



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR

RENEE CIPRIANO, DIRECTOR

(217) 782-5544
TDD: (217) 782-9143

December 22, 2004

Dorothy Gunn, Clerk
Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, IL 60601

RECEIVED
CLERK'S OFFICE

DEC 27 2004

STATE OF ILLINOIS
Pollution Control Board

IEPA 05-2

**RE: NOTICE OF PROVISIONAL VARIANCE APPROVAL
PV-2005-01**

Dear Ms. Gunn:

Pursuant to Subsection 37(b) of the Environmental Protection Act (415 ILCS 5/37(b)), attached is a copy of the Illinois EPA's recent approval of a request for provisional variance. As you know, the Board must maintain for public inspection copies of all provisional variances filed with it by the Illinois EPA. Please feel free to call me at the number referenced above should you have any questions.

Sincerely,

Connie L. Tonsor
Associate Counsel
Division of Legal Counsel

Attachment

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

December 21, 2004

RECEIVED
CLERK'S OFFICE

DEC 27 2004

STATE OF ILLINOIS
Pollution Control Board

PVD Midwest Refinery, LLC)
 CITGO Petroleum Corporation)
 Petitioners,)
)
 v.)
)
 ENVIRONMENTAL PROTECTION AGENCY,)
)
)
 Respondent.)

PV-2005-01

(Provisional Variance- Water)

IEPA 05-2

Re: Provisional Variance From the Ammonia Monthly Average Concentration Specification in NPDES Permit # IL0001589

Dear Mr. Harmon:

On December 8, 2004, and December 10, 2004, the IEPA received faxes in which PVD Midwest Refinery, LLC and CITGO Petroleum Corporations (Petitioners) requested a provisional variance from the monthly average ammonia limitation level of 9.4 mg/L contained in Lemont Refinery's NPDES permit.¹ (Hard copies of these documents are attached as Exhibit A.) For the reasons discussed below, the Illinois EPA has decided to GRANT the Petitioners' request.

On November 2, 2004, there was a malfunction in the treatment system at the Lemont Refinery. One of the effects of the malfunction was that the microorganisms in the treatment plant that biodegrade the ammonia were killed. As a result, Lemont Refinery has been unable to meet the above-mentioned ammonia level.

Petitioners seek a provisional variance while the Lemont Refinery reestablishes the nitrification process (i.e, reestablishes the microorganisms) in its wastewater treatment plant. Petitioners expect that the Lemont Refinery will be able to meet monthly limit for ammonia by December 31, 2004.

Based on its review, the Illinois EPA has concluded the following:

1. The environmental impact from the proposed activity should be minimal;
2. No other reasonable alternative appears available;
3. No public water supplies should be affected;

¹ Petitioners also requested a provisional variance from 35 Ill. Adm. Code 309.102. Section 309.102(a) provides in pertinent part that it is unlawful to discharge a contaminant or pollutant except as in compliance with the provisions of the Act, Board regulations, the Clean Water Act, and the provisions and conditions of the NPDES permit. Because provisional variances are authorized under the Act, the Illinois EPA views this as being in compliance with the Act; hence a provisional variance from this provision is unnecessary.

4. No federal regulations will preclude the granting of this request; and
5. The Petitioners will face an arbitrary and unreasonable hardship if the request is not granted.

The Illinois EPA hereby GRANTS the Petitioners a provisional variance from the monthly average ammonia limitation contained in its NPDES permit.

The provisional variance will run for a 45-day period beginning December 8, 2004, through January 21, 2005, and is subject to the following specific conditions:

- A. The monthly average ammonia limitation shall not exceed 15mg/L.
- B. The Petitioners shall continue to monitor and maintain compliance with all other parameters and conditions specified in its National Pollutant Elimination Permit No. IL 0001589.
- C. The Petitioners shall notify Barb Conner of the Illinois EPA by telephone at 217/782-9720 when the monthly limit for ammonia is achieved. Written confirmation of each notice shall be sent within five days to the following address:

Illinois Environmental Protection Agency
 Bureau of Water – Water Pollution Control
 Attention: Barb Conner
 1021 North Grand Avenue East, MC #19
 P.O. Box 19276
 Springfield, Illinois 62794-9276

- C. The Petitioners shall sign a certificate of acceptance of this provisional variance and forward that certificate to Barb Conner at the address indicated above within ten days of the date of this order. The certification should take the following form:

I (We) _____, hereby accept and agree to be bound by all terms and conditions of the provisional variance granted by the Illinois EPA in _____ dated _____.

Petitioner

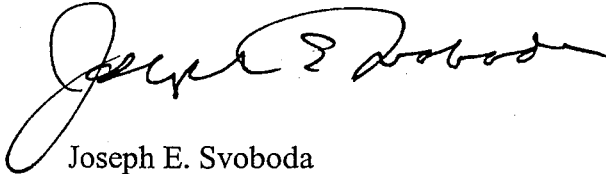
Authorized Agent

Title

Date

The Illinois EPA grants this provisional variance in accordance with its authority contained in Sections 35(b), 36(c), and 37 (b) of the Illinois Environmental Protection Act (415 ILCS 5/35(b), 36(c), and 37(b)) (2004). The decision to grant this provisional variance is not intended to address compliance with any other applicable laws or regulations.

Sincerely,



Joseph E. Svoboda
Chief Legal Counsel

Enclosure

c: IPCB, Clerk
Jeffrey C. Fort
Letissa Carver Reid
Sonnenschein, Nath and Rosenthal
8000 Sears Tower
233 S. Wacker Drive
Chicago, Illinois 60606

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7003 1680 0000 3653 9034**

OE 144-04



CITGO Petroleum Corporation

135th Street & New Avenue
Lemont, IL 60439-3659

TO: Rene Cipriano, Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276
(217) 782-5544
(217) 782-9807 (fax)

CC: Connie Tonsor
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Mail Code #21
Springfield, IL 62794-9276
(217) 557-4267
(217) 782-9807 (fax)

Roger Calloway
Bureau of Water
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276
217-782-9720
217-557-1407 (fax)

REQUESTED BY:

CITGO Petroleum Corporation
135 Street and New Avenue
Lemont, IL 60439
(630) 257-4450
(630) 257-4364 (fax)

RECEIVED
Division of Legal Counsel

DEC 14 2004

**Environmental Protection
Agency**

Pursuant to 415 ILCS 5/35(b), PDV Midwest Refinery, LLC ("PDVMR") and CITGO Petroleum Corporation ("CITGO") hereby requests a provisional variance to operate its Lemont Refinery with a higher ammonia monthly average concentration than is currently allowed under its National Pollutant Discharge Elimination System ("NPDES") permit and under 35 Ill. Adm. Code §309.102, for a period not to exceed forty-five (45) days. (Hereafter, Petitioners PDVMR and CITGO will be jointly referred to as CITGO.)

The Lemont Refinery includes a physical/chemical and biological wastewater treatment plant (the "Plant"). The Plant performs primary, secondary, and tertiary treatment on the generated wastewater before it is discharged to the Chicago Sanitary & Ship Canal (the "Canal"). The original Plant, which began operating in 1969, included two oil/water separators, a flow equalization tank, a primary clarifier, an activated sludge system and a polishing pond. Several wastewater treatment plant modifications have been made since the original installation. Major changes to the system include, induced gas flotation, replacement oil/water separators, segregation of process and storm sewers along with installation of process water storage tanks, a new aeration basin, a high efficiency aeration system, and a second final clarifier.

The primary treatment portion of the current Plant consists of four sour water strippers for ammonia and sulfide removal, oil/water separators for free oil removal, and process tanks. Effluent from the process tanks flows to the secondary treatment plant which consists of induced gas flotation ("IGF") and activated sludge treatment systems. The activated sludge system includes three aeration basins operated in parallel with a total aeration basin volume of 1.92 million gallons. Aeration is provided by a fine-bubble diffused aeration system. Activated sludge is settled in two 100-foot diameter secondary clarifiers. Within the aeration basin, phosphoric acid is added as a nutrient for biological organisms. During the winter, steam is injected into the equalization tank to maintain operating temperatures at a minimum of 70° F in the aeration basin effluent. The tertiary system consists of a 16-million gallon basin. The purpose of the basin is to remove any carryover solids from the secondary clarifier settling. The basin also serves as a water supply for fire protection.

Since 1987, the Refinery has been subject to a site-specific rule concerning ammonia discharge limits, has made improvements to the wastewater treatment system, and has continued its efforts to reduce the concentration of ammonia and ammonia nitrogen in its wastewater. The Refinery met these requirements through various upgrades to the wastewater treatment system.

On November 2, 2004, the FCC blower tripped, disrupting the FCC unit which resulted in the CO boiler tripping off-line. The CO boiler failure, upset the steam supply to the sour water stripping system which reduced the ability to strip ammonia from the sour water. This resulted in an elevated ammonia concentration entering the wastewater treatment system. In addition, the FCC upset caused monoethanolamine (MEA) carryover from the MEA absorber into the wastewater treatment system. The microorganisms in the wastewater treatment plant biodegrade the amine portion of the MEA into ammonia. As a result, during the month of November 2004, the Refinery's daily effluent sampling results indicated elevated ammonia levels which prevented the Refinery from meeting the monthly ammonia average specification of 9.4 ppm.

After the FCC upset, the Refinery took several steps to correct the problem. Beginning on November 6, 2004, the Refinery recycled water back to the wastewater treatment plant for re-treatment instead of discharging the water to the Canal. The Refinery also shut down its effluent for two periods during the month of November — from November 6, 2004 through November 17, 2004, and again from November 22, 2004 through November 23, 2004.

The Refinery attempted to reestablish nitrification by seeding the aeration basins with nitrifiers. The Aeration basins were seeded twice with purchased nitrifier cultures. The first batch was administered for four days starting Friday November 5th and the second batch was administered for four days starting Saturday, November 13th. The aeration basins were also seeded with several truck loads of biomass from a neighboring refinery. Eight truck loads of the biomass were delivered — each containing 3500 gallons. The first delivery of two truck loads

was made on November 19, 2004. The remaining six loads were delivered at two loads per day from Monday, November 22, 2004 through Wednesday, November 24, 2004.

In addition to seeding the aeration basins in an attempt to reestablish nitrification, the Refinery also treated the tertiary 16 million gallon basin with hypochlorite (bleach) to reduce the ammonia levels. On November 15, 2004, the Refinery notified Illinois Environmental Protection Agency ("IEPA") that it would be adding bleach to the TWB. The bleach treatment began on November 16, 2004, with the delivery of five truck loads of bleach. An additional three truck loads were delivered on November 22, 2004. The 36,000 gallon addition of bleach effectively reduced the ammonia levels to comply with the daily ammonia limit of 26 ppm. The addition of bleach did not result in any residual chlorine in the effluent.

CITGO seeks to continue operating the Refinery with wastewater discharges having ammonia levels higher than the monthly average concentration specified in its NPDES permit, Permit # IL 0001589. CITGO, therefore, requests a provisional variance under the terms set forth below and provides the following information in accordance with 35 Ill. Admin. Code § 180.202(b):

1. A statement identifying the regulations, Board Order, or permit requirements from which the variance is requested.

CITGO requests a provisional variance from the ammonia monthly average concentration specification for November & December 2004 contained in its NPDES permit (No. IL 0001589) for the Lemont Refinery.

2. A description of the business or activity for which the variance is requested, including pertinent data on location, size, and the population and geographic area affected by the applicant's operations.

The Refinery is located at 135 Street and New Avenue Lemont, Illinois 60439. The Refinery employs approximately 530 people. The Refinery was constructed during the period 1967 through 1970. It became operational in late fall of 1969. Approximately twenty-five different products are produced at the Refinery, including gasolines, turbine fuels, diesel fuels, furnace oils, petroleum coke, and various specialty naphthas which can be manufactured into many intermediate products, such as antifreeze, dacron, detergent, industrial alcohols, plastics, and synthetic rubber. Ninety percent of the Refinery's output goes into making gasolines, diesel fuels, home heating oils and turbine fuels for use in Illinois and throughout the Midwest.

3. The quantity and types of materials used in the process or activity for which the variance is requested, as appropriate.

Physical, biological and chemical methods are used to treat Refinery wastewater. The quantity and types of chemicals used for treatment vary dependant upon influent wastewater characteristics.

4. The quantity, types, and nature of materials or emissions to be discharged, deposited or emitted under the variance, and the identification of the receiving waterway or land, or the closest receiving Class A and Class B land use, as appropriate.

Additional pollutants, beyond the amounts already permitted by the Illinois Environmental Protection Agency, will not be deposited on land or emitted into the air as a result

of granting this petition for provisional variance. The only medium affected by this provisional variance request will be water, and the only measure affected to date by the loss of MEA and untreated sour water is the ammonia monthly average concentration. Given the extensive remedial measures already undertaken, the Refinery does not anticipate daily levels of ammonia such that would continue to impact the monthly average concentration beyond Dec 31, 2004.

The Refinery takes approximately 4 million gallons of water daily from the Canal and discharges approximately 3.8 million gallons to the Canal, with the difference going to cooling tower evaporation and steam losses. The Refinery is located upstream of the Lockport Lock & Dam. Below the dam, the Canal merges with the Des Plaines River, passes through Joliet, and 11 miles downstream of Joliet, passes beneath the I-55 bridge. Until the I-55 bridge, the receiving waters are designated as Secondary Contact waters; below the I-55 bridge the Des Plaines River is designated as General Use water. The General Use waters begin 18.5 miles below CITGO's outfall.

5. The quality and types of materials in drinking water exceeding the allowable content, or other pertinent facts concerning variances from the Board's public water supply regulations.

CITGO is not seeking a variance from the Board's public drinking water supply regulations, only from one provision of its NPDES permit. Granting a provisional variance from the permit condition does not affect the quality of a drinking water supply; therefore, the information sought at 35 Ill. Admin. Code §180.202(b)(5) is not applicable to the provisional variance requested here.

6. An assessment of any adverse environmental impacts which the variance may produce.

After the remedial measures undertaken, the Refinery is discharging approximately 12 mg/l of ammonia nitrogen. There is no measurable adverse environmental impact from these levels.

7. A statement explaining why compliance with the Act, regulations or Board Order imposes arbitrary and unreasonable hardship.

The Refinery has undertaken all reasonable measures to mitigate the upset and to return the treatment plant to compliance.

8. A description of the proposed methods to achieve compliance with the Act, regulations or Board Order, and a timetable for achieving such compliance.

See discussion above. Based on past experience, the Refinery expects to be able to achieve the monthly limit for ammonia by December 31, 2004.

9. A discussion of alternative methods of compliance and of the factors influencing the choice of applying for a provisional variance.

See discussion above.

10. A statement of the period, not to exceed 45 days, for which the variance is requested.

CITGO seeks the variance for a 45-day period commencing on November 17, 2004 until January 1, 2005. CITGO took prompt measures to comply and halted its discharge on November 6, and diligently attempted to achieve compliance. The Agency permit writer was notified concerning the situation on November 15, and the discharge was resumed on the 17th. At that time, CITGO was still hopeful that the monthly average limitation could be attained. Alternatively, we request a variance from the date the provisional variance is issued for 45 days.

- 11. A statement of whether the applicant has been granted any provisional variances within the calendar year, and the terms and duration of such variances.**

None were sought or granted.

- 12. A statement regarding the applicant's current permit status as related to the subject matter of the variance request.**

The Refinery currently operates under NPDES permit No. IL 0001589, issued by IEPA. The NPDES permit became effective September 1, 1994. CITGO filed a timely NPDES renewal application in 1997. The NPDES permit includes outfall at the Refinery at river mile 296.5 on the Canal (Latitude 41°38'58", Longitude 88°03'31").

- 13. Any Board Orders in effect regarding the applicant's activities and any matters currently before the Board in which the applicant is a party.**

There are no outstanding Board Orders involving CITGO. CITGO has pending before the Board its Petition for Variance in connection with discharges of TDS.

Respectfully submitted,

CITGO PETROLEUM CORPORATION

By: C. W. Hammon

Please also provide notice to
Jeffrey C Fort
Letissa Carver Reid
Sonnenschein, Nath and Rosenthal
8000 Sears Tower
233 S Wacker Drive
Chicago, IL 60606

11802289.3

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7003 1680 0000 3653 9058

RECEIVED
DEC 13 2004

OE 146-04

EPA



CITGO Petroleum Corporation

135th Street & New Avenue
Lemont, IL 60439-3659

December 10, 2004

Ms. Barb Conner
Bureau of Water
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Request for Provisional Variance

As discussed in a telephone conversation on December 9, Lemont Refinery requests a provisional variance for Ammonia as N, effective December 8, 2004, with a monthly average effluent limit of 15mg/L.

If there are questions or if additional information is required, please contact Brigitte Postel at (630) 257-4221 or me at (630) 257-4450. Thank you for your assistance.

Sincerely,

C. W. Harmon
Manager, Environmental

BMP/PLM