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To Steve.Simoes@state.vt.us, Peter.Marshall@state.vt.us
cc Jeff Fowley/R1/USEPA/US@EPA, Steve
Yee/R1/USEPA/US@EPA, Andrea
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bcc

Subject Fuel to fuel exemption

Dear Steve:

The attached memorandum prepared by Ronald Fein in our Office of Regional Counsel lays out our analysis of criteria that must be met to qualify for the fuel to fuel exemption under 40 CFR Part 261.2(c)(2)(ii) and identifies several commercial chemical products that have been positively identified by EPA as meeting this exemption.

The memorandum provides general background to answer your question as to what commercial chemical products qualify as "fuels" for purposes of the 261.2(c)(2)(ii) exemption. In particular, it clarifies that the total exemption in 261.2 applies to a narrower group of substances than the conditional exemption for "comparable fuels" in 261.38. It also clarifies that if a substance is a "fuel" it can qualify for the 261.2 exemption whether it is a listed commercial chemical product or a characteristic commercial chemical product.

The memorandum also answers Vermont's two specific questions as follows: First, mixtures of two fuels (such as when No. 6 fuel oil and gasoline inadvertently have been mixed) generally may be burned under the 261.2 exemption, absent some factor that makes the mixture less fuel-like and more hazardous. Second, fuel contaminated by water may be handled exempt from RCRA requirements if the fuel is first reclaimed by removing the water and then the resulting fuel is burned. A good program for doing this has been established by New Hampshire. We know you are considering following the New Hampshire program in designing (or interpreting) your regulations for water contaminated fuels and we think it is a good model.

None of the above points are very clear in the EPA regulations, but have been made clear in subsequent EPA interpretations of this exemption and in the attached memorandum. You may clarify these points in your regulations based on these EPA interpretations, or develop similar state guidance.

I also wish to note, that you may wish to exercise your discretion to be more stringent/broader in scope than the total exemption from solid waste in the federal regulations and place some restrictions on where these fuels can be burned. Devices such as space heaters or residential/commercial boilers may not be able to handle the variability of these fuels and you may want to direct that they can only be burned in industrial boilers or furnaces capable of safely burning the exempt waste subject to all applicable air program requirements.

Please let me know if you have any questions on this e-mail or its attachments and if we can be of any further help.



rcra fuels memo.doc



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 Congress Street, Suite 1100
BOSTON, MA 02114-2023

Memorandum

Date: April 21, 2006

Subject: 40 C.F.R. § 261.2(c)(2)(ii)
"Fuel to fuel" exemption for burning for energy recovery

From: Ron Fein, Office of Regional Counsel

Thru: Jeff Fowley, Office of Regional Counsel

To: Steve Simoes, Vermont

Under 40 C.F.R. § 261.2(c)(2), materials recycled by burning for energy recovery are generally solid waste. "However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels." *Id.* § 261.2(c)(2)(ii) (sometimes known as the "fuel to fuel" exemption). Thus, a commercial chemical product that qualifies as a "fuel," and is burned for energy recovery, is essentially exempt from RCRA regulation.

There is no definition in the regulations themselves for what constitutes a "fuel" under § 261.2(c)(2)(ii). However, as explained below, several criteria can be gleaned from EPA interpretations of this regulation for determining what qualifies for the exemption.

At the outset, it is important to note that the definition of "fuel" under § 261.2(c)(2)(ii) does *not* rely on the definition of "comparable fuel" under § 261.38. First, the "fuel to fuel" exemption was promulgated in 1985, whereas the "comparable fuels" provision was not promulgated until 1998. Therefore, the "fuel to fuel" exemption had independent meaning for at least 13 years. Second, the Federal Register preamble for the final "comparable fuels" rule mentioned § 261.2(c)(2)(ii) only once, briefly in passing. *See* 63 Fed. Reg. 33,782, 33,790-91 (June 19, 1998). This suggests that EPA did not intend that § 261.38 be used to construe the "fuel to fuel" exemption. Finally, § 261.38 contains stringent conditions on how the "comparable fuel" may be burned – e.g., public notice, sampling and analysis, and recordkeeping – whereas § 261.2(c)(2)(ii) provides a total exemption from the definition of "solid waste." Accordingly, § 261.2(c)(2)(ii) should apply to a narrower class of products than § 261.38.

Based on a close reading of language in the Federal Register and in regulatory interpretation letters, the following criteria determine when a commercial chemical product qualifies as a “fuel” that may be burned for energy exempt from RCRA.

I. The commercial chemical product must qualify under either of the following criteria (I.a or I.b.1-2) and meet conditions 2-4:

- a. **For products listed under § 261.33: The product is a commercial fuel or a normal component of commercial fuels.** Section 261.33 applies to a listed product that is “produced for use as (or as a component of) a fuel.” 40 C.F.R. § 261.33 (emphasis added). Based on this language, EPA has opined that “[l]isted commercial chemical products . . . are not solid wastes . . . when burned for energy recovery if they are themselves fuels or normal components of commercial fuels.” 50 Fed. Reg. 49,164, 49,168 n.8 (Nov. 29, 1985); *RCRA/Superfund Hotline Monthly Summary: December 85*, RCRA Online (RO) 12505 (Dec. 1, 1985). Only four listed commercial chemical products satisfying this criterion have been identified to us: benzene, toluene, xylene, and naphthalene. See 50 Fed. Reg. at 49,168 n.8 (toluene), 49,183 (naphthalene); *RCRA/Superfund Hotline Monthly Summary: November 86*, RO 12773 (Nov. 1, 1986) (benzene); RO 12505 (xylene).¹
- b. **For products not listed in § 261.33:**
1. **The product exhibits a hazardous characteristic.** See 50 Fed. Reg. 14, 216, 14,219 (Apr. 11, 1985); *Clarification of How RCRA Regulations Apply to Off-Specification Fuels that are Being Burned for Energy Recovery*, RO 11848 (July 11, 1994); *Regulatory Status of Recovered Petroleum Product*, RO 11713 (Nov. 25, 1992). Off-specification fuels, including gasoline, jet fuel, kerosene, and diesel, meet this criterion. *Regulatory Status of Residual Aviation Fuels that are Burned for Energy Recovery*, RO 11938 (Feb. 6, 1995); RO 11848.
 2. **The product has a heating value comparable to traditional oil-based fuels.** In determining that crude sulfate turpentine (CST) is a fuel under § 261.2(c)(2)(ii), EPA expressly based its finding on the fact that “CST has a heating value of approximately 17,000 to 19,000 Btu/lb, which is comparable to other fuels such as gasoline, diesel, and propane (approximately 18,000 to 20,000 Btu/lb).” *Regulatory Status of Crude Sulfate Turpentine (CST) Under RCRA*, RO 14609 (Aug. 8, 2002). Besides being supported by EPA past practice, this requirement makes good regulatory sense. As noted above, a § 261.2(c)(2)(ii) “fuel,” the burning of which is *not* regulated by RCRA, should satisfy a higher standard than a mere “comparable fuel,” the

¹ The discussion focuses on products that are *components* of commercial fuels, because we are not aware of any products listed in § 261.33 that are actually themselves commercial fuels.

burning of which *is* regulated by RCRA. Since a “comparable fuel” must have a heating value of at least 5,000 Btu/lb, 40 C.F.R. § 261.38(a)(1)(i), limiting the “fuel to fuel” exemption to fuels with a heat value of approximately 18,000 Btu/lb is eminently sensible.

- II. The product must be burned as a fuel only.** The purpose of burning the product must be energy recovery. This entails two requirements:
- a. **The product cannot be burned in an incinerator.** By definition, incinerators burn for the primary purpose of destruction. *See* RO 12773 (contrasting incinerators with industrial furnaces and boilers, which burn for energy recovery); *see also* 40 C.F.R. § 260.10 (defining these types of combustion units); 50 Fed. Reg. 614, 625 (Jan. 4, 1985) (explaining these definitions).
 - b. **Any material recovery incidental to the burning must be economically insignificant.** EPA “does not consider materials to be burned as fuels when both material values and energy are recovered from burning a single material, and material recovery is an important part of the recovery operation. For example, furnaces burning secondary materials to recover economically significant amounts of contained chemicals, and that also recover energy from the same materials, are not considered to be burning the materials as fuels.” 48 Fed. Reg. 14,472, 14,485 n.19 (Apr. 4, 1983).
- III. Burning as fuel must be a “normal use” and/or an “original intended purpose” of the product.** *See* 40 C.F.R. § 261.33 (explaining that listed items are hazardous wastes if, “in lieu of their original intended use, they are . . . burned as a fuel”); *see also* 50 Fed. Reg. at 14,219; 50 Fed. Reg. at 629 n.16; RO 11848; RO 11713. This normal or intended use may be established by *either* present commercial use *or* “an established history of use as a commercial fuel source.” RO 14609. For example, in the case of crude sulfate turpentine, EPA determined that, although CST is “not a widely used commercial fuel today,” it had been “manufactured and used as a commercial fuel dating back to the 1700’s.” *Id.*² By contrast, acetone-derived solvents do not qualify as fuels. *Exemption for Commercial Chemical Products Burned for Energy Recovery*, RO 13208 (July 27, 1988).
- IV. The product is not contaminated with non-fuel hazardous wastes (listed or characteristic).** *See* RO 11938. This is a more stringent requirement than § 261.38, which permits certain hazardous constituents up to specified levels. By contrast, presence of *any* non-fuel hazardous waste disqualifies a product from the total exemption of § 261.2(c)(2)(ii).

² The CST determination is the most detailed evaluation of whether a commercial chemical product qualifies as a “fuel” under § 261.2(c)(2)(ii), and is worth reading in full.

To summarize, then, EPA has identified the following products as qualifying for the § 261.2(c)(2)(ii) exemption:

1. Benzene
2. Toluene
3. Xylene
4. Naphthalene
5. Crude sulfate turpentine
6. Off-specification commercial fuels (gasoline, jet fuel, diesel, etc.)

Other products that exhibit a hazardous characteristic, are normally used as fuels, and have a heating value of approximately 18,000 Btu/lb or more may also qualify. In all cases, the fuel product must not be contaminated with non-fuel hazardous wastes, and must be burned for the purpose of energy recovery.

A mixture of two fuels, such as No. 6 fuel oil and gasoline, would probably satisfy all of the above criteria.³ Cf. RO 11938 (noting that off-specification aviation fuel may be blended with other types of fuel such as gasoline or diesel and then burned for energy recovery within the scope of § 261.2(c)(2)(ii)).

With respect to fuel-water mixtures, unless the proportion of water is truly *de minimis*, the proper method for recovery is first to reclaim the fuel and then, if desired, to burn the reclaimed fuel. The fuel-water mixture, while being reclaimed, would be exempt from RCRA as a commercial chemical product being reclaimed. Similarly, the reclaimed fuel would not be a solid waste. See 40 C.F.R. § 261.2(c)(3); see also N.H. Dep't of Env'tl. Servs., *Management of Fuel & Water Mixtures*, WMD-HW-30 (2004), at <http://www.des.state.nh.us/factsheets/hw/hw-30.htm>.

³ The only nuance is that the "normal use" principle is satisfied as to the individual components and not to the whole. If the mixture of two fuels produced a substance which was less fuel-like, or more hazardous, than the components, then this logic might not apply. However, in general, a mixture of two commercial chemical product fuels will be treated as a commercial chemical product fuel.



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03/31/2006 02:12 PM

To Steve Yee/R1/USEPA/US@EPA, Ken
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Subject Fuel to fuel exemption

Hi Ken, Steve -

I just spoke w/ Jeff Fowley and he recommended that I e-mail you both w/ a question:

We are looking to clarify the Vermont regulation that is based on 40 CFR 261.2(c)(2)(ii), a provision commonly referred to as the "fuel to fuel" exemption. After looking at this federal regulation, however, it is not clear to us how fuels are actually exempted. The federal regulation reads as follows:

(ii) However, commercial chemical products listed in §261.33 are not solid wastes if they are themselves fuels.

Upon reviewing 261.33(e) and (f), there do not appear to be any fuels (e.g., gasoline, diesel) actually listed...

Are there commercial chemical products that are not listed in 261.33 that are exempt under 261.2(c)(2)(ii)?

Thanks,
Steve Simoes, VT DEC
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