



Department of the Environment

ETHANOL PRODUCTION FACILITY PERMITTING SUMMARY



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MDE Ethanol Production Facility Permitting Summary Sheet

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MDE Ethanol Production Facility Permitting Summary

INTRODUCTION

To assist companies proposing to develop a facility that produces ethanol as a fuel, the Maryland Department of the Environment (MDE) presents the following list of potential environmental requirements. This list is organized according to the departmental administration overseeing and monitoring these requirements:

- Air and Radiation Management Administration (ARMA)
- Waste Management Administration (WAS)
- Water Management Administration (WMA)

Additional information is available in the *2008 MDE Business Guide to Environmental Permits and Approvals* on MDE's website at www.mde.state.md.us/assets/document/2008_MDE_Permitguide.pdf. Obtain a printed copy of the Permit Guide by contacting Permitting and Customer Services at 410-537-3772. We strongly encourage you to obtain a copy of the permit guide for information on the application process and the fees associated with each type of permit. Permit applications can be obtained from our website for printing and submission for most of our permits.

Multi-Media Meetings: Air-Waste-Water

MDE offers the opportunity to meet with the appropriate permitting groups from the three media administrations, ARMA WAS, and WMA to discuss the environmental requirements for ethanol production facilities. These "Multi-Media Meetings" are a service provided by the Department and can be arranged by contacting Stanley Tsai of Permitting and Customer Services at 410-537-4478.

Depending on the size, type, and location of a biodiesel plant, the following permits/approvals may be needed.

AIR AND RADIATION MANAGEMENT ADMINISTRATION (ARMA) PERMITS

AIR QUALITY ISSUES IN MARYLAND

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead.

The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation and are listed in the following table. These standards are not limitations on emission.

Please note the turnaround times for each permit and be sure to include them in your facility development schedule. Be aware that the turnaround times are highly contingent upon your submitting a complete and through application.

2008 Guide to Environmental Permits & Approvals on the Department's website at www.mde.state.md.us/assets/document/2008_MDE_Permitguide.pdf

National Ambient Air Quality Standards: The levels that the EPA judges necessary to protect the public health for commonly occurring air pollutants that pose public health risks.

NATIONAL AMBIENT AIR QUALITY STANDARDS:	
Pollutant	Standard Value
Carbon Monoxide (CO) 8-hour Average 1-hour Average	9 ppm 10 mg/m ³ 35 ppm 40 mg/m ³
Lead (Pb) Quarterly average	1.5 ug/m ³
Nitrogen Dioxide (NO₂) Annual Arithmetic Mean	0.053 ppm 100 ug/m ³
Ozone (O₃) 1-hour Average 8-hour Average	0.12 ppm 235 ug/m ³ 0.08 ppm 157 ug/m ³
Particulate Matter (PM-10) 24-hour Average	150ug/m ³
Particulate Matter (PM-2.5) Annual Arithmetic Mean 24-hour Average	15 ug/m ³ 65 ug/m ³
Sulfur Dioxide (SO₂) Annual Arithmetic Mean 24-hour Average	0.03 ppm 80 ug/m ³ 0.14 ppm 365 ug/m ³

The MDE operates an air monitoring network in accordance with EPA guidelines to measure the concentrations of the criteria pollutants in the ambient air. These measurements have been used to project statewide ambient air quality and indicated that Maryland meets the ambient air quality standards for sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, and lead.

However ground level ozone continues to present a problem for Central Maryland, which includes Baltimore City and Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, and Prince George's counties. The central Maryland area is classified as a nonattainment area for ozone. The primary contributors to the formation of ozone are emissions of oxides of nitrogen (NO_x), primarily from combustion equipment, and missions of Volatile Organic Compounds (VOC) such as paint solvents and gasoline vapors. New stationary sources that emit VOC and/or NO_x in central Maryland may be subject to more stringent emission limits and control requirements that are not applicable in other parts of Maryland or other parts of the country.



AIR QUALITY PERMIT TO CONSTRUCT (Section 1.02 of Permit Guide)

This permit is required for all air pollution emitting equipment and processes, such as fuel burning equipment or chemical processing equipment, associated with commercial scale ethanol production facilities. Permit to Construct applications for commercial scale ethanol production facilities are subject to expanded public review.

The standard permit turnaround time is six months from date of receipt of a complete application or applications subject to public review that generate little to no public interest and eleven months from the date of receipt of a complete application for applications subject to expanded public review that generate extensive public interest. This is a on-time permit that is required prior to construction and/or installation of the ethanol production facility.

Evidence of local zoning approval for an ethanol production facility in the form of a letter from the local zoning authority must be submitted with the Permit to Construct Application. A Permit to Construct Application for an ethanol production facility cannot be accepted without evidence of zoning approval.

You may need to obtain a new Permit to Construct if you make changes to the equipment, process, material or emissions, or fail to initiate construction within eighteen months of the permit issuance date. Contact Justin Hsu of the Air Quality Permits Program at 410-537-3225.

NEW SOURCE REVIEW APPROVAL (NSR) (Section 1.03 of Permit Guide)

A New Source Review (NSR) approval is required for any ethanol production facility that will emit or have the potential to emit:

- (a) 25 tons or more per year of VOC or NO_x in Baltimore City, or Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, or Prince George's counties
- (b) 50 tons or more per year of VOC in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Talbot, Washington, Wicomico, or Worcester counties; or
- (c) 100 tons or more per year of NO_x in Allegany, Caroline, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Washington, Wicomico, or Worcester counties.

This is a one-time approval and is typically issued in conjunction with the Air Quality Permit to Construct required for the facility (see 1.02 above) or within ten months from the date of receipt of a complete application. NSR approvals also require EPA review and approval. This is coordinated through ARMA and is included in the turnaround time. Contact Justin Hsu of the Air Quality Permits Program at 410-537-3225.

This is a one-time permit required prior to construction and/or installation of the equipment.

Air Quality Permits to Construct - For information, contact Justin Hsu at 410-537-3225.

A Permit to Construct application for an ethanol production facility cannot be accepted without evidence of zoning approval.

New Source Review Approval - For information, contact Justin Hsu at 410-537-3225.



PREVENTION OF SIGNIFICANT DETERIORATION APPROVAL (PSD) (Section 1.04 of Permit Guide)

A PSD approval is required for any new ethanol production facility that will emit or will have the potential to emit one hundred tons per year or more of any pollutant regulated under the Federal Clean Air Act. For an ethanol production facility, the PSD pollutants of concern include particulate matter (total, PM-10 and PM 2.5), sulfur oxides (SOx) and carbon monoxide (CO). If a new ethanol production facility will emit or have the potential to emit one hundred tons per year or more of these pollutants, a PSD approval is required. This is a one-time approval and is typically issued in conjunction with the Air Quality Permit to Construct required for the facility (see 1.02 above) or with fourteen months from the date of receipt of a complete application. PSD approvals also require EPA review and approval. This is coordinated through ARMA and is included in the turnaround time. Contact Justin Hsu of the Air Quality Permits Program at 410-537-3225 .

AIR QUALITY STATE PERMIT TO OPERATE (Section 1.05 of Permit Guide)

A State Permit to Operate is required prior to operation of a new ethanol production facility. If a source is subject to state permit to operate requirements, they must first obtain a Permit to Construct and construct the source. ARMA then conducts a post-construction site visit to verify that all construction requirements were met, and then issues the permit to operate. In some cases, ARMA will include a temporary Permit to Operate in the Permit to Construct, but only for sources that can construct quickly (i.e., package boiler).

The standard permit turnaround time is ninety days from the date of receipt of a complete application. The State Permit to Operate is issued for a maximum term of five years and may be renewed. A State Permit to Operate source is required to submit annual certifications of emissions and is required to pay an annual fee based on those emissions. Contact Justin Hsu of the Air Quality Permits Program at 410-537-3225.

PART 70 (TITLE V) OPERATING PERMIT (Section 1.06 of Permit Guide)

A Part 70 Operating Permit is required for any new major source of emissions. A new ethanol production facility that is subject to either a major NSR approval (see 1.03 above) or a PSD approval (see 1.04 above), or both, will be required to obtain a Part 70 Operating Permit. Submittal of an application for a Part 70 Operating Permit is due within twelve months after the new major source commences operations. A State Permit to Operate (see 1.05 above) will be issued in the interim to a major ethanol production facility until a Part 70 Operating Permit is issued to replace the State Permit to Operate. The Part 70 Operating Permit is issued for a maximum term of five years and may be renewed. Part 70 (Title V) Operating Permits also require EPA review and

Prevention of Significant Deterioration (PSD) Approval - For information, contact Justin Hsu at 410-537-3225.

Air Quality State Permit to Operate - For information, contact Justin Hsu at 410-537-3225.

Part 70 (Title V) Operating Permit - For information, contact Justin Hsu at 410-537-3225.



approval. This is coordinated ARMA and is included in the turnaround time. Part 70 Operating Permit sources are required to submit annual certification of emissions and are required to pay an annual fee based on those emissions. Contact Justin Hsu of the Air Quality Permits Program at 410-537-3225.

WASTE MANAGEMENT ADMINISTRATION (WAS) PERMITS

OIL OPERATIONS PERMIT (Section 2.06 of Permit Guide)

Since ethanol produced for fuel must be denatured with a non-edible petroleum product such as gasoline, most ethanol plants store quantities of gasoline. Any facility which stores more than a total capacity of 10,000 gallons of petroleum product or stores more than 10,000-gallons of denatured ethanol would fall under this permit. This permit is also for any facility which stores 1,000 gallons or more of used oil, transports petroleum in or out of Maryland or who operates a petroleum transfer facility. If the above quantities are not met, the facility does not have to apply for the permit but must meet the reporting, construction, and attendance requirements in COMAR 26.10.01. The standard turnaround time for this permit is 90 days. The term of this permit is five years. Contact the Oil Control Program's Permits Section at 410-537-3461.

OIL CONTROL PROGRAM GENERAL WASTEWATER DISCHARGE PERMITS (Section 2.09 of Permit Guide)

If the facility has loading rack areas with total aboveground ethanol storage capacity of less than five million gallons and may discharge stormwater from the loading rack areas or hydrostatic test water to surface waters, this general permit is required. Since the application only involves submission of a Notice of Intent to comply with the already issued general permit, the standard turnaround time is only 30 days. The term of the permit is up to five years, depending on when the general permit was issued and how much time is remaining on its five-year term. Facilities with greater than five million gallons total storage capacity and receive oil by pipeline or marine transfer must apply for a Surface Water or Groundwater Discharge Permit for Oil Terminals. For most ethanol plants, the individual permit would not apply. Descriptions of the individual permits can be found in the permits guide or on the MDE website permit guide under sections 2.10 or 2.11, respectively. Contact the Oil Control Program's Permit Section at 410-537-3461.

Notification for Underground Storage Tanks (Section 2.14 of Permit Guide)

Many ethanol plants store the gasoline used to denature the ethanol in underground storage tanks. MDE must be notified of the existence of any tank that is used to store or has ever stored regulated hazardous substances, including all oil products. This also includes gasoline tanks AND the tanks holding the denatured ethanol. The standard

Oil Operations Permit

For information, contact the Oil Control Program at 410-537-3461.

Oil Control Program General Wastewater

Discharge Permit- For information, contact the Oil Control Program at 410-537-3461.

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Notification for Under-ground Storage Tanks-

For information, contact Shirley Fairbank at 410-537-2461 for changes to existing underground storage sites or contact Sheila Dean at 410-537-4144 for new underground storage tank sites.

The Voluntary Cleanup Program is available for guidance on how to reduce the potential liability of the new owners and to encourage the location of industries to industrial areas.

Voluntary Cleanup Program - For information, contact Luke Wisniewski at 410-537-3447.

To release wastewater of any quantity into waters of Maryland, it is necessary to obtain a discharge permit.

General Discharge Permits For information, contact Patsy Allen at 410-537-3634 or Ed Gertler at 410-537-3323

turnaround time for this notification is 30 days. It is good until something changes, i.e., the tank is installed, becomes temporarily out of use or closed, the substance stored in any tank changes, the owner or operator or person in charge changes, etc. Contact Sheila Dean of the Oil Control Program at 410-537-4144 for new underground storage tank sites and Shirley Fairbank of the Oil Control Program at 410-537-3461 for changes to existing underground storage tank sites.

VOLUNTARY CLEANUP PROGRAM (Section 2.21 of Permit Guide)

Ethanol plants are sometimes located on property previously used by industry. To reduce the potential liability of the new owners and to encourage the location of industries to industrial areas, the Voluntary Cleanup Program (VCP) is available. Once historic information on the site is submitted to the Department, the applicant's status as a responsible person or inculpable person is determined. The standard turnaround time for this service is forty-five days to determine if the application is accepted and seventy-five days to review the response action plan. VCP is a one-time approval. Contact Luke Wisniewski of the voluntary Cleanup/Brownfields Division at 410-537-3447. For further information, visit our website at www.mde.state.md.us/Programs/LandPrograms/ERRP_Brownfields/index.asp.

WATER MANAGEMENT ADMINISTRATION (WMA) PERMITS

DISCHARGE PERMITS

Releasing wastewater of any quantity into Maryland waters (surface or groundwater) requires a discharge permit. Waters of Maryland include streams, lakes, the Chesapeake Bay and its tidal network, coastal bays, the ocean, wetlands, and 100-year floodplains. Discharges to storm drains or other man-made conveyances that lead directly to such waters also require a permit.

The purpose of a discharge permit is to define how clean your wastewater must be or procedures you must follow to minimize pollution and protect the quality of state waters. The permit will therefore usually establish limits on specific pollutants and require that you monitor the discharge with specific testing to verify compliance. The permit may also describe management practices to prevent pollution.

INDIVIDUAL VERSUS GENERAL DISCHARGE PERMITS

An individual permit is custom crafted to the specific needs of the facility. The permitting process includes an opportunity for public participation (the applicant may also participate) in the outcome which lengthens the permitting process. Applicants are advised to refrain from commencing any construction before a permit is issued. To obtain an individual permit, the applicant must complete a detailed form that describes their activity and the physical/chemical make-up of the wastewater they propose to discharge.



A general permit is a generic document crafted to be appropriate for a group of similar dischargers. It undergoes public participation during its issuance. Therefore applicants desiring to be covered under a general permit can receive coverage much quicker since the public participation has already occurred. An example of a general permit is for discharges from swimming pools. The advantage of a general permit is that it is available much sooner than an individual permit (mandated turnaround times vary by permit, but do not exceed 60 days). The disadvantage is the operator must accept the terms of the permit as written. To become a permittee, applicants complete a brief form called a Notice of Intent, which is a statement by the operator agreeing to abide by the terms of the permit.

SURFACE WATER DISCHARGE PERMITS INDIVIDUAL AND GENERAL (INDUSTRIAL) (Section 3.01 and 3.02 of the Permit Guide)

Although generally all ethanol production process water (this includes any related wastewater sources like cooling water or boiler blowdown) produced during operation is recycled, there is a potential need to dispose of wastewater. If this is discharged to surface waters, an individual surface water discharge permit is necessary, regardless of the volume. If you do not discharge process water, you can obtain general permit coverage for storm water associated with your operation. Another general permit is available for storm water associated with construction activity (of one acre or more) and must be obtained prior to commencement of construction regardless of what the plant will discharge once it begins operating. Finally, if you do not discharge process water but anticipate the need to hydrostatically test tanks or pipes or periodically test fire control systems, there is a general permit specific to those discharges. Standard turnaround times for individual permits vary from nine months for new minor facilities to twelve months for new major facilities. The term of an individual permit is five years. Contact Ed Gertler of Wastewater Permits Program at 410-537-3323 for information on individual permits. For information on general permits (other than construction storm water), you may contact either Patsy Allen at 410-537-3634 or Ed Gertler. If you discharge the wastewater into the sanitary sewer, then you must contact the local government and obtain a pretreatment permit, at their discretion.

GROUNDWATER DISCHARGE PERMITS (Section 3.05 of the Permit Guide)

Similar to the surface water discharge permit, the groundwater discharge permit is necessary when process wastewater is generated that will be discharged solely into the groundwater (for example, via spray irrigation, other land treatment applications or into the subsurface by a drainfield or seepage pit). This requires an individual permit. Turnaround times for new minor and major facilities are the same as with surface water individual permits. Turnaround times for renewals of minor and major facility groundwater discharge permits are fourteen and sixteen months, respectively. Contact Dr. Ching-Tzone Tien of the Groundwater Permits Division at 410-537-3662.

Individual Discharge Permits - For information, contact Ed Gertler at 410-537-3323.

General Discharge Permits - For information, contact Patsy Allen at 410-537-3634 or Ed Gertler at 410-537-3323.

Pretreatment Permit. If you discharge the wastewater into the sanitary sewer, you must contact the local government and obtain a Pretreatment Permit, at their discretion.

Groundwater Discharge Permits - For information, contact Dr. Ching-Tzone Tien at 410-537-3662.



TIDAL WETLAND LICENSES AND PERMITS (Section 3.18 of Permit Guide)

Because of transportation issues, the location of an ethanol facility may, in part, encompass a tidal wetland. Tidal wetlands fringe many of the shorelines of the Chesapeake Bay and its tidal tributaries and include marshes, shrub swamps, forested wetlands and submerged aquatic vegetation. The tidal wetlands program regulates the filling of open water and vegetated wetlands; the construction of piers, bulkheads or revetments; dredging; and marsh establishment. If the construction of the ethanol facility or its appurtenances infringes on a tidal wetland, it is necessary to complete a "Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland" application. The standard turnaround time for minor projects is five months and eight months for a major project. The term of the permit is a maximum of three years. Contact Richard Ayella of the Tidal Wetlands Division at 410-537-3837.

NONTIDAL WETLANDS (NONTIDAL WETLANDS AND WATERWAYS PERMITS (Section 3.19 of Permit Guide)

Similar to tidal wetlands, nontidal wetlands may be disturbed during the construction of an ethanol facility. Nontidal wetlands are commonly known as marshes, swamps, bogs, wet meadows and bottomland forests. They are inland, freshwater areas usually covered or saturated with water for long periods during the growing season. The Nontidal Wetlands and Waterways Division manages activities in nontidal wetlands including grading or filling; excavating or dredging; changing existing drainage patterns; disturbing the water level or water table; and destroying or removing vegetation. Waterways, including the 100-year floodplain may also be disturbed during the construction of a ethanol facility. Authorization from the Nontidal Wetlands and Waterways Division is required to conduct any activity that changes the course, current or cross-section of a nontidal stream or body of water, including the 100-year floodplain. Waterway construction activities are evaluated to ensure that they do not create flooding on upstream or downstream properties and to ensure that aquatic resources are protected from degradation. A "Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland" application must be filled out. The standard turnaround time for minor projects is 10 months and for major projects is 12 months. The term of the permit is for a maximum of five years and extended for an additional five years. Construction must be initiated within two years of the effective date of the permit. Contact Amanda Sigillito of the Nontidal Wetlands and Waterways Division at 410-537-3766.

GENERAL PERMIT FOR CONSTRUCTION ACTIVITY (See Section 3.23 of Permit Guide)

If the construction of the ethanol facility disturbs one acre or more, a Notice of Intent (NOI) must be filled out so that the project can be included under this general permit. The standard turnaround time for this permit is two days and its term is a maximum of five years. If the project takes longer, the applicant can complete a Notice of Continuation of Coverage form. Contact Karen Smith of the Compliance Program at 410-537-3510.

Tidal Wetland Licenses and Permits - For information, contact Richard Ayella at 410-537-3837.

For both Tidal and Nontidal: "Joint Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland" application must be filled out.

For Nontidal Wetland Licenses and Permits - For information, contact Amanda Sigillito at 410-537-3766.

General Permit for Construction Activity - For information, contact Karen Smith at 410-537-3510.



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