

217/782-2113

REVISED@
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Toscopetro Corp./Wood River Refinery
Attn: Christina McDowell
Post Office Box 262
Wood River, Illinois 62095

Application No.: 72110631
Applicant's Designation: WRR-29
Subject: Cooling Water Towers
Date Issued: January 27, 2000

I.D. No.: 119090AAA
Date Received: November 16, 1999
Expiration Date: Upon Final Action
of Title V Permit

Location: 900 S. Central Avenue, Roxana

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of thirteen (13) Cooling Water Towers (CWT 2, CWT 2A, CWT 14, CWT 17, CWT 19, CWT 7, CWT 15, CWT 9C, CWT 11A, CWT 20, CWT 12B, CWT 13, and CWT 16) pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s). This permit, including these special conditions, is enforceable under State law pursuant to the Environmental Protection Act and under federal law pursuant to the Clean Air Act.

- 1a. This Federally Enforceable State Operating Permit is issued to address the requirements of 35 Ill. Adm. Code 219.986(d)(3)(C) which requires that inspection and monitoring programs for non-contact cooling water towers be carried out in accordance with conditions in a federally enforceable operating permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
2. The Permittee shall implement an inspection and monitoring program as follows, to detect leaks of volatile organic material (VOM) into the cooling water system associated with each of the 13 cooling water towers (CWTs) pursuant to 35 Ill. Adm. Code 219.986(d)(3)(C).
 - a. SAMPLE LOCATIONS

Samples shall be taken of the cooling water supply and return flows for the thirteen CWTs as follows.

COOLING WATER SAMPLE LOCATIONS

<u>Cooling Towers</u>	<u>Department</u>	<u>Sample Points</u>
CWT 2 & 2A	Distilling	CWT 2/2A common supply and return
CWT 14 & 17	Distilling	CWT 14/17 common supply and return
CWT 19	Distilling	CWT 19 supply and return
CWT 7	Lubricants	CWT 7 supply and return
CWT 15	Lubricants	CWT 15 supply and return
CWT 9C	CCU/Alky	CWT 9C supply and return
CWT 11A	CCU/Alky	CWT 11A supply and return
CWT 20	CCU/Alky	CWT 20 supply and return
CWT 12B	Hydroprocessing	CWT 12B supply and return
CWT 13 & 16	Hydroprocessing	CWT 13/16 common supply and return

b. SAMPLE HANDLING

Samples shall be taken in Volatile Organic Analysis (VOA) vials. The vials are to be liquid full and capped such that the sample contains no air space. This method of sampling will minimize any losses of VOM to the atmosphere.

The supply and return samples shall be taken at approximately the same time for each cooling tower. The samples shall be analyzed on the same day they are sampled.

c. PARAMETERS MEASURED

Total Carbon (TC) analysis shall be used as the primary leak detection measurement. The TC of the return flow shall be compared against that of the supply to look for any increases.

The test shall be ran on a TOC analyzer in the TC mode. In this mode, a microportion of the water sample shall be injected into a heated reaction chamber where it is vaporized and all the carbon is oxidized to CO₂. The CO₂ shall be measured by means of an infrared analyzer.

For this method the samples are not filtered, acidified, or sparged prior to the analysis. This minimizes the loss of any light hydrocarbons which may be present.

This analytical method will pick up inorganic carbon as well as organic carbon. However, the concentration of the inorganic carbon will be the same in both the supply and return flows, so any increases in the TC reading shall be attributed to organic carbon.

The residual chlorine level in the towers shall be used as a secondary measure of a hydrocarbon leak in a tower, since most hydrocarbon leaks will lead to a chlorine depletion. This test shall be part of the weekly inspection program performed on all towers. The method of the residual chlorine analysis shall be the Sodium Phosphate Dibasic color wheel/photometric test.

d. MONITORING AND INSPECTION

CWT 20 shall be subject to weekly monitoring for an increase in TC in the return line since it has a circulation rate in excess of 25,000 gallons per minute. The remaining towers shall be monitored on a monthly basis for an increase in TC in the return line since their circulation rates are less than 25,000 gallons per minute. Additional testing shall be performed in the event a leak is suspected.

In addition, all towers shall be subject to a weekly inspection program. The program shall consist of the following elements:

- ✓ Chlorine residual test,
- ✓ Observed high chlorine demand,
- ✓ Evidence of foaming,
- ✓ Discolored water,
- ✓ Hydrocarbon odor,
- ✓ Visible floating hydrocarbon, and
- ✓ Biological growth on the tower wood or screens.

An inspection checklist containing these elements shall be completed weekly for each CWT system. The checklist shall include steps to take if the inspection parameters indicate the presence of a leak.

e. LEAK CRITERIA

A leak shall be detected if a statistically significant increase of 1 ppm in TC concentration at the 95 percent confidence level (as determined using the Monitoring Cooling Water Towers for Leaks Recommended Statistical Analysis submitted to the Agency dated December 22, 1994) is observed. This leak criteria shall be consistent with the cooling water tower leak criteria described in the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP) for Synthetic Organic Chemical Manufacturing Industry (SOCMI) chemical manufacturing processes at 40 CFR 63.104(b)(v).

If the sampling indicates the presence of a leak, a second set of supply and return line samples shall be analyzed to confirm the presence of the leak as soon as possible. If the presence of a leak is confirmed, efforts to identify and locate the leaking components shall begin.

3. In accordance with 35 Ill. Adm. Code 219.986(d)(4), if a VOM leak in a cooling water system is identified, the Permittee shall initiate and carry out steps to identify the specific leaking component or components as soon as practicable, but in no event later than three days after detection of the leak.
 - a. The Permittee shall repair or remove from service the leaking component, as soon as possible but no later than thirty (30) days after the leak is detected, unless the leaking component cannot be repaired until the next scheduled shutdown for maintenance.
 - b. Upon completion of any repair or removal of a leaking component, the supply and return water samples shall be retested for TC to confirm that the leak has been repaired or eliminated.

- 4a. In accordance with 35 Ill. Adm. Code 219.986(d)(5), the Permittee shall maintain records of the following items, and such other items as may be appropriate to allow the Agency to review compliance with the limits in Condition No. 1.
 - i. Records of inspection and monitoring activity, including date, time and identification of the tower that was sampled,
 - ii. Records of each leak identified in each tower, with date, time, and nature of observation or measured level of parameter,
 - iii. Records of activity to identify leaking components, with date initiated, summary of components inspected with dates and method of inspection and observations.
 - iv. Records of activity to remove a leaking component from service or repair of a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated. If the leaking component is not identified, repaired, or eliminated within 30 days of initial identification of a leak in such tower, this report shall include specific reasons why the leak could not be eliminated sooner including all other intervening periods when the process unit was out of service, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence a leak of this type.

- v. Records of all non-contact process water cooling towers that are exempt from the requirements of 35 Ill. Adm. Code 219.986(d)(3)(B) and (d)(3)(C).
- b. The records required by this permit shall be retained at a readily accessible location at the plant for at least 3 years from the date of entry and shall be made available for inspection and copying by the Agency and USEPA upon request.
- 5a. In accordance with 35 Ill Adm. Code 219.986(d)(6) the Permittee shall submit an annual report to the Agency which provides the following information:
 - i. The number of leaks identified in each cooling tower,
 - ii. A general description of activity to repair or eliminate leaks which were identified,
 - iii. Identification of each leak which was not repaired in 30 days from the date of identification of a leak in such tower, with description of the leaks, explanation of why the leak was not repaired in 30 days, and
 - iv. Identification of any periods when required inspection and monitoring activities were not carried out.
- b. One copy of the report shall be sent to the following address at the time of the Permittee's submission of their Annual Emission Report:

Illinois Environmental Protection Agency
Bureau of Air
Compliance and Systems Management Section
2200 Churchill Road, P.O. Box 19276
Springfield, Illinois 62794-9276

If you have any questions on this, please call Bob Smet at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:RPS:psj

cc. IEPA, FOS Region 3
IEPA, FOS - CMU
USEPA
PCF 23