On-Farm Biodiesel Production Regulatory Guide

Shannon L. Ferrell
Assistant Professor, Agricultural Law

Daniel Skipper
Area Agricultural Economics Specialist

Blake Jackson
Extension Research Assistant

Oklahoma Cooperative Extension Fact Sheets are also available on our website at:
http://osufacts.okstate.edu

Note: This publication is intended to provide general information about legal issues. It should not be cited or relied upon as legal authority. State laws vary and no attempt is made to discuss laws of states other than Oklahoma. For advice about how these issues might apply to your individual situation, please consult an attorney.

Introduction

More and more agricultural producers are not only being asked to produce the world's food and fiber, but also to produce the world's fuel. Recent years have seen tremendous increases in the amount of biofuels, such as ethanol and biodiesel, that are being produced from agricultural sources such as corn, sorghum and oilseed crops. Some agricultural producers are adapting the technologies used on an industrial scale to produce the fuels to the farm level and for their own use. While on-farm production of biofuels can have significant advantages for agricultural producers, the production of fuels also triggers many regulatory requirements. Many of these regulations do not carry exemptions for small-scale production of fuels, and, as a result, those who produce fuel simply for their own use may often face the same regulations as a large, commercial refinery.

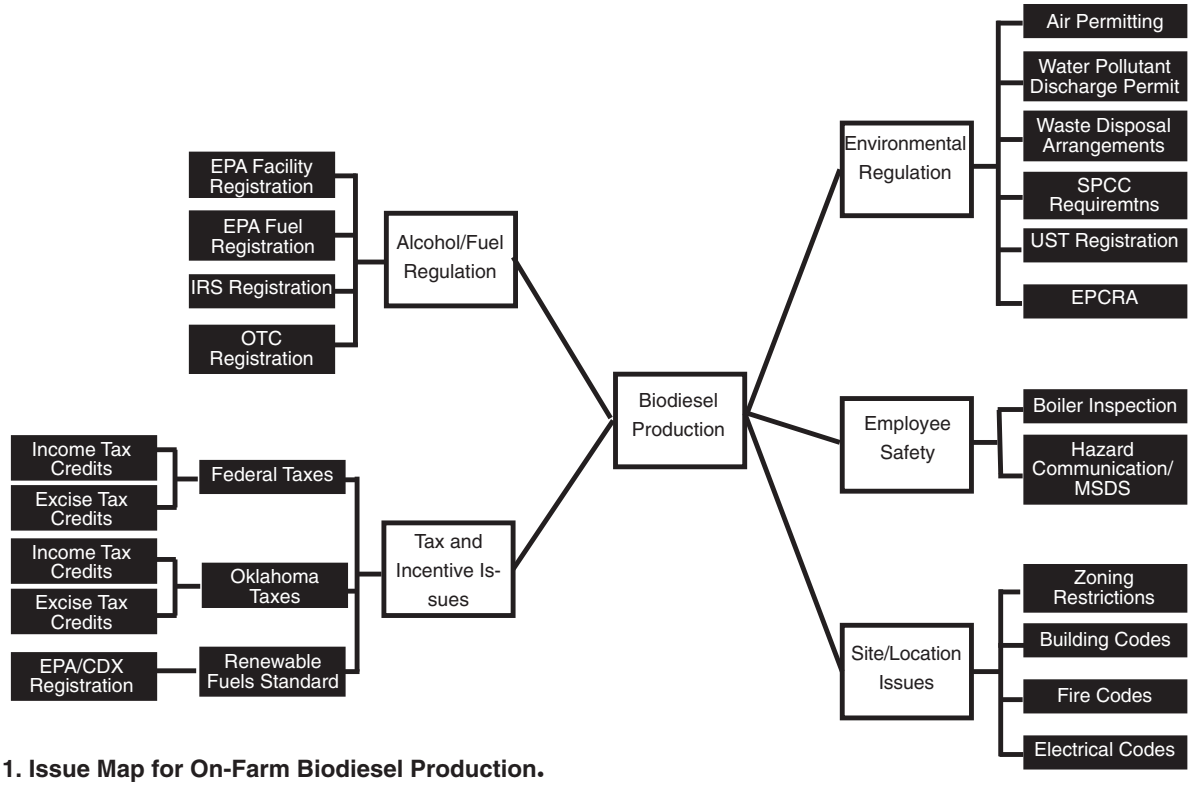

Figure 1. Issue Map for On-Farm Biodiesel Production.

Assumptions Made in this Guide

This guide will present a number of the regulations that may apply to the on-farm production of biodiesel, and is targeted to readers who are producing fuel primarily for their own use and not for sale to others. It is assumed that the reader is producing less than 10,000 gallons of biodiesel per year.[1]

It is also assumed that all fuel produced is used for "off-road" purposes and is not used in any vehicle for highway travel. The use of any biodiesel produced in any vehicle for highway travel would trigger the application of a host of additional fuel regulations at both the state and federal level. Please also note that this guide will focus solely on the regulations that govern the *production* of fuel. It will not address issues such as liability for injuries on the premises where the fuel is produced or damage to vehicles in which the fuel is used, nor will it discuss legal structures for the entity producing the fuels (such as organizing a limited liability company or cooperative for the fuel production).

Finally, it is important for the reader to consult with the agencies listed, as well as any county or municipal governments, to be sure all requirements have been satisfied. Always consult with a licensed attorney with experience in your type of issue should legal concerns arise.

Biodiesel Production Facility Registration

The production of biodiesel triggers the jurisdiction of a number of agencies at both the federal and state level. At the federal level, the Environmental Protection Agency (EPA) and the Internal Revenue Service (IRS) may require the registration of a biodiesel production facility. At the state level, the Oklahoma Tax Commission (OTC) also requires facility registration. Each of these registrations will be addressed in turn.

EPA Registration

EPA regulations require the registration of "refineries" that produce gasoline or diesel fuels.[2] For the purposes of EPA regulations, biodiesel is defined as diesel.[3] Since biodiesel is required to meet many of the same regulatory requirements as petroleum-based diesel, and since this guide assumes that the biodiesel produced will be used in tractors and other

Figure 2: On-farm biodiesel filtration system.

off-road equipment, an on-farm biodiesel facility will likely be required to register with EPA.[4]

Registering a diesel refinery requires filing EPA Forms 3520-20A (Fuels Program Company/Entity Registration) and 3520-20B1 (Diesel Programs Facility Registration), available at http://www.epa.gov/oms/regs/fuels/rfgforms.htm. These forms require general information about the location of the facility, contact persons, recordkeeping for the facility and a certification that the information submitted is correct.

In addition to registering the facility producing biodiesel, the producer must also determine whether it must register the fuel it produces. Assuming that none of the fuel produced by a biodiesel facility is used for an on-road vehicle, the facility is not required to register its fuel.[5] If, on the other hand, any of the biodiesel fuel was used for on-road applications, fuel registration would be required by using EPA Form 3520-12,

[1] Production of 10,000 gallons or more of biodiesel per year triggers a number of mandatory fuel reporting requirements, such as registration under the Environmental Protection Agency's Renewable Fuels Standard Program. See 40 C.F.R. § 80.1126.

[2] "Refinery" is defined by the EPA diesel fuel regulations at 40 C.F.R. § 80.2(h) as "any facility, including but not limited to, a plant, tanker truck, or vessel where gasoline or diesel fuel is produced, including any facility at which blendstocks are combined to produce gasoline or diesel fuel, or at which blendstock is added to gasoline or diesel fuel."

[3] 40 C.F.R. § 80.2(x) defines diesel fuel as "any fuel sold in any State or Territory of the United States and suitable for use in diesel engines, and that is (1) [a] distillate fuel commonly or commercially known or sold as No. 1 diesel fuel or No. 2 diesel fuel; (2) [a] non-distillate fuel other than residual fuel with comparable physical and chemical properties (e.g., biodiesel fuel); or (3) [a] mixture of fuels meeting the criteria of paragraphs (1) and (2) of this definition." (Emphasis added).

[4] Use of biodiesel fuel for off-road equipment would likely trigger the definition of that fuel as NRLM diesel. NRLM stands for "NonRoad, Locomotive, or Marine" diesel, and is defined as "any diesel fuel or other distillate fuel that is used, inteded for use, or made available for use, as a fuel in any nonroad diesel engines, including locomotive and marine diesel engines." 40 C.F.R. § § 80.2(kkk) and 1068.30. 40 CFR § 80.597 requires registration for "refiners having any refinery that is subject to a sulfur standard under § 80.520(a)" and "refiners and importers that intend to produce or supply NRLM diesel fuel" to register their refineries with EPA. Thus, use of the fuel in an NRLM application would trigger the sulfur standard, and thus the registration requirement.

[5] EPA guidance document "Guidance for Biodiesel Producers and Biodiesel Blenders/Users," p. 2. 40 CFR Part 79 requires the registration of fuels with EPA and the submission of data regarding their emissions (and the health impacts thereof). Specifically, 40 C.F.R. § 79.4(a) states "No manufacturer of any fuel designated under this part shall, after the date prescribed for such fuel in this part, sell, offer for sale, or introduce into commerce such fuel unless the Administrator has registered such fuel." A "fuel manufacturer" is defined at 40 C.F.R. 79.2(d) as "any person who, for sale or introduction into commerce, produces, manufactures, or imports a fuel or causes or directs the alteration of the chemical composition of a bulk fuel, or the mixture of chemical compounds in a bulk fuel …" 40 C.F.R. § 79.33 states that "the following fuels commonly or commercially known or sold as motor vehicle diesel fuel are herby individually designated: (1) Motor vehicle diesel fuel, grade 1–D; (2) Motor vehicle diesel fuel, grade 2–D" (emphasis added). Importantly, "motor vehicle" is defined by the Clean Air Act at 42 U.S.C. § 7550(2) to mean "any self-propelled vehicle designed for transporting persons or property on a street or highway." As a result, EPA has interpreted the regulations and Clean Air Act definitions to mean that diesel fuels that are used only for nonroad applications are not required to register under the act.

which requires information regarding the composition of the fuel and its physical characteristics, additives to be used in the fuel. This form and more information on the registration process can be found at http://www.epa.gov/oms/regs/fuels/ffarsfrms.htm. Additional information about the EPA registration processes relevant to biodiesel producers can be found in EPA's "Guidance for Biodiesel Producers and Biodiesel Blenders/Users," available at http://www.epa.gov/otaq/renewablefuels/420b07019.pdf.

IRS Registration

Regardless of whether the biodiesel produced by a facility is used on-road or off-road, or even as heating fuel or fuel for the generation of electricity, the biodiesel facility is required to register with IRS for the purpose of fuel excise taxes.[6] To register, use IRS form 637, "Application for Registration (For Certain Excise Tax Activities)," available at http://www.irs.gov/pub/irs-pdf/f637.pdf. For additional information about excise tax issues, consult IRS Publication 510, "Excise Taxes," available at http://www.irs.gov/pub/irs-pdf/p510.pdf.

OTC Registration

The statutes governing Oklahoma's excise taxes for motor vehicle fuels defines "diesel" to include "biodiesel" and does not distinguish between on-road and off-road uses.[7] Given this, a biodiesel producer may need to register as a "supplier"[8] of biodiesel fuel pursuant to OTC regulations for entities that may have to collect excise taxes.[9] There are, however, several potential exemptions from excise taxes including exemptions for fuel used for farm tractors or stationary engines used exclusively for agricultural purposes,[10] and biodiesel "produced by an individual with crops grown on property owned by the same individual and used in a vehicle owned by the same individual on the public roads and highways of this state."[11] For help in determining whether a supplier registration is needed for your operation, contact the OTC at 405-522-5658 or via email at otcmaser@tax.ok.gov.

Tax and Incentive Issues

Important note: While many of the regulations affecting biodiesel production are complex, those governing biodiesel taxation and tax credits are even more so. Consult with a qualified tax expert for assistance in determining your tax liability and tax credit eligibility.

While there are several income tax credits available for biofuels production, most of them are conditioned on the sale of the biofuels to another party. To take full advantage of these credits for fuels that are used on the producer's own operation, the producer may need to restructure their operation and place ethanol production into a separate legal entity, such as an LLC or corporation, that can then sell the fuel to the farming operation. As always, consult the appropriate tax and legal experts for more information.

At the federal level, three important incentive programs are targeted at biofuels production: income tax credits, excise tax credits and programs under the Federal Renewable Fuels Standard. Each program takes a slightly different approach to encouraging biofuels development.

Income Tax Issues

Important note: The income tax credits created by 26 U.S.C. § 40A expired as of December 31, 2009. There are currently a number of legislative proposals that would re-enact these credits and potentially make them retroactive back to December 31, 2009. Nevertheless, as this guide goes to press, these credits are currently expired. Biodiesel producers should continue to monitor for further legislative developments. The National Biodiesel Board posts updates on such legislative developments at http://www.biodiesel.org/news/taxcredit/default.shtm.

The structure of the biodiesel income tax credit basically parallels that of the ethanol credit (albeit with more generous amounts) and provides a "biodiesel fuels credit" that consists of a "biodiesel mixture credit," a "biodiesel credit," and a "small agri-biodiesel producer credit."[12] The biodiesel mixture credit provides a credit of $1.00 per gallon for each gallon of biodiesel used by the facility in producing a "qualified biodiesel mixture" (a mixture of biodiesel and diesel sold by the facility for use as a fuel). The biodiesel credit equals $1.00 per gallon of biodiesel (if the biodiesel is not mixed with petroleum-based diesel) that is sold by the facility "at retail to a person [using the alcohol as fuel] and placed in the fuel tank of such person's vehicle." Finally, the small agri-biodiesel producer credit provides $0.10 per gallon of biodiesel sold to another party and is limited to the first 15 million gallons of production per year from a facility with a capacity of no more than 60 million

[6] 26 U.S.C. § 4101

[7] 68 Okla. Stat. § 500.3(3), defining "biodiesel" as "a fuel comprised of mono-alkyl esters of long chain fatty acids generally derived from vegetable oils or animal fats, commonly known as 'B100', that is commonly and commercially known or sold as a fuel that is suitable for use in a highway vehicle. The fuel meets this requirement if, without further processing or blending, the fuel is a fluid and has practical and commercial fitness for use in the propulsion of a highway vehicle." "Diesel," in turn, is defined as "any liquid, including but not limited to, biodiesel, biodiesel blend or other diesel blended fuel, that is commonly or commercially known or sold as a fuel that is suitable for use in a diesel-powered highway vehicle. A liquid meets this requirement if, without further processing or blending, the liquid has practical and commercial fitness for use in the propulsion engine of a diesel-powered highway vehicle." Note that if the fuel is fit for use in a highway vehicle, it satisfies the definition.

[8] See 68 Okla. Stat. § 500.3(56), defining "supplier."

[9] Okla. Admin. Code § 710:55-4-100.

[10] 68 Okla. Stat. § 500.10(8).

[11] 68 Okla. Stat. § 500.10(18).

[12] 26 U.S.C. § 40A.

gallons from the biodiesel facility. The difference between this credit and its ethanol counterpart is the term "agri-biodiesel." "Agri-biodiesel" means "biodiesel derived solely from virgin oils, including esters derived from virgin vegetable oils from corn, soybeans, sunflower seeds, cottonseeds, canola, crambe, rapeseeds, safflowers, flaxseeds, rice bran, mustard seeds and camelina and from animal fats."[13]

As emphasized above, many of these credits are conditioned on the sale of the fuel to another party. To take full advantage of these credits for fuels that are used on the producer's own operation, the producer may need to restructure their operation and place biodiesel production into a separate legal entity, such as an LLC or corporation, that can then sell the fuel to the farming operation. As always, consult the appropriate tax and legal experts for more information.

Excise Tax Issues

Excise taxes are typically imposed on gasoline and diesel fuels either when the fuels leave the refinery or terminal, or upon their arrival to the United States if they are imported. As a result, given the assumptions stated at the beginning of this guide, these taxes will likely not apply to the reader. However, if you intend to sell your fuel to another entity, these taxes may be triggered.

The federal excise tax is $0.243 per gallon for diesel.[14] Biofuels are not immune from these taxes, as 26 U.S.C. § 4041 also imposes the diesel tax rates on biodiesel. These taxes can be offset with the credits created by 26 U.S.C. § 6426, which creates the "biodiesel mixture credit." This credit amounts to $1.00 per gallon for biodiesel mixed with petroleum-based diesel. Claiming these credits requires registration with the IRS.[15]

Additionally, there are several exemptions available for fuels that are used on a farming operation for farming purposes. Consult IRS Publication 510, "Exise Taxes," for more information (Publication 510 is available at http://www.irs.gov/pub/irs-pdf/p510.pdf. Also note that the excise and income tax credits are linked via 26 U.S.C § 40(c) so that the income tax credit will be "reduced to take into account any benefit provided with respect to such alcohol solely by reason of the application of" the excise credit provisions—in other words, producers are not allowed to "double dip" from both the income tax credits and the excise tax credits.[16]

At the state level, an excise tax of $0.13 per gallon is imposed on diesel and diesel-blend.[17] As mentioned above, there are several potential exemptions from excise taxes including exemptions for fuel used for farm tractors or stationary engines used exclusively for agricultural purposes,[18] and biofuels "produced by an individual with crops grown on property owned by the same individual and used in a vehicle owned by the same individual on the public roads and highways of this state."[19]

Renewable Fuels Standard

The federal Energy Policy Act of 2005 (often called EPAct)[20] established a Renewable Fuels Standard (RFS) that mandates the inclusion of certain levels of biofuels into the U.S. fuel supply.[21] For more information on the RFS, consult the "Basic Biofuels Information Guide" available at http://agecon.okstate.edu/faculty/publications/3393.pdf. Under this rule, fuel importers and refiners are required to demonstrate compliance with the requirements of the RFS by purchasing credits called "Renewable Identification Numbers" (RINs).[22] Thus, if a biodiesel producer wants to take advantage of the programs under the RFS, they need to register with EPA so the fuel they produce can be assigned RINs.[23] Participants also need to register with EPA's Central Data Exchange (CDX). For more information on these registration requirements, visit the EPA's Renewable Fuels Reporting Forms Web site http://www.epa.gov/otaq/regs/fuels/rfsforms.htm.

Environmental Permitting

In Oklahoma, most environmental programs that are handled at the federal level by the EPA are delegated to the Oklahoma Department of Environmental Quality (DEQ). Thus, DEQ will be the agency that will handle environmental permitting for most biofuels facilities within the state. Although most on-farm biodiesel production projects will be too small to require permits under many environmental programs, producers should still examine whether their operations do qualify. If it is determined that a facility was operating without a required permit, substantial penalties may be enforced.

Air Permitting

The federal Clean Air Act (CAA)[24] requires air permits for facilities that emit more than specified amounts of certain air pollutants. These permits are often called "Title V" permits and facilities required to have such permits are called "Title V" (from the title of the CAA that contains the permit requirements) and/or "Major Sources." Facilities emitting more than the following amounts are considered to be major stationary sources of air pollution and must have a Title V permit:

1. Ten (10) tons per year of any individual hazardous air pollutant (HAP) or 25 tons per year of any combination of HAPs (note, a hazardous air pollutant is a substance found on EPA's list of particularly dangerous air pollutants; this list is found at 42 U.S.C. § 7412(b)); OR 100 tons of any "regulated" air pollutant (these pollutants include volatile organic compounds, certain classes of airborne particles or "particulate matter," carbon monoxide, nitrogen oxides, sulfur dioxide and lead).[25]
2. A facility's "potential to emit" must be compared against the emission threshold for each respective regulated air pollutant. "Potential to emit" is a calculation of a facility's theoretical ability to emit regulated pollutant(s), i.e., the worst case air emissions scenario. That calculation is based on an assumption that the facility will operate at its maximum capacity 24 hours a day, 365 days per year, even if it would not do so in reality.[26] As a result, you need to calculate the atmospheric emissions of your facility on this basis. Major sources must receive

13 26 U.S.C. §40A(d)(2).
14 26 U.S.C. §§ 4081, 4083.
15 26 U.S.C. §6426(a).
16 26 U.S.C. §§ 4041(b)(2), 6426, 6427(e), 2426.
17 68 Okla. Stat. § 500.4(a)(1).
18 68 Okla. Stat. § 500.10(8).
19 68 Okla. Stat. § 500.10(18).
20 Pub. L. 109-58 (2005).
21 42 U.S.C. § 7545(o).
22 40 C.F.R. § 80.1101(o).
23 40 C.F.R. § 80.1126.
24 42 U.S.C. §§ 7401 et seq.
25 42 U.S.C. §§ 7661a(a), 7661(2).
26 Okla. Admin. Code §252:100-8-2 (definition of "potential to emit").

construction approval from the DEQ prior to construction of the pollutant emitting equipment. As a result, large biofuels facilities need to begin the major source application process well before they anticipate starting facility construction or operations.

Most on-farm biofuel production facilities will not approach the major source permit thresholds. However, the DEQ also permits smaller sources of air emissions under their "minor facility" permit program that applies to facilities emitting more than 40 tons per year of a certain regulated air pollutant, but less than Major Source thresholds.[27] Note that facilities that emit 40 tons per year or less of actual emissions of each regulated pollutant are exempted from Title V and minor source permitting requirements.[28] Also note that the calculation of the "permit exempt" limits is based on actual emissions, rather than potential to emit.

If there is a question as to whether your facility would require a minor facility permit, you can request an "applicability determination" from DEQ.[29] A request for an applicability determination must be in writing, contain all information necessary for DEQ to determine whether a permit is required, and must be accompanied by the necessary permit fee (in the case of a minor facility, this fee is $250).[30] It is also possible to request evaluation of potential facility air permitting requirements through engagement of a qualified environmental consultant. Utilizing this approach can preserve the ability to self-report any compliance issues discovered during the evaluation process.

Another alternative for facilities whose potential to emit triggers the need for a major source permit is to ask DEQ for legally enforceable limits on their operations that would reduce their emissions below the major source limits.[31] These facilities are called "synthetic minor" sources. Where possible, synthetic minor source permitting can provide significant relief from the resources and expense needed to comply with a major source permit.

For more information on DEQ's air permitting programs, visit http://www.deq.state.ok.us/aqdnew/permitting/index.htm.

Water Issues

Generally, the federal Clean Water Act[32] (CWA) requires a permit for the discharge of any "pollutant" into a body of water from a discrete point (such as a pipe, conduit, ditch or channel). The CWA's definition of pollutant encompasses an immense range of possible substances.[33] If your biofuels facility will discharge only to a septic system or to a city sewage system, no discharge permit is required.[34] If, however, you will be discharging to such a system, you must ensure that your discharges will not cause that system to malfunction.

On the other hand, if you will need to discharge pollutants to a water body, you will need an Oklahoma Pollutant Discharge Elimination System (OPDES) permit. Such permits must take into account the nature of the pollutants emitted by the facility, the existing quality of the water receiving the discharge from the facility, the uses of the receiving water, and the technology that could be used to treat the discharge.[35] Given that many biofuels facilities have the opportunity to use different strategies for handling the water they generate (such as irrigating nearby fields and using evaporation ponds), facility developers should consult the permitting agency early in their planning process to determine if such alternatives may be approved. Generally, an applicant must submit their materials no later than 180 days prior to commencing a discharge, but in some circumstances the application must be submitted 90 days prior to construction of the discharge equipment.[36]

If your biofuels facility will be located outdoors, it may also need a permit for discharges of pollutants that occur from industrial storm water runoff (rainfall that runs off from the facility carrying potential pollutants with it). Usually, this is handled by a "general permit."[37] If applicable to the facility, a general permit often provides coverage at a lower cost and with less needed "lead time" than other permits. If you are building a large biofuels facility outdoors, "construction storm water" regulations may also come into play. These regulations require permit coverage for potential runoff discharges from construction sites that will disturb more than one acre of land.[38] As with industrial storm water permits, Oklahoma frequently handles construction storm water issues with general permits, making such permits much easier and much less expensive to obtain.

For more information on DEQ water permits, visit http://www.deq.state.ok.us/wqdnew/wqprogrms.html.

Figure 3. Co-products from seed crushing oilseeds for biodiesel production can include seed meals that can be used as livestock feeds.

[27] Okla. Admin. Code § 252:100-7-1.1 (defining "permit exempt facility" as "a facility that has actual emissions in every calendar year that are 40 tons per year (tpy) or less of each regulated air pollutant").

[28] See Oklahoma Department of Environmental Quality "Advice for Obtaining 'Permit Exempt' Applicability Determinations," available at http://www.deq.state.ok.us/aqdnew/resources/PermitExemptAdvice.pdf.

[29] Okla. Admin. Code § 252:100-7-2(d).

[30] Okla. Admin. Code § 252:100-7-3(a)(1).

[31] See Okla. Admin. Code §§ 252:100-1-3, 252:100-8-2, defining "potential to emit" to include artificial operations limitations if those limitations are legally enforceable.

[32] 33 U.S.C. §§ 1251 et seq.

[33] 33 U.S.C. § 1362(6).

[34] Such discharges do not constitute a "point source" discharge pursuant to the definition at 27A Okla. Stat. § 2-6-202.

[35] See generally Okla. Admin. Code title 252, chapter 606, subchapter 5.

[36] Okla. Admin. Code § 252:606-1-3, incorporating by reference 40 C.F.R. § 122.21(c).

[37] Okla. Admin. Code § 252:606-1-3, incorporating by reference 40 C.F.R. §122.26.

[38] *Id.*

Waste

The production of biofuels from agricultural materials generates a number of by-products and co-products, some of which may fit the definition of "solid waste" under the Resource Conservation and Recovery Act (RCRA).[39] In Oklahoma, enforcement of RCRA has been delegated to DEQ. As with the definition of pollutant previously discussed, the definition of "solid waste" encompasses almost every waste material generated by an industrial process. Such wastes must be disposed of at a RCRA-compliant landfill or by another RCRA-permitted method. Additionally, RCRA defines some solid wastes as "hazardous wastes" by both listing specific substances always considered hazardous and by setting forth chemical characteristics deemed "hazardous."[40] That is to say, a substance may be hazardous if either (A) it is listed on one of the RCRA "hazardous" lists, or (B) if the substance has a "hazardous" characteristic. Depending on the inputs and processes used for your biodiesel production facility, you may generate some quantities of these materials. While all hazardous wastes require special storage and disposal procedures, the facility itself may face additional registration and reporting requirements if it generates more than 1,000 kilograms of hazardous waste in one month.[41]

One of the most common co-products of the biodiesel production process is glycerine combined with methanol.[42] Methanol, at concentrations of 24 percent or greater by weight, meets the definition of an RCRA hazardous waste and may meet the defintion at lower concentrations depending on environmental conditions.[43] Generally, glycerine, in and of itself, will not be classified as a hazardous waste.[44] If, however, the glycerine produced contains methanol at sufficient concentrations for the methanol to be considered a hazardous waste, the entire volume of material — both glycerine and methanol — may deemed hazardous by virtue of RCRA's "mixture rule."[45] Because hazardous waste determinations are very fact-specific, you should consult your local waste management agency for help in determining proper handling for your process wastes.

Importantly, using co-products or by-products (for example, applying them as fertilizers or making other products out of them) can exclude those materials from the definition of "solid waste." Since this may significantly reduce the costs of waste management and/or provide additional cash flows, you should carefully review your fuel production processes to determine how all the facility's resources can be used or reused for maximum efficiency.

More information on DEQ's waste programs is available at http://www.deq.state.ok.us/lpdnew/index.htm.

[39] 42 U.S.C. §§ 6901 et seq. Oklahoma's Solid Waste Management Act is found at 27A Okla. Stat. § 2-10-101.

[40] 40 C.F.R. § 261.3.

[41] 40 C.F.R. § 260.10, 40 C.F.R. Part 262, generally.

[42] See "Biodiesel Production Techniques," OSU Fact Sheet FAPC-150, available at http://www.fapc.okstate.edu/files/factsheets/fapc150.pdf.

[43] See Materials Safety Data Sheet for Methanol, available at http://www.methanol.org/pdf/MethanolMSDS.pdf. Methanol's Chemical Abstract Number (CAS) is 67-56-1.

[44] See Materials Safety Data Sheet for glycerine, available at http://avogadro.chem.iastate.edu/MSDS/glycerine.htm. The Chemical Abstract Number (CAS) for glycerine is 56-81-5.

[45] 40 C.F.R. § 261.3(a)(2)(iv). However, if the mixture does not demonstrate a hazardous characteristic, it may be excluded by virtue of 40 C.F.R. § 261.3(b)(3).

Tank Storage Issues

Generally, the regulation of chemical storage tanks in Oklahoma is overseen by the Oklahoma Corporation Commission (OCC) and DEQ.[46] The tank storage of chemicals is regulated through two main programs. First, the "Spill Prevention, Containment, and Countermeasure" (SPCC) program applies to aboveground storage tank (AST) facilities containing 1,320 gallons or more of "oil and oil products.[47] For the purposes of the SPCC program, however, "oil and oil products" is defined as "oil of any kind or in any form including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum..."[48] While biodiesel itself might not fall into this definition, storage of many biodiesel feedstocks, including plant oils (such as soybean or canola oils) and animal greases, would meet this definition. If a large tank is used to store petroleum diesel for blending, that tank may trigger SPCC requirements. Facilities subject to the SPCC regulations must prepare a spill prevention, containment, and countermeasure plan that may include requirements to build "secondary containment" structures (such as curbs or berms) around tanks and must provide contingency plans

[46] 27A Okla. Stat. §§1-3-101(E)(5), (7).

[47] 40 C.F.R. § 112(b).

[48] 40 C.F.R. §§ 112.1(b), 112.2.

Table 1. Typical Biodiesel Inputs and Outputs.

Inputs

a) Feedstock Oil
   i) Rapeseed (Canola) Oil*
   ii) Waste Vegetable Oil (WVO)*
   iii) Animal Fats*
   iv) Vegetable Oil*
   v) Soybean Oil
   vi) Sunflower Oil
   vii) Peanut Oil
   ix) Tallows
   x) Palm Oil
   xi) Coconut Oil
   xii) Jatropha

b) Alcohol
   i) Methanol (Methyl Esters)*
      * Must report releases of 5,000 lbs. or more
   ii) Ethanol (Ethyl Esters)

c) Lye
   i) Potassium Hydroxide (KOH)*
      * Must report releases of 1,000 lbs. or more
   ii) Sodium Hydroxide (NaOH)*
      * Must reporte releases of 1,000 lbs. or more

Outputs and By-products

a) By-products
   i) Water
      1) Separated from oil, if feedstock is not pure oil
      2) Also from de-watering the fuel after the chemical reaction (transesterification of oils)
   ii) Glyceine
      1) Soaps
      2) Glycerol
      3) Surplus Lye (NaOH or KOH)*
         *Must report releases of 1,000 lbs. or more
      4) Methanol *
         *Must report releases of 5,000 lbs. or more

b) Output
   i) Biodiesel

for responding to a spill of regulated materials.[49] For more information on the SPCC program, visit EPA's Web site at http://www.epa.gov/emergencies/content/spcc/index.htm. In Oklahoma, SPCC plans for ASTs with regulated substances are overseen by the OCC. You can find more information regarding OCC's storage tank programs at http://www.occ.state.ok.us/Divisions/PST/pst.htm.You can also get more information about spill and pollution prevention from DEQ's Land Protection Division by visiting their website at http://www.deq.state.ok.us/lpdnew/index.htm.

The second tank storage program, the Underground Storage Tank (UST) program, regulates tank systems containing "regulated substances" constructed with 10 percent or more of their volume underground.[50] "Regulated substances" represents yet another broadly encompassing definition and includes substances regulated under a number of other regulatory programs including "hazardous substances"[51] and petroleum products.[52] Although biodiesel itself does not fit within this definition, it does include many substances commonly stored at biofuels facilities. Owners of regulated tank systems must register with either OCC or DEQ (depending on the stored substance as discussed above), install and maintain leak detection and corrosion protection systems, and keep records of material inventories and maintenance operations.[53] More information about storage tank regulations can be found on the OCC's Petroleum Storage Tank division's Web site at http://www.occ.state.ok.us/Divisions/PST/pst.htm.

Community Right-To-Know Issues

Another potentially applicable regulatory system is the Emergency Planning and Community Right-to-know Act (EPCRA), also known as "SARA Title III" (because EPCRA formed Title III of the Superfund Amendments and Reauthorization Act). EPCRA requires communication between a facility storing specified amounts of potentially dangerous substances and local emergency response agencies and establishes reporting requirements to help local emergency officials understand the inventories of such substances in their areas. One can find a list of substances that may trigger EPCRA applicability by consulting EPA's "List of Lists," available at http://www.epa.gov/ceppo/pubs/title3.pdf. Any prospective biofuels project should review its process design to determine if it will hold inventories of any EPCRA-covered substances. Generally, you should communicate with your local emergency services (firefighters, emergency medical, and local sheriff's and police departments) so that emergency responders are aware of any potential hazards present at your biofuels operation. This will provide greater safety for both you and them.

Table 1 presents a list of typical biodiesel production inputs and outputs, with notes of substances that may trigger EPCRA reporting requirements.

You can learn more about EPCRA from the DEQ's Risk Communication page at http://www.deq.state.ok.us/CSDnew/saratitleiii/index.htm.

Boilers

Some biodiesel facilities will use one or more boilers as part of the production process. Boilers (other than those used for household or commercial hot water applications) generally must be approved and routinely inspected by the Oklahoma Department of Labor (DOL) pursuant to the Oklahoma Boiler and Pressure Vessel Safety Act.[54] However, there are several exemptions from these requirements. The following types of boilers are exempt from the act:

- Pressure vessels having an internal or external operating pressure not exceeding fifteen (15) pounds per square inch gauge [one hundred three (103) kilopascals gauge] with no limit on size;
- Pressure vessels having an inside diameter not exceeding six (6) inches (152mm) with no limitation on pressure;

49 40 C.F.R. §§ 112.3, 112.7.
50 40 C.F.R. § 280.12. See also Okla. Admin. Code § 165:25-1-11.
51 42 U.S.C. § 9601(14).
52 Tanks coming under OCC's jurisdiction are those tanks containing "antifreeze, motor oil, motor fuel, gasoline, kerosene, diesel or aviation fuel [and] does not include compressed natural gas." Okla. Admin. Code § 165:25-1-11. Per 27A Okla. Stat. §§1-3-101(E)(5), (7), regulated tanks that are not under OCC's jurisdiction are placed under DEQ jurisdiction.
53 40 C.F.R. Part 280.
54 40 Okla. Stat. §§ 141.1, et. seq.

- Pressure vessels containing water heated by steam or other indirect means when none of the following limitations is exceeded:
  - A heat input of two hundred thousand (200,000) British thermal units per hour, fifty-eight thousand six hundred (58,600) watts,
  - A water temperature of two hundred ten degrees Fahrenheit (210 F), or
  - A water containing capacity of one hundred twenty (120) gallons, four hundred fifty (450) liters. [55]

Unless your boiler falls under one of the Act's exemptions, an annual inspection of the boiler by a DOL inspector will be necessary.[56] More information on DOL's boiler safety programs is available at http://www.ok.gov/odol/Safety_Standards/index.html.

Building and Zoning Restrictions

The first step in addressing building and zoning restrictions that may apply to your biofuels facility is to determine whether your facility lies within the jurisdiction of a city or town that has an enforceable code (other than rural areas in Oklahoma County and Tulsa County, very few areas outside the boundaries of a municipality are under any zoning or building code authority).[57] Even if your facility is in a rural area, that area may be within the annexed limits of a nearby city or town. Thus, always confirm the zoning status of your operation with the city engineering office of your nearby towns and cities.

If your facility will be within the jurisdiction of a city or town with an enforceable code, several different ordinances may apply to your operation. Zoning restrictions may apply to fuel production operations. For example, fuel production operations may be restricted to "commercial" or "industrial" areas and may not be allowed in "residential" or "agricultural" areas. However, read these regulations carefully; often, code enforcement officials may simply assume that a zoning restriction applies to your operation without understanding the scale of your operation. Meet with code enforcement officials and be prepared to fully explain the scope and operation of your fuel production system.

In addition to zoning restrictions, fire codes, electrical codes, and building codes may also apply to the construction and operation of your fuel production system. Again, these codes may vary from jurisdiction to jurisdiction. Consult your city or town's municipal office to determine the local code provisions that apply to your operation. Many times, local jurisdictions will adopt national codes, either outright or with modifications. Copies of these codes are sometimes kept at your local library. You can also get more information about these codes at the following Web sites:

National Fire Code: www.nfpa.org (contains information regarding both the National Fire Code and the National Electrical Code).

International Code Council: www.iccsafe.org.

Conclusion

On-farm biodiesel production provides an opportunity to agricultural producers by enabling them to produce their own fuels from their own products. This can potentially provide an important fuel cost management tool to the producer. However, many of the regulations that apply to large refineries do not carry exemptions for small-scale production of fuels, and as a result, those who produce fuel simply for their own use may often face the same regulations as a large, commercial refinery. As a result, you should conduct a careful evaluation of your planned biofuels production facility and determine the applicability of these regulations before proceeding. In the case of fuel production, it is definitely "easier to ask permission than forgiveness."

---

55 40 Okla. Stat. § 141.2.

56 Okla. Admin. Code § 380:25-3-2.

57 11 Okla. Stat. § 43-101 (cities given authority to enact zoning codes); 19 Okla. Stat. chapter 19A (zoning limitations on Oklahoma counties).

APPENDIX 1

On-Farm Biodiesel Production Applicability and Approval Checklist

Item	Applicable?	Approval Secured
EPA Fuel Production Facility Registration		
EPA Fuel Registration		
IRS Excise Tax Registration		
OTC Excise Tax Registration		
EPA Central Data Exchange (CDX) / RIN Registration		
DEQ Air Emissions Permit		
DEQ OPDES (water pollutant) Permit		
DEQ Solid/Hazardous Waste Generator Registration		
EPA/OCC SPCC Plan		
OCC Storage Tank Registration		
DEQ/Local Emergency EPCRA Notifications		
DOL Boiler Inspection		
Local Zoning Code Compliance Check		
Local Building Code Compliance Check		
Local Fire Code Compliance Check		
Local Plumbing Code Compliance Check		
Local Electrical Code Compliance Check		

APPENDIX 2

Permitting Programs

EPA Fuels Program Facility Registration Forms
http://www.epa.gov/oms/regs/fuels/rfgforms.htm

EPA Fuel Registration Forms
http://www.epa.gov/oms/regs/fuels/ffarsfrms.htm

EPA Guidance for Biodiesel Producers and Biodiesel Blenders/Users
http://www.epa.gov/otaq/renewablefuels/420b07019.pdf

IRS Application for Registration for Certain Excise Tax Activities
http://www.irs.gov/pub/irs-pdf/f637.pdf

IRS Publication 510 - Excise Taxes
http://www.irs.gov/pub/irs-pdf/p510.pdf

EPA Renewable Fuels Standard Forms
http://www.epa.gov/otaq/regs/fuels/rfsforms.htm

DEQ Air Permitting Page
http://www.deq.state.ok.us/aqdnew/permitting/index.htm

DEQ Water Permitting Page
http://www.deq.state.ok.us/wqdnew/wqprogrms.html

DEQ Waste Management Programs Page
http://www.deq.state.ok.us/lpdnew/index.htm

EPA SPCC Program Page
http://www.epa.gov/emergencies/content/spcc/index.htm

OCC Storage Tank Division Page
http://www.occ.state.ok.us/Divisions/PST/pst.htm

DEQ Land Protection Division Page
http://www.deq.state.ok.us/lpdnew/index.htm

OCC Petroleum Storage Tank Division Page
http://www.occ.state.ok.us/Divisions/PST/pst.htm

EPA List of Lists
http://www.epa.gov/ceppo/pubs/title3.pdf

DEQ Risk Communications Page
http://www.deq.state.ok.us/CSDnew/saratitleiii/index.htm

Oklahoma Department of Labor Safety Programs Page
http://www.ok.gov/odol/Safety_Standards/index.html

National Fire Code and National Electrical Code
www.nfpa.org

International Code Council
www.iccsafe.org

Web References for Additional Information

http://www.epa.gov/region7/priorities/agriculture/biodiesel_manual.pdf
This publication released by EPA Region 7 lists the federal laws and EPA regulations that a person must abide by when constructing or modifying a biodiesel plant.

http://www.nationalaglawcenter.org/assets/crs/R40488.pdf
Congressional Research Service Publication that primarily discusses general information on the national level, such as greenhouse gas emission information and an overview of the ethanol industry. Also provides useful economic information with the possibility programs that a producer could use to start a small-scale ethanol production facility.

http://www.nationalaglawcenter.org/assets/biofuels/oklahoma.pdf
Arkansas University of Law – Ag Law Research Publication that cites specific citations for the state of Oklahoma in regard to ethanol and biodiesel production. Citations cited specifically provide policy information regarding biofuel development in the state as well as financial incentive/tax information.

http://www.nationalaglawcenter.org/assets/crs/RL33572.pdf
CRS Congressional Report that discusses the many federal economic and tax incentives for producing biofuel ethanol and biodiesel. The report also provides information about tax breaks and loan programs.

http://www.nationalaglawcenter.org/assets/articles/mirus_federalbiofuel.pdf
CRS publication that cites a broad range of federal statutes dealing with the financial, environmental, and economical aspects of biodiesel and ethanol production.

http://www.deq.state.ok.us/factsheets/air/biodieselfs.pdf
Fact sheet discussing biodiesel production released by the Oklahoma Department of Environmental Quality.

http://www.afdc.energy.gov/afdc/progs/ind_state_laws.php/OK/ETH
List of ethanol tax credits for producers/retailers in the State of Oklahoma.

http://www.afdc.energy.gov/afdc/progs/ind_state_laws.php/OK/BIOD
List of biodiesel tax credits for producers/retailers in the State of Oklahoma compiled by the U.S. Department of Energy

http://www.afdc.energy.gov/afdc/fuels/biodiesel_laws_federal.html
List of federal biodiesel tax credits and laws compiled by the U.S. Department of Energy.

http://www.biodiesel.org/
Web site of the National Biodiesel Board, an advocacy group solely dedicated to the production of biodiesel in the U.S. Web site provides a wealth of information regarding the environmental, economic and agricultural impacts of biodiesel.

The Oklahoma Cooperative Extension Service
Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 64 cents per copy. 0310 GH/TE.