



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 122006 - 012 Project Number: 2006-10-006

Parent Company: American River Transportation Company

Parent Company Address: PO Box 2889, 4528 S Broadway, St. Louis, MO 63111

Installation Name: ARTCO North Terminal

Installation Address: 3854 S 1st Street, St. Louis, MO 63118

Location Information: St. Louis City

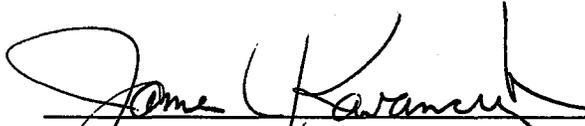
Application for Authority to Construct was made for:

Storage of methanol and installation of a methanol vapor incinerator, manufactured by John Zink, to control emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from the methanol storage tank. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

DEC 15 2006

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located with 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Permit No.	06-08-012
Project No.	2006-10-006

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions: *The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

ARTCO North Terminal St. Louis City

1. ARTCO North Terminal shall control the working loss emissions from the methanol storage tank using the methanol vapor incinerator as specified in the permit application. The incinerator shall be in use at all times whenever the methanol storage tank is being filled. The methanol vapor incinerator shall be operated and maintained in accordance with the manufacturer's specifications so as to achieve volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) destruction efficiency of 98%.
2. ARTCO North Terminal shall maintain an operating and maintenance log for the methanol vapor incinerator which shall include the following:
 - A. Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - B. Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2006-10-006
Installation ID Number: 510-0013
Permit Number:

ARTCO North Terminal
3854 S 1st Street
St. Louis, MO 63118

Complete: 10/02/2006

Reviewed: 11/06/2006

Parent Company:
American River Transportation Company
PO Box 2889
4528 S Broadway
St. Louis, MO 63111

St. Louis City.

REVIEW SUMMARY

- ARTCO North Terminal has applied for authority to store methanol in an existing tank and for the installation of a methanol vapor incinerator, manufactured by John Zink, to control emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from the methanol storage tank.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern from this process is methanol.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment. Specifically, 40 CFR Part 60, Subpart Kb, does not apply because the existing tank was designed to accommodate an alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's existing construction specifications prior to the switch in tank service.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations applies to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment. A new methanol vapor incinerator is being used to control the methanol emissions from the existing tank.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Controlled potential emission of methanol is below de minimis level. However, uncontrolled potential emissions are above de minimis, hence the need for this permit.

- This installation is located in St. Louis City, a nonattainment area for ozone (O₃) and an attainment area for all other criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The principle activity of ARTCO North Terminal is the storage and distribution of materials, including chemicals and edible oils. It receives these materials via river barge and ships them to other facilities via tanker trucks. ARTCO North Terminal is located in the St. Louis City, Missouri.

There are three external floating roof tanks, one internal floating roof tank and 2 fixed roof tanks at this installation ranging in capacity from 748,000 to 2,317,000 gallons. These tanks were constructed in 1959. There is also a 4.2 MMBtu per hour boiler installed in 1956 and a tank trucker load out rack installed in 1998.

Except for the tanker truck load out rack, all the other emission units at this installation are considered “*grandfathered*”, meaning that they were built prior to the establishment of the State construction or operating permit program (i.e. before May 13, 1982).

No permits have been issued to ARTCO North Terminal from the Air Pollution Control Program.

PROJECT DESCRIPTION

ARTCO North Terminal has applied for authority to store methanol in an existing tank and to install a methanol vapor incinerator, manufactured by John Zink, to control emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) from the methanol storage tank.

Liquid methanol is offloaded from barges to an existing 842,436 gallon fixed-roof storage tank, then routed to tanker trucks for offsite distribution. Displaced tanker truck headspace vapors are routed back to the methanol storage tank. Displaced storage tank headspace vapors are enriched with natural gas and routed to a vapor incinerator for methanol vapor destruction. Breathing losses from the methanol storage tank are emitted to atmosphere.

The natural gas incinerator pilot has a maximum hourly design rate (MHDR) of 0.05

MMBtu/hr. The natural gas used to enrich the tank headspace vapors before incineration adds another 3.148 MMBtu/hr of heat.

EMISSIONS/CONTROLS EVALUATION

Environmental Protection Agency (EPA) TANKS program version 4.09d was used to estimate the methanol emissions from the fixed-roof storage tanks using site specific data for the St. Louis area. Other emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4, Natural Gas Combustion (7/98). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Table 1 below provides an emissions summary for this project.

The maximum methanol throughput (105,120,000 gallons) was based on the maximum practicable load out rate using the equation and parameters below.

$$\text{Throughput} \left(\frac{\text{gal}}{\text{yr}} \right) = \frac{\text{Average Truck Capacity}(\text{gal}) \times 60 \left(\frac{\text{min}}{\text{hr}} \right) \times 8760 \left(\frac{\text{hr}}{\text{yr}} \right)}{\left(\left(\frac{\text{Average Truck Capacity}(\text{gal})}{\text{Max. Truck Loading Rate} \left(\frac{\text{gal}}{\text{min}} \right)} \right) + \text{Time to prepare truck for loading}(\text{min}) \right)}$$

Average truck capacity	=	6000 gallons
Transfer preparation time	=	5 min
Transfer shutdown time	=	5 min
Maximum transfer rate	=	300 gal/min

ARTCO North Terminal has no existing potential emissions under construction permits because the emission units at this installation are “grandfathered”. Existing actual emissions for this installation are from the installations’ 2005 Emissions Inventory Questionnaire (EIQ) submittal.

The working losses from the methanol storage tank are routed to the methanol vapor incinerator whereas the breathing losses are emitted directly to the atmosphere. The methanol vapor incinerator has a destruction efficiency of 98%.

Uncontrolled potential emissions of methanol for this project are 24.60 tons per year. This is above the de minimis level of 10 tons per year for an individual HAP.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2005 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	N/D	0.00	0.10	N/A
SO _x	40.0	N/D	0.20	0.01	N/A
NO _x	40.0	N/D	0.10	1.37	N/A
VOC	40.0	N/D	0.98	3.05	N/A
CO	100.0	N/D	0.03	1.15	N/A
HAPs	10.0/25.0	N/D	0.00	3.00	N/A
Methanol	10.00	N/D	0.00	3.00	N/A

*N/A = Not Applicable; N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC and HAP are below de minimis levels.

APPLICABLE REQUIREMENTS

ARTCO North Terminal shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Control of Odors in the Ambient Air*, 10 CSR 10-5.160

SPECIFIC REQUIREMENTS

- *Maximum Allowable Emission of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-5.030
- *Control of Emissions From Volatile Organic Liquid Storage*, 10 CSR 10-5.500

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Maurice Chemweno
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 18, 2006, received October 2, 2006, designating American River Transportation Company as the owner and operator of the installation.
- U.S. EPA TANKS program version 4.09d.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition. Section 1.4, Natural Gas Combustion (7/98).

Mr. Justin Baker
Superintendent of Terminals
American River Transportation Co. (ARTCO)
4528 S Broadway
St. Louis, MO 63111

RE: New Source Review Permit - Project Number: 2006-10-006

Dear Mr. Baker:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:mcl

Enclosures

c: St. Louis City
PAMS File: 2006-10-006

Permit Number: