete.

Cognis Corporation should keep this office up to date on the status of the green infrastructure projects occurring on-site. This could eliminate all but outfall 11F00017040 from the individual NPDES permit.

