

OHIO E.P.A.

DEC 29 2006

ENTERED DIRECTOR'S JOURNAL

**BEFORE THE  
OHIO ENVIRONMENTAL PROTECTION AGENCY**

In the Matter of:

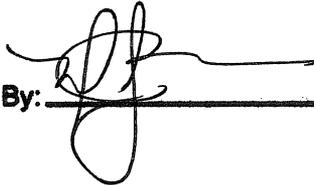
Cognis Corporation  
4900 Este Avenue  
Cincinnati, Ohio 45232 -1419

Cognis Oleochemicals LLC  
4900 Este Avenue, Building 6A, 3<sup>rd</sup> Floor  
Cincinnati, Ohio 45232 -1419

**RESPONDENTS**

Director's Final Findings  
and Orders

**I certify this to be a true and accurate copy of the  
official documents as filed in the records of the Ohio  
Environmental Protection Agency.**

By:  Date: 12/29/06

**PREAMBLE**

It is agreed by the parties hereto as follows:

**I. JURISDICTION**

These Director's Final Findings and Orders ("Orders") are issued to Cognis Corporation and Cognis Oleochemicals LLC ("Respondents") pursuant to the authority vested in the Director of the Ohio Environmental Protection Agency ("Ohio EPA") under Ohio Revised Code ("ORC") §§ 3704.03 and 3745.01.

**II. PARTIES BOUND**

These Orders shall apply to and be binding upon Respondents and successors in interest liable under Ohio law. No change in ownership of the Respondents or of the facility (as hereinafter defined) shall in any way alter Respondents' obligations under these Orders.

**III. DEFINITIONS**

Unless otherwise stated, all terms used in these Orders shall have the same meaning as defined in OAC Chapter 3704 and the rules promulgated thereunder.

**IV. FINDINGS**

The Director of Ohio EPA has determined the following findings:

1. Respondents own and operate a chemical manufacturing facility located at 4900 Este Avenue, Cincinnati (Hamilton County), Ohio, and is identified by Ohio EPA as facility identification number 1431070035. The facility is classified as a "major source" for Title V and the Prevention of Significant Deterioration/New Source Review ("PSD/NSR") regulations in Ohio Administrative Code ("OAC") Chapters 3745-77 and 3745-31, respectively. At this facility, azelaic and pelargonic acids are produced in two similar, but separate, processes referred to as ozonolysis process II (building 60) and ozonolysis III (building 68). The ozonolysis processes consist of ozone generators, reactors, running tanks, stills, extractors and vacuum systems and are identified by Ohio EPA as "emissions units P010 (building 60) and P017 (building 68)." Emissions units P010 and P017 are each controlled with a catalytic oxidizer (installed in 1991 to abate nuisance odors in the neighborhood) and a backup packed column scrubber (installed in or about 1998 to replace the previous scrubber). Respondents also operate a fatty alcohol production plant at the facility. To produce the fatty alcohol, Respondents employ fatty alcohol units identified by Ohio EPA as "emissions units P057 through P060," which are vented to a common scrubber. Additionally, Respondents operate a 683 million Btu per hour ("MMBtu/hr") multi-fuel-fired boiler with electrostatic precipitator and a 38.2 MMBtu/hr coal/fuel oil-fired boiler with baghouse, which are identified by Ohio EPA as "emissions units B027 and B028," respectively. Finally, Respondents operate a coal handling system with a baghouse for boiler number 2 at the facility, which is identified by Ohio EPA as "emissions unit P902."

2. The emissions units identified in Finding 1 emit, in part, volatile organic compounds ("VOCs") and hazardous air pollutants ("HAPs"), as defined in OAC Rules 3745-21-01(B)(6) and 3745-77-01(V), respectively, and/or particulate emissions ("PE"), particulate matter ("PM"), and particulate matter with an aerodynamic diameter of 10 microns or less ("PM<sub>10</sub>"), which are defined as "air pollutants" or "air contaminants" in OAC Rule 3745-15-01(C). Additionally, these emissions units are "air contaminant sources" as defined in OAC Rules 3745-31-01(I) and 3745-15-01(C) and (W).

3. OAC Rule 3745-31-04(A) requires, in part, that permit to install ("PTI") applications shall contain such information as the Director of Ohio EPA deems necessary to determine whether the criteria of OAC Rule 3745-31-05 are met and shall be made on forms prepared by Ohio EPA.

4. OAC Rule 3745-31-05(A) states, in part, that the Director of Ohio EPA shall issue a PTI if he determines, based on the information appearing in the application, or other information available, that the installation or modification and operation of an air contaminant source will:

- not prevent or interfere with the attainment or maintenance of applicable

- ambient air quality standards;
- not result in a violation of any applicable laws; and
- employ the best available technology ("BAT").

5. OAC Rule 3745-31-05(C) states, in part, that the Director of Ohio EPA may impose special terms and conditions in a PTI as are appropriate or necessary to ensure compliance with applicable laws and to ensure adequate protection of the environment.

6. OAC Rule 3745-31-01(L) defines, in part, "applicable laws" as pertinent provisions of ORC Chapters 3704 and 3745; rules, regulations and orders of Ohio EPA; the Clean Air Act; rules and regulations of the Administrator of the U. S. Environmental Protection Agency ("USEPA"). This includes any standard or other requirements established under the federal HAP program established in Section 112 of the Clean Air Act [i.e., National Emission Standards for Hazardous Air Pollutants ("NESHAP")].

7. 40 CFR, Part 63, Subpart D of the NESHAP establishes, in part, emission standards and performance test requirements for fossil fuel-fired steam generating units that have more than 73 megawatts of heat input rate (i.e., 250 MMBtu/hr). Fossil fuel is defined as natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

8. OAC Rule 3745-77-02(B) states, in part, that major sources are subject to the permitting requirements of OAC Chapter 3745-77 (i.e., Title V).

9. OAC Rule 3745-77-07(A)(1) requires, in part, that a Title V permit include emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance. OAC Rule 3745-77-07(A)(3) requires, in part, that a Title V permit contain emission monitoring and analysis procedures or test methods sufficient to yield reliable representative data to determine the source's compliance with the permit and applicable emission limitations.

10. OAC Rule 3745-77-01(H) defines, in part, an applicable requirement as any standard or other requirement in the approved state implementation plan ("SIP").

11. OAC Rule 3745-17-10(C)(1) is part of Ohio's approved SIP and establishes, in part, PE limitations for fuel burning equipment located in Hamilton County that produce heat or power by indirect heat transfer. The PE limitation is based on the equipment manufacturer's or designer's guaranteed maximum heat input, in MMBtu/hr.

12. ORC § 3704.05(A) prohibits, in part, any person from violating an emission limitation in any rule adopted by the Director of Ohio EPA pursuant to ORC

13. ORC § 3704.05(C) prohibits any person from violating any terms or conditions of any permit issued by the Director of Ohio EPA.

14. ORC § 3704.05(G) prohibits any person from violating any order, rule or determination of the Director issued, adopted, or made under ORC Chapter 3704.

15. ORC § 3704.05(J)(2) prohibits, in part, any person from violating any applicable requirement of a Title V permit or any permit condition, except for an emergency as defined in 40 CFR 70.6(g).

16. On September 30, 1998, Ohio EPA issued PTI # 14-04576 to Respondents authorizing a modification to ozonolysis process II and III (i.e., emissions units P010 and P017). The modification was for the purpose of debottlenecking emissions units P010 and P017 to expand production by about 20 percent. PTI # 14-04576 requires Respondents to employ catalytic oxidizers as the primary control to reduce organic compound ("OC") emissions to not greater than 2.59 pounds per hour ("lbs/hr") and 2.54 lbs/hr, respectively, for emissions units P010 and P017. Additionally, PTI # 14-04576 requires that emissions units P010 and P017 each employ a packed column scrubber as a backup control device to be used when a catalytic oxidizer is not operational. PTI # 14-04576 limits emissions unit P010's OC emissions to 3.10 lbs/hr and emissions unit P017's OC emissions to 3.04 lbs/hr when operating with the backup control devices. Annual OC emissions rates were based on continuous use of the backup control device (i.e., the higher hourly OC emission limitations).

Emissions units P010 and P017 began operation in 1960 and 1968, respectively. Prior to the issuance of PTI # 14-04576, there were no regulatory requirements associated with these emissions units. Respondents voluntarily replaced both scrubber systems after the modification. The original scrubbers for emissions units P010 and P017 were installed in 1970 and were upgraded with new packed column scrubbers.

PTI # 14-04576 required that Respondents conduct performance testing for emissions units P010 and P017 to determine compliance with the hourly OC emission limitations within three months of completion of the modification. Because the emissions units are substantially identical processes, the PTI allowed Respondents to conduct the performance tests with emissions unit P010 operating with the primary control device and emissions unit P017 operating with the backup control device.

17. On April 20, 2001, Respondents submitted a completion of construction certificate for emissions unit P010, stating that construction was completed on April 17, 2001.

18. On September 19, 2001, Respondents submitted a completion of construction certificate for emissions unit P017, stating that construction was completed on September 14, 2001.

19. On November 30, 2001, Respondents sent a letter to the Hamilton County Department of Environmental Services ("HCDES"), Ohio EPA's contractual representative in Hamilton County, stating that the performance tests (i.e., stack tests) for emissions units P010 and P017 were being postponed due to internal equipment failures which prevented the units from achieving maximum operating conditions. The letter stated that the next available dates that the stack testing firm could conduct the tests were January 23 and 24, 2002.

20. On January 8, 2002, Respondents telephoned HCDES and stated that emissions unit P017 was not operating due to a failed transformer and it would take 10 weeks for a new transformer to arrive at the facility. Respondents also stated that emissions unit P010 was operational. HCDES told Respondents that emissions unit P010 would need to be tested as scheduled on January 22, 2002, and that emissions unit P017 could be tested once repairs were completed.

21. On January 15, 2002, Respondents sent a letter to HCDES outlining the January 8, 2002, telephone conversation.

22. On January 23, 2002, Respondents conducted the compliance test for emissions unit P010 that was required by PTI # 14-04576. The compliance test measured the average OC emissions exhausting from the primary control device (i.e., controlled by the catalytic incinerator) as 5.5 lbs/hr. These results revealed an exceedance of the OC emission limitation for emissions unit P010 when exhausting through the primary control device, in violation of Respondents' PTI and ORC § 3704.05(C). Similarly, on April 11, 2002, Respondents conducted the compliance test for emissions unit P017. The test revealed that an average of 11.6 lbs/hr was being exhausted from the scrubber system using recycled water (the usual mode of operation). This also demonstrated a violation of PTI # 14-04576 and ORC § 3704.05(C). Additionally, Respondents violated ORC § 3704.05(C) by failing to conduct the performance tests within the time frame specified in PTI # 14-04576.

23. On May 21, 2002, Respondents sent a letter to inform HCDES of the failed compliance tests. The letter stated that Respondents had diverted all emissions emitted by emissions units P010 and P017 to the primary control device (i.e., the oxidizers) because the backup control system revealed a higher OC emission rate. Additionally, Respondents stated that as a result of the compliance tests, a representative from the oxidizers' manufacturer had conducted a detailed inspection and sampled the catalyst to determine its activity. Based on the inspection and sampling, the following problems were

identified and corrected:

- a missing gasket around the catalyst bed of emissions unit P010's oxidizer was replaced;
- two ceramic filters from both oxidizers had fallen out of place and were replaced;
- partially clogged filters and catalysts from both oxidizers were cleaned;
- a hole in the chamber of the catalyst for the oxidizer for emissions unit P017 was repaired; and
- the catalyst was replaced in emissions unit P010's oxidizer after preliminary results of the catalyst sampling revealed that it was only 25 percent active. Additionally, the letter said that catalyst for emissions unit P017's oxidizer would be ordered that day.

Respondents also stated that additional testing would be conducted on both the inlet and outlet of the oxidizers and scrubbers to determine the control efficiencies and to determine the specific organic constituents.

24. On June 3, 2002, Respondents sent a letter to HCDES requesting approval to conduct an engineering study to determine the control efficiencies of the control devices for emissions units P010 and P017.

25. On June 4, 2002, HCDES sent a letter to Respondents accepting the engineering study proposed by the June 3, 2002 letter.

26. On June 9, 2002, HCDES sent Respondents a Notice of Violation ("NOV") letter for the failure to comply with the terms and conditions of PTI # 14-04576. Additionally, the NOV requested Respondents to submit a plan to bring the facility into compliance ("compliance plan").

27. On June 24, 2002, Respondents sent a reply to the June 9, 2002, NOV to HCDES. The reply contained steps, as outlined in Finding 23, that Respondents had taken to achieve compliance with the OC emission limitations as well as other planned corrective action items and their corresponding completion dates. Additionally, the response stated that the OC emission limitations specified in PTI # 14-04576 were derived from engineering calculations contained in Respondents' PTI application and not based on any specific regulation or actual measurement. The compliance tests had shown that the actual OC emission rates were higher than had been expected and that the measured OC emissions consisted of less water soluble and harder to condense constituents than had been originally thought. Additional testing had disclosed that the overall control efficiency for the oxidizer controlling OC emissions emitted by emissions unit P010 was 77 percent, by weight, and the overall efficiency for the scrubber controlling OC emissions from emissions unit P017 was 32 percent, by weight. However, the oxidizer and scrubber achieved

greater than 90 percent control efficiencies for the main chemical components that were expected to be present. A copy of the June 3, 2002, engineering study was attached.

28. On June 27, 2002, Respondents contacted HCDES to request approval to conduct additional testing (i.e., a second engineering study) of the OC emissions generated by the two ozonolysis plants (i.e., emissions units P010 and P017). On June 28, 2002, HCDES sent a letter to Respondents approving the second engineering study.

29. On July 9, 2002, Respondents sent a letter to update HCDES on the preliminary results from the recent engineering studies (i.e., July 3, 2002, stack test on the scrubber and oxidizer vents in building 60). The preliminary results verified that approximately half of the oxidizer vent gas stream was exiting through the scrubber when the oxidizer was operating (i.e., uncontrolled) and that the new oxidizer catalyst was operating at approximately 75 percent destruction efficiency. It was determined by Respondents that 11.2 lbs/hr of OC emissions were being emitted uncontrolled through each scrubber stack while each oxidizer was in operation and while the scrubbers were inactive. Thus, emissions units P010 and P017 were operated in violation of the Title V permit and/or PTI # 14-04576 and ORC § 3704.05(C) and (J)(2) since April 17, 2001 and September 14, 2001, respectively. Respondents stated that based on the preliminary results, it was now simultaneously operating both the oxidizer and the scrubber systems in both buildings 60 and 68. Additionally, Respondents said that if the oxidizers failed, the process area would be shut down until repairs were completed. To correct the high OC emission rates, Respondents proposed the following:

- to install a temporary cap on the scrubber vent to force all emissions to the oxidizer and retest to determine compliance;
- to contact the oxidizer vendor to explore possible reasons for the poor incinerator destruction efficiency with the new catalyst; and
- to determine if it would be feasible to operate the scrubber and oxidizer in series.

30. On July 31, 2002, HCDES sent a letter to Respondents to request the results of the June 27, 2002, proposed engineering study and the submittal of an Intent-to-Test ("ITT") notification form. The ITT was to be submitted at least 30 days prior to the dates the scrubbers and oxidizers for emissions units P010 and P017 would be retested.

31. On August 7, 2002, Respondents sent the final results of the second engineering study (i.e., the results of the July 3, 2002, stack test). The final results were consistent with the preliminary results presented in Respondents' July 9, 2002, letter. Respondents also said that they were awaiting a report from the oxidizers' manufacturing company to determine whether or not the oxidizers would be able to process the entire vent stream and that the catalyst in building 68's oxidizer had been replaced in July.

32. On September 16, 2002, Respondents met with HCDES. During the meeting, Respondents discussed the ozonolysis process, emissions history, the recent test results, the improvement efforts made, and the next steps to bring the facility into compliance. Respondents indicated that, at the time, it was not feasible to operate the oxidizers and scrubbers in series without significant equipment modifications. Additionally, Respondents stated that analysis had confirmed that the total exhaust stream would exceed the oxidizers' capacities. The next steps proposed by Respondents were to conduct additional testing (i.e., the third engineering study) to determine if changes in the dilution air would lower the OC load to the oxidizers and increase the actual destruction efficiencies of the oxidizers. Respondents would review the test results to finalize a short and long term action plan to assure compliance with the OC emission limitations.

33. On November 11, 2002, Respondents sent HCDES a copy of the third engineering study. Respondents had already discussed the preliminary results with HCDES via telephone on October 4, 2002. The results indicated that there was a leak in building 60's oxidizer's preheater. Additionally, the results revealed that OC emissions could be lowered if the dilution air was added to the vent header system instead of adding it directly to the headspace. The final day of testing revealed that the OC emissions were further reduced when the original six reactors were exhausted to the oxidizer (i.e., excluding the new reactor). This indicated that the thermal capacity of the oxidizer may be exceeded when the new and existing reactors were exhausted though the oxidizer and the dilution air was added in the headspace.

34. On November 27, 2002, Respondents sent a letter to HCDES updating it on the status of the compliance plan for buildings 60 and 68. Respondents stated that building 68's oxidizer had been examined and found to have one of the preheater tubes broken and approximately 50 percent of the other tubes were leaking due to hairline fractures. The fractures were believed to be caused by excessive heating. The letter also contained the proposed changes needed to route all of the oxidizers' exhaust to each scrubber and oxidizer operating in series. Respondents stated that the estimated time to make the changes and to replace and install a new preheater in the incinerator would be three months (i.e., expected to be completed in February 2003). Respondents stated that they were investigating the possibility of installing a regenerative thermal oxidizer ("RTO"). Once the incinerator was repaired or replaced, stack testing would be conducted to verify compliance. Upon demonstrating compliance the equipment needed to make the same changes to building 60 would be immediately ordered. Additionally, samples of building 68 oxidizer's catalyst were being evaluated by the catalyst supplier to determine its destruction efficiency.

35. On January 3, 2003, Respondents updated HCDES on the status of emissions units P010 and P017. Respondents stated that work was almost complete on building 68 and after compliance was demonstrated the work would start on building 60. Respondents also stated that building 60 had not been in operation for a few months.

36. On March 6, 2003, Respondents demonstrated compliance (1.7 lbs/hr) with the OC emission limitation specified in PTI # 14-04576 for emissions unit P017 (i.e., building 68). HCDES witnessed the stack test. During the test, the scrubber and oxidizer systems were operating in series.

37. On March 29, 2003, Ohio EPA issued Respondents a Title V permit authorizing the operation of its facility. The Title V permit contained the same OC emission limitations for emissions units P010 and P017 as PTI # 14-04576. The Title V permit did not contain any requirement for emissions unit P017's exhaust to be controlled by the two systems operating in series (i.e., the way compliance was demonstrated on March 6, 2003).

38. On June 20, 2003, HCDES sent Respondents a letter requesting the following information: detailed information on the steps taken to bring emissions unit P017 into compliance; the actual annual OC emissions for 1996 through the present and for the time between April 11, 2002 and March 6, 2003; a description of the current control device configuration for emissions unit P017; and detailed information on how and when emissions unit P010 would achieve and demonstrate compliance.

39. On July 18, 2003, Respondents provided the information requested in HCDES's June 20, 2003, letter. The letter indicated that the two control devices were operating in series and that the repairs to the oxidizer's preheater tubes had been completed for building 68 (i.e., emissions unit P017). Respondents indicated that the parts to make the same changes to building 60's control devices were ordered and that a compliance demonstration was estimated to occur by September 30, 2003. Respondents also provided the detailed calculations of the requested annual emission rates. The calculations indicated that the increase in OC emissions associated with the installation of the modifications were below the major modification applicability threshold and, therefore, not subject to the requirements of new source review. The bulk of the annual OC emission rates were due to uncontrolled exhaust escaping through the scrubber system when the incinerator was operating. In other words, the uncontrolled emissions had been occurring in the years prior to the modification and were considered to be baseline emissions.

40. On October 21, 2003, Respondents demonstrated compliance (1.2 lbs/hr) with the OC emission limitation specified in PTI # 14-04576 for emissions unit P010 (i.e., building 60) while the unit was exhausted through the scrubber and oxidizer systems operating in series. HCDES witnessed the stack test.

41. On November 4, 2003, HCDES sent an electronic mail to Respondents requesting a breakdown of the repair cost to emissions units P010's and P017's control equipment.

42. On November 12, 2003, Respondents sent an electronic mail indicating the repair cost requested by HCDES. Respondents spent \$272,000 in 2003, and \$232,701 in 2002, in capital costs to bring emissions units P010 and P017 into compliance. Respondents gained a significant economical benefit by delaying these expenditures. Additionally, Respondents gained an economic savings in operating costs by not operating the control equipment in series.

43. On January 29, 2004, HCDES requested basically the same OC information and current control equipment configuration information for emissions unit P010 as specified in Finding 37 for emissions unit P017.

44. On February 19, 2004, Respondents replied to HCDES's January 29, 2004, letter. The emissions calculations again confirmed that the modification did not trigger a major modification and that building 60's control devices were now in operation in series.

45. On January 20, 1981, Ohio EPA issued PTI # 14-312 to Respondents authorizing the installation of emissions unit B028. The PTI limited emissions unit B028's PE to 0.06 pound per million Btu ("lb/MMBtu") of actual heat input.

46. On April 29, 2003, Ohio EPA issued a Title V permit to Respondents. The Title V permit required Respondents to conduct emission testing on emissions unit B028 to demonstrate compliance with the 0.06 lb/MMBtu PE limitation. The testing was required to be performed within one year of permit issuance and within 6 months of permit expiration.

47. On March 24, 2004, the emission testing on emissions unit B028 was conducted. The test data from this test was found not to be of sufficient accuracy and precision to be used in determining compliance because the test method did not comply with the requirements specified in the applicable reference methods.

48. On May 28, 2004, Respondents conducted the compliance test for emissions unit B028 that was required by the Title V permit. The compliance test measured the average PE rate at 0.33 lb/MMBtu. This result revealed an exceedance of the 0.06 lb/MMBtu limitation specified in Respondents' Title V permit and PTI. This exceedance also constituted a violation of ORC § 3704.05(C) and (J)(2).

49. On July 20, 2004, HCDES sent Respondents a NOV letter for the failure to comply with the terms and conditions of Respondents' Title V permit and PTI. Additionally, the NOV requested Respondents to submit a plan to bring emissions unit B028 into compliance ("compliance plan").

50. On August 3, 2004, Respondents replied to the July 20, 2004, NOV. The

reply stated that Respondents had begun inspection of the baghouse controlling emissions unit B028 immediately after the results of the failed stack test were received. The inspection revealed that 19 of the 576 bags were broken. Respondents replaced all broken bags and scheduled a follow-up test for August 4 and 5, 2004.

51. On August 11, 2004, Respondents sent a written update to HCDES on the progress to bring emissions unit B028 into compliance. The letter stated that after the visual inspection of the August 4 and 5, 2004, stack test filters, Respondents switched the fuel for the boiler from coal to number 4 fuel oil to lower the potential PE. Additionally, Respondents said that the preliminary test results received on August 9, 2004 indicated that the PE while burning coal were still above the emission limitation. The final results confirmed that the emissions unit was still exceeding the PE limit, with actual PE measured at 0.16 lb/MMBtu on August 4, 2004 at a steam pressure of 1,250 pounds per square inch gauge ("psig") and at 0.09 lb/MMBtu at a steam pressure of 1,000 psig. Further, Respondents were planning on burning only fuel oil in emissions unit B028 until after the scheduled shutdown maintenance was completed in September. Once the unit was back on line, Respondents planned to retest.

52. On September 30, 2004, Respondents informed HCDES that during the scheduled maintenance a leading baghouse service company completely replace all bags with new, heavier duty bags and a leaking bypass valve was replaced. Additionally, Respondents indicated that the boiler only used fuel oil until it was shut down on September 21, 2004 for the maintenance.

53. On October 11 and 12, 2004, Respondents conducted the retest on emissions unit B028 with it operating at high and low steam pressures while firing on coal. Compliance was demonstrated with the PE limitation while operating emissions unit B028 at the lower steam pressure. However, PE were measured at 0.53 lb/MMBtu while operating at the higher steam pressure. The testing company reported that there were possible errors made during the analyses (there appeared to be pieces of Teflon in the acetone rinse from the third run of the higher steam pressure test) and offered to redo the tests.

54. On November 10, 2004, the retest was conducted. Prior to the test, Respondents had performed another inspection and an air leak was discovered and repaired on the connection between the boiler and economizer. This test demonstrated compliance with the emission limitation with an average measured PE rate of 0.03 lb/MMBtu. However, the results of the test were invalid due to sampling being performed at a non-isokinetic rate. The testing company again agreed to retest.

55. On December 8, 2004, the stack test demonstrated that emissions unit B028 was in compliance with the PE limitation while operating at the higher steam pressure and

firing on coal. In summary, Respondents failed to comply with the PE limitation specified in the Respondents' Title V permit and PTI, from May 28, 2004 (the date of the first failed stack test) until December 8, 2004 (the date compliance was demonstrated), excluding approximately two months while the boiler only burned fuel oil or was shut down for maintenance, in violation of ORC § 3704.05(C) and (J)(2).

56. On March 26, 1997, Ohio EPA issued PTI # 14-4154 authorizing the installation of emissions units P057, P059 and P060. In April 1990, Ohio EPA issued PTI # 14-01897 authorizing the installation of emissions unit P058. These PTIs limited the total OC emissions from these emissions units to 11.16 lbs/hr and required the scrubber controlling the OC emissions to have a minimum OC control efficiency of 80 percent, by weight. On April 29, 2003, Ohio EPA issued a Title V permit to Respondents that contained the OC emission limitation and OC emission control efficiency requirement as specified in the PTIs. Additionally, the Title V permit required Respondents to conduct emission testing to demonstrate compliance with these requirements.

57. On September 5, 2003, Respondents conducted the required emission test for emissions units P057 through P060 as required by its Title V permit. The average OC emission rate was determined to be 5.6 pounds per hour. However, the average OC emission control efficiency was determined to be 72.7 percent, by weight. Respondents failed to comply with the required OC emission control efficiency of 80 percent, by weight, as specified in Respondents' Title V permit and PTIs, in violation of ORC § 3704.05(C) and (J)(2).

58. On December 17, 2003, HCDES sent Respondents a NOV for the failure to comply with the terms and conditions of Respondents' Title V permit and PTIs for emissions units P057 through P060. Additionally, the NOV requested Respondents to submit a compliance plan for emissions units P057 through P060.

59. On January 2, 2004, Respondents replied to the December 17, 2003, NOV. Respondents explained that the 80 percent scrubber control efficiency was for the control of methanol and that the scrubber was actually removing greater than 80 percent of the condensable portion (primarily methanol). However, side reactions were creating small amounts of higher volatility hydrocarbons that were not condensing in the scrubber, thus lowering the overall control efficiency of the scrubber. Due to this explanation, Ohio EPA issued a modification to PTI # 14-4154 on February 12, 2004, to change the 80 percent control efficiency limitation to only apply to condensable OC emissions. On April 8, 2004, PTI 14-01897 was similarly modified to reflect this change with respect to emissions unit P058.

60. On April 29, 2003, Ohio EPA issued a Title V permit to Respondents with the following special terms and conditions to ensure that emissions unit B027 complies with applicable rules and laws:

- a requirement to comply with the PE limitation of 0.10 lb/MMBtu of heat input, as specified in 40 CFR, Part 60, Subpart D;
- a requirement to conduct compliance tests to demonstrate compliance with the PE limitation;
- a requirement to monthly monitor and maintain records and submit annual reports of the sulfur, methane and heat contents and the quantity of landfill gas combusted in emissions unit B027; and
- a requirement to daily collect and analyze representative samples of the coal burned.

61. On September 19, 2003, HCDES inspected Respondents' facility and discovered that Respondents were not complying with the Title V permit requirements to monitor and maintain records of the sulfur content of the landfill gas burned in emissions unit B027, in violation of ORC § 3704.05(C) and (J)(2). On October 7, 2003, HCDES sent Respondents a NOV for the failure to monitor and maintain these records.

62. On October 28, 2003, Respondents replied to the September 19, 2003, NOV. Respondents stated that they had difficulty finding a testing company to do the required testing. However, an independent company was scheduled to start the sampling the next day. The subsequent sampling revealed minimal sulfur was present in the landfill gas. Because of the low amount of sulfur in the landfill gas, Respondents' Title V permit will be modified to require that the landfill gas only be sampled annually.

63. On January 22, 2004, Respondents conducted the compliance test for emissions unit B027 that was required by the Title V permit. The compliance test measured the average PE at 0.109 lb/MMBtu. This result revealed an exceedance of the 0.10 lb/MMBtu PE limitation specified in Respondents' Title V permit. This exceedance also constituted violations of ORC § 3704.05(A), (C) and (J)(2). However, HCDES noticed that the results of the PE test showed that the first run of the compliance test was significantly higher than the results of the second and third runs (0.25 vs. 0.0224 and 0.0545 lb/MMBtu). Therefore, it was recommended that a retest be conducted to determine compliance.

64. On March 25, 2004, Respondents conducted the retest on emissions unit B027. The average PE was measured at 0.018 lb/MMBtu, thus demonstrating compliance.

65. On December 29, 2005, Respondents had stack tests conducted for emissions unit B027 while firing coal. The tested average PE rate was 0.115 lb/MMBtu, which is an exceedance of the PE limitation of 0.10 lb/MMBtu. This is in violation of the Title V permit and ORC § 3704.05(C) and (J)(2).

66. In a letter dated March 27, 2006, HCDES sent a NOV letter to Respondents concerning the PE limitation violation found from the stack test of emissions units B027 on December 29, 2005. A compliance plan was requested to be submitted by not later than April 14, 2006.

67. On May 2, 2006, HCDES received Respondents' Title V annual compliance certification that indicated that Respondents failed to collect and analyze daily coal samples for 20 days in 2005, in violation of the Title V permit and ORC § 3704.05(C) and (J)(2).

68. On July 10, 2006, HCDES sent Respondents a NOV for the failure to daily collect and analyze coal burned in emissions unit B027.

69. In a letter dated January 3, 2006, to HCDES, Respondents informed HCDES that ownership of the facility was separated between Cognis Corporation and Cognis Oleochemicals LLC and included a listing of the emissions units at the facility and who is the owner.

70. The Title V permit for Respondents' facility requires the daily monitoring and record-keeping of the pressure drop across the baghouse controlling emissions unit P902. On February 1, 2006, HCDES received Respondents' fourth quarter 2005 deviation report. The report indicated that Respondents failed to record the pressure drop across this baghouse from July 1 through July 31, 2005, in violation of the terms and conditions of Respondents' Title V permit and ORC § 3745.05(C) and (J)(2). On March 2, 2006, HCDES sent a NOV letter to Respondents concerning these deviations as well as other minor deviations. Respondents corrected this deviation by providing training for operator personnel.

71. On January 24, 2006 and January 25, 2006, Respondents had stack tests conducted for emissions units P010 and P017, respectively. The tested average OC emission rates were 2.94 and 3.89 lbs/hr for emissions units P010 and P017, respectively. These emission rates exceeded the allowable OC emission rates of 2.59 and 2.54 lbs/hr for emissions units P010 and P017, respectively, in violation of the Title V permit and PTI # 14-04576 and ORC § 3704.05(C) and (J)(2).

72. On March 23, 2006, Respondents' emissions unit B027 malfunctioned due to failed boiler tubes, resulting in heavy black smoke being emitted from the stack of the unit in excess of the opacity limitation in OAC Rule 3745-17-07. Respondents' April 10, 2006, report to HCDES stated that the malfunction was due to failed boiler tubes and the tripping out of some sections of the electrostatic precipitator serving emissions unit B027 due to a large clinker bridging across multiple wires. This malfunction event lasted from about 7:00 a.m. until 2:20 p.m. of the same day, when the boiler was shut down; and resulted in over 50 citizen complaints to HCDES. After shutting down the boiler, Respondents were able to continue to operate by using a backup boiler. Ohio EPA finds

that this malfunction was excessively prolonged, in violation of OAC Rule 3745-15-06 and ORC § 3704.05(G).

73. In a letter dated March 27, 2006, HCDES sent a NOV letter to Respondents concerning the OC emission limitation violations found from the stack tests of emissions units P010 and P017 on January 24 and 25, 2006. A compliance plan was requested to be submitted by not later than April 14, 2006.

74. In a letter dated April 14, 2006, Respondents, in the name of Cognis Oleochemicals LLC, replied to the NOV letter of March 27, 2006, from HCDES. The letter identified the compliance plan for emissions units P010 and P017 as conducting a study of operating parameters and performing official compliance tests by May 31, 2006, and the compliance plan for emissions unit B027 as performing an official compliance test by May 31, 2006. Respondents indicated that the December 29, 2005 testing did show compliance as an average of three runs, but showed noncompliance after HCDES invalidated the third run due a misunderstanding between the HCDES observer and the tester over the opening of the filter holder. Respondents requested that HCDES reconsider the issuance of the NOV letter. On May 10, 2006, Respondents retested emissions unit B027 and demonstrated compliance with the PE limitation. However, the boiler did not operate at its design maximum rated capacity; therefore, it had to be retested at or near its maximum rated capacity. Additionally, Respondents were planning to retest emissions units P010 through P017 by the end of August 2006.

75. On September 27, 2006, Respondents had stack tests conducted for emissions units P010 and P017. The tested average hourly OC emission rates were measured at 2.63 and 1.62 lbs/hr for emissions units P010 and P017, respectively. These emission rates demonstrated that emissions unit P017 was complying with the 2.54 lbs/hour limitation specified in the Title V permit and PTI # 14-04576. However, the stack tests revealed that emissions unit P010 was exceeding the allowable OC emission rate of 2.59 lbs/hour specified in the Title V permit and PTI # 14-04576, in violation of the Title V permit and PTI # 14-04576 and ORC § 3704.05(C) and (J)(2).

76. On November 3, 2006, Respondents sent the results of the September 27, 2006 stack tests. The cover letter accompanying the results stated that Respondents believed the "high" emission rate was due to the catalyst in the incinerator (i.e., oxidizer) approaching the end of its useful life. Respondents stated that they had shut down emissions unit P010 and changed the catalyst on November 2, 2006. Further, Respondents stated that would retest emissions unit P010 within 90 days of the installation of the new catalyst. Respondents also stated that they planned to quarterly test emissions units P010 and P017 to assure compliance and to better predict the need to change the catalyst.

77. On December 1, 2006, HCDES sent a NOV letter to Respondents concerning the OC emission limitation violations identified from the stack test of emissions unit P010

on September 27, 2006. The NOV stated the steps to bring emissions unit P010 into compliance that were outlined in Respondents November 3, 2006, letter and mentioned in Finding 76 appeared to be acceptable.

78. The Director has given consideration to, and based his determination on, evidence relating to the technical feasibility and economic reasonableness of complying with the following Orders and the benefits to the people of the State to be derived from such compliance.

## **V. ORDERS**

The Director hereby issues the following Orders:

1. Pursuant to ORC § 3704.06, Respondents are assessed a civil penalty in the amount of three hundred ten thousand dollars (\$310,000) in settlement of Ohio EPA's claim for civil penalties. Within thirty (30) days after the effective date of these Orders, Respondents shall pay Ohio EPA the amount of two hundred twenty-eight thousand dollars (\$228,000) of the total penalty amount. Payment shall be made by official check made payable to "Treasurer, State of Ohio" for \$228,000. The official check shall be submitted to Brenda Case, or her successor, together with a letter identifying the Respondents, to:

Ohio EPA  
Office of Fiscal Administration  
P.O. Box 1049  
Columbus, Ohio 43216-1049

A copy of the check shall be sent to James A. Orlemann, Assistant Chief, SIP Development and Enforcement, or his successor, at the following address:

Ohio EPA  
Division of Air Pollution Control  
P.O. Box 1049  
Columbus, Ohio 43216-1049

2. In lieu of paying the remaining eight-two thousand dollars (\$82,000) of the civil penalty to Ohio EPA, Respondents shall fund the supplemental environmental projects ("SEPs") identified in Orders 3 and 4. Of the \$82,000, \$62,000 shall be used to fund the project in Order 3 and \$20,000 shall be used to fund the project in Order 4. In the event Respondents default or otherwise fail to complete any of the projects as specified in Orders 3 and 4, the \$62,000 for the project in Order 3 and/or the \$20,000 for the project in Order 4, whichever is (are) applicable, shall immediately become due and payable to Ohio EPA. Such payment shall be made by an official check made payable to "Treasurer, State of Ohio" and sent to Brenda Case, or her successor, together with a letter identifying the Respondents, to the above-stated address. A copy of the check shall be sent to James

A. Orlemann, or his successor, at the above-stated address.

3. Respondents shall fund a SEP by making a contribution in the amount of \$62,000 to Ohio EPA's Clean Diesel School Bus Program Fund (Fund 5CD). Respondents shall make payment within thirty (30) days after the effective date of these Orders by an official check made payable to "Treasurer, State of Ohio" for \$62,000. The official check shall specify that such monies are to be deposited into Fund 5CD established by Ohio EPA for the Clean Diesel School Bus Program. The official check shall be submitted to Brenda Case, or her successor, together with a letter identifying the Respondents, to the above-stated address. A copy of this check also shall be sent to James A. Orlemann, or his successor, at the above-stated address.

4. As outlined below, and with reference to the chapters described in Ohio EPA's 1993 "Ohio Pollution Prevention and Waste Minimization Planning Guidance Manual" (the Manual), Respondents shall conduct a pollution prevention study ("P2 Study") of the facility as a SEP in lieu of paying \$20,000 of the civil penalty. The P2 Study is an assessment of selected facility processes to identify and evaluate specific source reduction and environmentally sound recycling opportunities.

- a. Within ninety (90) days after the effective date of these Orders, Respondents shall submit a detailed narrative report to Ohio EPA for review and approval containing the following:
  - i. a list of the members of a cross-functional team for the P2 Study, including the name of a designated team leader;
  - ii. an identification of the processes selected for study and the methods used to select the processes; and
  - iii. a description of the processes being studied, including types and quantities of raw materials used, waste generated (i.e., air emissions, hazardous waste, solid waste, wastewater), and the intermediate or final products.

The above items shall be completed following the guidance provided in Chapters 8 and 9 of the Manual.

- b. Within one hundred eighty (180) days after the effective date of these Orders, Respondents shall submit a detailed narrative report to Ohio EPA for review and approval containing the following:
  - i. an analysis of the process-related factors contributing to waste generation;

- ii. a description of the specific pollution prevention opportunities identified; and
- iii. a discussion of the approach used in screening and prioritizing pollution prevention opportunities for future implementation.

The above items shall be completed following the guidance provided in Chapters 11 and 12 of the Manual.

- c. Within two hundred seventy (270) days after the effective date of these Orders, Respondents shall submit a detailed narrative final report to Ohio EPA for review and approval containing the following:
  - i. an evaluation of the cost considerations and feasibility analysis of the identified pollution prevention opportunities;
  - ii. a discussion of those projects that have been eliminated as well as those that have been implemented, planned for implementation, or under consideration for possible implementation; and
  - iii. a description of the other items bulleted in Table 7 of Chapter 15 of the Manual.

The above items shall be completed following the guidance provided in Chapters 13, 14 and 15 of the Manual.

- d. Within three hundred and thirty (330) days after the effective date of these Orders, Respondents shall submit an approvable detailed narrative final report to Ohio EPA, unless the report submitted to Ohio EPA pursuant to the above paragraph c is approved by Ohio EPA.

Ohio EPA shall provide Respondents with its comments and an indication of approval or disapproval of the reports submitted pursuant to this Order in a timely manner.

5. Within thirty (30) days of the completion and approval by Ohio EPA of the project identified in Order 4, Respondents shall submit documentation to Ohio EPA of the total cost of the P2 Study. If the total cost of the P2 Study is less than \$20,000, Respondents shall submit, along with the final report identified in Order 4 and in the manner described in Order 1, an official check to Ohio EPA for the difference in cost between \$20,000 and the total cost of the P2 Study.

6. Within ninety (90) days after the effective date of these Orders, Respondents shall submit a PTI application and a Title V permit modification application to HCDES to request a change to the landfill gas monitoring time from monthly to annually for emissions unit B027. The Title V permit application shall also contain a request that reflects the changes authorized by the February 12, 2004 and April 8, 2004 modifications to PTI 14-01897 and PTI 14-4154, respectively. Additionally, within the same time period, Respondents shall submit a PTI application(s) and Title V permit modification application for emissions units P010 and P017 to reflect the control system configuration and operating parameters that existed during the compliance demonstration.

7. Within ninety (90) days after the effective date of these Orders, Respondents shall bring emissions units B027, P010 and P017 into compliance with their allowable emission limitations and demonstrate compliance by stack testing pursuant to Order 8.

8. Within ninety (90) days after the effective date of these Orders, Respondents shall conduct, or have conducted, emission testing for emissions units B027 to determine compliance with the PE limitation of 0.10 lb/MMBtu. Until compliance is demonstrated by a stack test, Respondent shall not operate emissions unit at a steam generation rate higher than rate it operated at during the May 10, 2006, stack test. The test shall be conducted with the following requirements:

- a. Methods 1 through 5 of 40 CFR, Part 60, Appendix A shall be employed to demonstrate compliance with the PE. Alternative USEPA approved test methods may be used with prior approval from HCDES.
- b. The tests shall be conducted while the emissions unit is burning coal and operating at or near their maximum capacities, unless otherwise specified or approved by HCDES.
- c. Not later than thirty (30) days prior to the proposed test dates, the permittee shall submit "Intent-to-Test" notifications to HCDES. The Intent-to-Test notifications shall describe in detail the proposed test methods and procedures, the emissions units' operating parameters, the times and dates of the tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA's or HCDES's refusal to accept the results of the emission tests.
- d. Personnel from Ohio EPA and/or HCDES shall be permitted to witness the tests, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions units and the testing procedures provide a valid characterization of the emissions from the

emissions units and/or performance of the control equipment

- e. A comprehensive written report on the results of the emissions tests shall be signed by the persons responsible for the tests and submitted to HCDES within thirty (30) days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from Ohio EPA or HCDES.

9. Within ninety (90) days after the effective date of these Orders, Respondents shall submit a complete and approvable preventive maintenance and malfunction abatement plan to HCDES, which is prepared in accordance with OAC Rule 3745-15-06(D), for the catalytic oxidizers serving emissions units P010 and P017.

10. Within thirty (30) days after the effective date of these Orders, Respondents shall submit to HCDES the results of the September 25 to October 2, 2006, speciation tests for emissions units P010 and P017.

11. Within sixty (60) days after the effective date of these Orders, Respondents shall submit revised Title V fee emission reports for calendar years 1993 through 2003 that reflect the corrected actual OC emissions for emissions units P010 and P017, and shall pay corresponding fees in accordance with invoices from Ohio EPA.

## **VI. TERMINATION**

Respondents' obligations under these Orders shall terminate when Respondents certify in writing and demonstrate to the satisfaction of Ohio EPA that Respondents have performed all obligations under these Orders and the Chief of Ohio EPA's Division of Air Pollution Control acknowledges, in writing, the termination of these Orders. If Ohio EPA does not agree that all obligations have been performed, then Ohio EPA will notify Respondents of the obligations that have not been performed, in which case Respondents shall have an opportunity to address any such deficiencies and seek termination as described above.

The certification shall contain the following attestation: "I certify that the information contained in or accompanying this certification is true, accurate and complete."

This certification shall be submitted by Respondents to Ohio EPA and shall be signed by a responsible official of Respondents. For purposes of these Orders, a responsible official is the person authorized to sign in OAC Rule 3745-35-02(B)(1) for a corporation or a duly authorized representative of Respondents as that term is defined in the above-referenced rule.

## **VII. OTHER CLAIMS**

Nothing in these Orders shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership or corporation, not a party to these Orders, for any liability arising from, or related to, the operation of Respondents' facility.

## **VIII. OTHER APPLICABLE LAWS**

All actions required to be taken pursuant to these Orders shall be undertaken in accordance with the requirements of all applicable local, state and federal laws and regulations. These Orders do not waive or compromise the applicability and enforcement of any other statutes or regulations applicable to Respondents.

## **IX. MODIFICATIONS**

These Orders may be modified by agreement of the parties hereto. Modifications shall be in writing and shall be effective on the date entered in the journal of the Director of Ohio EPA.

## **X. NOTICE**

Except as otherwise provided in these Orders, all documents required to be submitted by Respondents pursuant to these Orders shall be addressed to:

Hamilton County Department of Environmental Services  
Air Quality Programs  
250 William Howard Taft Road  
Cincinnati, Ohio 45219-2660  
Attention: Kerri Castlen

and to:

Ohio Environmental Protection Agency  
Lazarus Government Center  
Division of Air Pollution Control  
122 South Front Street, P.O. Box 1049  
Columbus, Ohio 43216-1049  
Attention: Thomas Kalman, Manager, Enforcement Section

or to such persons and addresses as may hereafter be otherwise specified in writing by Ohio EPA.

#### **XI. RESERVATION OF RIGHTS**

Ohio EPA and Respondents each reserve all rights, privileges and causes of action, except as specifically waived in Section XII of these Orders.

#### **XII. WAIVER**

In order to resolve disputed claims, without admission of fact, violation or liability, and in lieu of further enforcement action by Ohio EPA for only the violations specifically cited in these Orders, Respondents consent to the issuance of these Orders and agree to comply with these Orders. Compliance with these Orders shall be a full accord and satisfaction for the Respondents' liability for the violations specifically cited herein.

Respondents hereby waive the right to appeal the issuance, terms and conditions, and service of these Orders, and Respondents hereby waive any and all rights Respondents may have to seek administrative or judicial review of these Orders either in law or equity.

Notwithstanding the preceding, Ohio EPA and Respondents agree that if these Orders are appealed by any other party to the Environmental Review Appeals Commission, or any court, Respondents retain the right to intervene and participate in such appeal. In such an event, Respondents shall continue to comply with these Orders notwithstanding such appeal and intervention unless these Orders are stayed, vacated, or modified.

#### **XIII. EFFECTIVE DATE**

The effective date of these Orders is the date these Orders are entered into the Ohio EPA Director's journal.

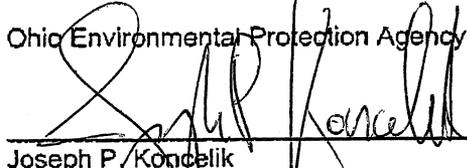
#### **XIV. SIGNATORY AUTHORITY**

Each undersigned representative of a party to these Orders certifies that he or she is fully authorized to enter into these Orders and to legally bind such party to these Orders.

Director's Final Findings and Orders  
Cognis Corporation  
Cognis Oleochemicals LLC  
Page 23 of 23

**IT IS SO ORDERED AND AGREED:**

Ohio Environmental Protection Agency



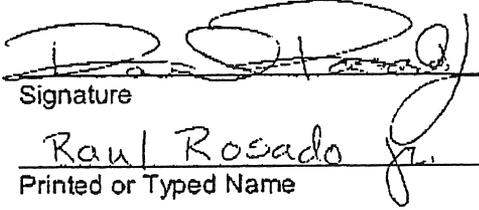
Joseph P. Koncelik  
Director

12/29/06

Date

**IT IS SO AGREED:**

Cognis Corporation

  
Signature

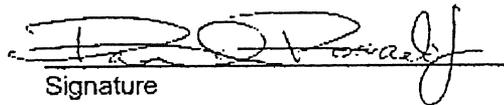
Raul Rosado Jr.  
Printed or Typed Name

12/28/06

Date

General Counsel & Secretary  
Title

Cognis Oleochemicals LLC

  
Signature

Raul Rosado Jr.  
Printed or Typed Name

12/28/06

Date

General Counsel & Secretary  
Title