

NEWMOA Hazardous Waste Conference Call

September 13, 2016

Topic: Scrap Metal – Distinguishing HW & SW; The Definition of Recycling

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NEWMOA hazardous waste conference call

Lead: Rhode Island

Note-taker: Maine

Participants: CT DEEP (7 people); ME DEP (1 person); Mass DEP (6 people); NH DES (8 people); NJ DEP (4 people); NYS DEC (18 people); RI DEM (1 person); VT DEC (2 people); EPA Region 1 (2 people); EPA HQs (2 people); NEWMOA (1 person)

Rhode Island (RI)

RI recognizes various exclusions and exemptions for scrap metal under their hazardous waste (HW) rules. A scrap metal must be going for recycling or it must be managed as a HW. Rhode Island uses the federal definition of scrap metal. Elemental mercury not considered a scrap metal. Metals from foundries are excluded. For other scrap metal, if it is processed it is exempted and subject to speculative accumulation, if not processed it is not exempted. RI does not allow dust as scrap metal.

Some of the scrap metal that is excluded from the definition of solid waste has had to do with international trade. Under the Basel agreement, the movement of scrap metal internationally would be more difficult if not excluded from RCRA. A May 12, 1997 Federal Register Notice exempts scrap metal from the definition of solid waste.

Connecticut (CT)

Reviewed some of the history of scrap metal exemptions. The following RCRA On-Line information and the May 12, 1997 final rule regarding exempt scrap metals can be found at:

- [https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/7937356EDAB760B7852568E3004681F4/\\$file/14195.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/7937356EDAB760B7852568E3004681F4/$file/14195.pdf) (ROL 14195)
- <https://www.gpo.gov/fdsys/pkg/FR-1997-05-12/pdf/97-11636.pdf> (May 12, 1997 FR Notice)

See the email exchange included in the Appendix below for useful information. The attached documents are also useful.

CT regulates ignitable or reactive metals as HW. There is a need to address magnesium fines. There is no scrap metal exemption or exclusion for scrap containing significant amounts of liquids. If a material is readily dispersible, it is not a scrap metal. The 1985 EPA Preamble described typical metals that are recycled. EPA has identified items that meet the definition of scrap metal and they focus on the physical form of the material.

EPA's definition of fines and powders is vague and outdated. It is hard to identify what are exempt from RCRA. If someone is not regulated under RCRA, it could be stored in piles outdoors and in the case of powders and fines could be easily dispersed. A case in CT involved a company that casts magnesium. There are fines captured in the air pollution control equipment. Magnesium is an ignitable metal.

There remains a question about how much non-metallic material can be included to be excluded for scrap metal. Printed circuit boards are allowed as scrap metal even though they are 50 percent metal.

Some materials could also be a sludge and CT is still working through the issues of whether certain materials are scrap metals or sludges.

The group discussed whether agglomerated fines or melted and reformed ingots would meet the exemption or be allowed. It was suggested that physical pounding would possibly be acceptable.

The group also discussed bulb crusher waste, how states regulate the waste phosphor powder, and if it was being manifested. CT has found a decrease in mercury in the phosphor powder in recent testing. There is a question about whether the only metal being tested for was mercury; lead may be present in some of the specialty lighting that NY has been testing.

Maine (ME)

Maine rules add "...which are not otherwise mixed or contaminated with non-metal hazardous waste" to the federal definition of scrap metal. They do not allow liquid, fines, or dust to be managed as HW and have not adopted the circuit board exemption. During Maine's Universal Waste (UW) Rule development "green end cap" i.e., low mercury fluorescent bulbs were discovered to have as much mercury as regular bulbs, and lamps

were passing TCLP by using acetic acid as a masking agent. Because of this Maine regulates all fluorescent lamps as UW regardless of mercury content.

Maine also requires proof of recycling in cases where it is not clear what purpose the scrap metal has during “recycling”. There is a stipulation on painted scrap metal in case there is lead paint. The paint cannot be flaking or peeling. If flaking or peeling, needs to be stripped and the residues managed as hazardous waste.

There needs to be documentation of the claim that something is not solid waste or conditionally exempt from regulation. If no documentation is available during an inspection they can be cited for failure to document.

Massachusetts (MA)

The MA definition of scrap metal includes:

- Exempted bulk scrap metal
- Regulated recyclable
- Unregulated – not fail TCLP

MA allows the circuit board exemption, including shredded boards, but they cannot contain mercury. MA regulations describe what is not allowed under the exemption or exclusion. Recyclers need to obtain a permit to recycle. They do not include metal fines in the definition.

A participant asked how to determine what a “fine” is when it comes to scrap metal. CT responded that they refer to “readily recognizable” language from the EPA.

The grey areas in the regulations are fire arms manufacturers in Western, MA and waste from test firing of guns. Spent lead bullets meet the definition of regulated recyclable material. Bullets shatter on impact and do not meet the definition of scrap metal. They are working on this topic.

What about solder dross? It’s a byproduct of a process and the definition of scrap metal is silent on this material. There is some confusion about whether this material is part of the definition of scrap metal. Dross is melted metal that oxidizes. Agglomeration is also confusing.

New Jersey (NJ)

Most recycling is handled through solid waste permitting and the issues are addressed during the permitting process. Dust is addressed in the permit. NJ follows the federal rules.

New York (NY)

NY follows the federal rules on scrap metal exclusions and exemptions. However they require documentation through the Notification requirement in 261.2 and the notifier must identify where the scrap metal is going for recycling.

Liquids, free flowing or drained are not subject to the exclusions or exemptions. For example gas filters must be drained before they can be recycled. For process scrap metal, one must be able to see the metal.

Lead shot from shooting ranges is directed to a secondary smelter. Military bases recover the ammunition. They can sort it and some falls under scrap metal exemptions.

NY allows bulb crushing with stipulations. Bulb crushers have to meet recycling exemption and have to actually do recycling. They discourage bulb crushing.

New York has adopted all of the EPA exclusions.

Vermont (VT)

There is not much of a scrap metal industry in VT, and the RCRA Program does not have to deal with it very often. VT's definition of scrap metal is the same as EPA's. VT does not allow bulb crushing.

A company recycles metals from a machining operation. They remove spent coolant and recycle the dry metal.

New Hampshire (NH)

NH has adopted the Universal Waste Rule for lamps. A generator that is crushing bulbs must have a permit. A facility can recycle but there can't be a discharge and they have to recycle all components. They can operate without a permit. They allow a 25 hour storage period.

EPA Headquarters

There is a new definition of legitimate recycling in the definition of solid waste rule. They codified recycling. Basically, the rule applies to exempt and excluded scrap metal for all recycling. Legitimacy is part of the rule. Scrap metal exemption needs to meet the legitimacy criteria. The criteria focuses on containment and this applies to scrap metal. Legitimacy does not affect other criteria.

Secondary materials must be managed similar to raw materials. The group discussed analogous storage requirements, i.e., the way a non-scrap metal is stored must be the same as a similar scrap metal. This would eliminate the fines and dust from being stored where they are easily dispersed. Storage is typically on the ground. But the material needs to be contained.

Use constituting disposal remains an issue. For example, lead from battery casing in asphalt paving materials. Lead is not essential to the paving material and this is therefore not allowed.

Generators cannot do thermal treatment of scrap metal. Under the recycling exemption the generator cannot do thermal treatment. There is an exemption for CRTs being recycled.

EPA has not spoken one way or the other on the status of fines.

Discussion

A participant pointed out that EPA is not clear on management of powder forms of scrap metals and whether agglomeration is ok.

A responded suggested that physical agglomeration would be looked at differently than any type of thermal treatment, i.e., melting to form a larger solid object.

The following materials were mentioned during the call and shared by the participants.

From CT DEEP (email exchange to clarify regulatory interpretations for dental amalgam):

Dental amalgam typically contains enough leachable silver and/or mercury so as to fail the TCLP test, especially when it is in a finely-divided form (e.g., debris from drilling out old fillings).

Some dental amalgam generated at dental offices might meet the RCRA definition of scrap metal, and therefore be exempt from hazardous waste requirements under the exemption at 40 CFR 261.6(a)(3)(ii). The definition of "scrap metal" in 40 CFR 261.1(c)(6) reads as follows:

"Scrap metal" is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled."

This would include, for example, whole fillings that have been removed from patients' teeth.

However, the amalgam waste generated at dental offices often includes other materials that would NOT meet the definition of scrap metal, such as unused/unmixed (i.e., still soft) amalgam, waste amalgam that has been placed in a mercury-stabilizing solution, or amalgam trap waste which may include water, sediment, and other materials in it. For example, finely-divided dental amalgam would not meet the "bits and pieces" criteria in the scrap metal definition. Also, EPA has stated in various interpretive letters and memos that "scrap metals" do not include materials that are liquids or that have significant amounts of liquids in them. See, for example, the following EPA documents from RCRA On-Line:

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/E51884EED46A50508525670F006BF02D/\\$file/11860.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/E51884EED46A50508525670F006BF02D/$file/11860.pdf)

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/\\$file/11782.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/$file/11782.pdf)

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/FD59E0ED61A05B828525670F006BEDE3/\\$file/11806.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/FD59E0ED61A05B828525670F006BEDE3/$file/11806.pdf)
[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/5F34DE475C623688852568E3004681C4/\\$file/14183.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/5F34DE475C623688852568E3004681C4/$file/14183.pdf)
[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/DB4865CE1FFA91CE8525702700710908/\\$file/14184.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/DB4865CE1FFA91CE8525702700710908/$file/14184.pdf)

As a result, many (perhaps most?) waste amalgam would be regulated as hazardous wastes, and your COMPASS caller would have to have a hazardous waste transporter's permit in order to pick up amalgam waste from dental offices. In addition, they would be prohibited from storing it at a consolidation point in Connecticut without a RCRA Part B storage permit.

-----Original Message-----

From: Silva, Evelyn
Sent: Wednesday, July 11, 2012 1:11 PM
To: Bunnell, Ross
Subject: Amalgam collection from dental offices
Importance: Low

Hi Ross,

I received a COMPASS call yesterday from a caller interested in only collecting and storing (no processing) amalgam from dental offices. They would then consolidate for shipment to a PA facility for processing.

Is amalgam an assumed hazardous waste because of the amount of mercury and silver content or should I advise them to conduct determinations and depending on the volume (and test results) treat them according to their generator status? I wasn't sure if a company providing this type of service would be subject to RCRA regulations and/or must register as a waste transporter.

I appreciate any direction on this,

Evelyn

The discussion in DEEP's outreach documents regarding the scrap metal exemption at 40 CFR 261.6(a)(3)(ii) would only apply to *dry* amalgam wastes. CT DEEP concurs with EPA's interpretation that this exemption only applies to scrap metals that do not have "significant amounts of liquid." See for example, the following documents from EPA's [RCRA On-Line database](#):

[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/\\$file/11782.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/$file/11782.pdf)
[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/E51884EED46A50508525670F006BF02D/\\$file/11860.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/E51884EED46A50508525670F006BF02D/$file/11860.pdf)

[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/DB4865CE1FFA91CE8525702700710908/\\$file/14184.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/DB4865CE1FFA91CE8525702700710908/$file/14184.pdf)

[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/F00B95651A8F5F358525670F006BECDE/\\$file/11780.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/F00B95651A8F5F358525670F006BECDE/$file/11780.pdf)

[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/FD59E0ED61A05B828525670F006BEDE3/\\$file/11806.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/FD59E0ED61A05B828525670F006BEDE3/$file/11806.pdf)

[https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/5F34DE475C623688852568E3004681C4/\\$file/14183.pdf](https://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/5F34DE475C623688852568E3004681C4/$file/14183.pdf)

However, there is another exemption from hazardous waste requirements that may apply to the containment systems that you describe – namely the exemption codified in 40 CFR 261.2(c)(3) and Table 1 of the same section, which applies to “characteristically hazardous sludges being reclaimed.” The term “sludge” as used in this section is defined in 40 CFR 260.10 as follows:

Sludge means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

Although very small compared to a traditional wastewater treatment facility, the type of unit you describe is designed specifically for the treatment of wastewater – specifically, wastewater containing dental amalgam originating from operations at dental offices. As a result, it would appear to qualify as a “sludge” under this definition. Furthermore, if it is hazardous, it would be hazardous for the characteristic of toxicity (i.e., TCLP mercury and/or silver). Therefore, if the contents of the containment unit are reclaimed for mercury and/or other metals, the separation unit would qualify as a “characteristically hazardous sludge being reclaimed” as described above, and would therefore be exempt from hazardous waste requirements in Connecticut.

However, Connecticut has another set of requirements that would apply to the containment systems, even if they are exempt from hazardous waste requirements. In particular, pursuant to Connecticut General Statutes Section 22a-454, certain non-RCRA hazardous wastes are subject to state-specific requirements in Connecticut. For more information on these so-called “Connecticut-Regulated Wastes,” see the following DEEP web page:

http://www.ct.gov/deep/cwp/view.asp?a=2718&q=325428&deepNav_GID=1967

Based on the description in your email, the contents of the containment system would be regulated as waste code CR04 – “waste chemical liquid.” Although this does not make the containment system subject to hazardous waste requirements, it does require DEEP permits for anyone that is “engaged in the business of collecting, storing, or treating” these materials. In particular, this would *typically* mean that the transporter picking up the containment systems would have to have a [Connecticut waste transporter’s permit](#). Here is link for a public listing of the companies that have such a permit:

http://www.ct.gov/deep/lib/deep/waste_management_and_disposal/transporters_and_facilities/waste_transporter_list.pdf

I said above that a transporter permit would *typically* be required since there are some circumstances in which DEEP has concluded that a particular company was not “engaged in the business” of transporting Connecticut-Regulated Waste. However, such determinations can be very case-specific and require a detailed analysis to determine if a permit is required or not. As an illustration of this, see attached two letters that DEEP sent regarding two different companies that transported Connecticut-Regulated Waste. In the first example (“Carbtrol Letter”), DEEP concluded that the company *was not* “engaged in the business” of transporting Connecticut-Regulated Waste and *did not* need a transporter’s permit. In the second example (“Quinlan Letter”), DEEP concluded that the company *was* “engaged in the business” of transporting Connecticut-Regulated Waste and *did* need a transporter’s permit. In light of the above, I would advise that any dental offices using the containment systems you described in your letter ship them via a permitted transporter unless DEEP indicates otherwise in writing.

In your email, you also referenced a provision adopted by the Massachusetts DEP that provided an exemption for amalgam wastes. Please note that this Massachusetts provision was specifically written into their regulations and approved by EPA as part of their RCRA Authorization process. Connecticut does not have such a provision in its regulations, and has not been authorized by EPA to allow such an exemption. As a result, this exemption does not apply in Connecticut.

In your email, you also raise the point that most dentists in Connecticut are subject to regulation as CESQGs. Although I would agree with this statement, I should note that Connecticut’s Hazardous Waste Management Regulations require CESQGs to use transporters that are permitted and have EPA ID Numbers as transporters. Our rules also require CESQGs to send their hazardous wastes only to properly permitted facilities (i.e., they may not dispose of their hazardous waste in the trash as allowed under the federal regulations). Although this would not pertain to the containment systems if they are exempt from hazardous waste requirements as characteristic sludges being reclaimed, it would apply to any other non-exempt hazardous wastes generated at dental offices that are CESQGs.

Please feel free to get back to me if you have any further questions.

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Ensuring a clean, affordable, reliable, and sustainable energy supply.*

From: Al Dube [<mailto:aldube@toppensolutions.com>]
Sent: Friday, March 18, 2016 11:00 AM
To: Bunnell, Ross
Subject: Dental amalgam management / Total containment system

Ross,

A recent review of the CT DEEP documentation regarding dental amalgam does not provide enough clarity for a particular process. A facility in Michigan provides total containment systems for dental offices. Unlike an amalgam separator, the containment system captures all of the dental waste from the dental offices vacuum system. Amalgam separators are only required to capture the solid waste thus allowing for significant amounts of dissolved mercury to pass through the system to the POTW, containment systems effectively eliminate discharge, the dental office would be zero discharge for amalgam waste. The logistics of the containment system program schedules a 60 day collection of the contained waste which is transported to a process facility where the amalgam waste process removes mercury to non detectable limits using method 1631E. Solids and liquids are recycled, solids for metals recovery and the liquid into products which including an evacuation line cleaner sold into dentistry.

The CT DEEP allows dental offices to handle amalgam waste under a scrap metal exemption for recycling pursuant to 40 CFR 261.6(a)(3)(ii). Dental offices in CT have CESQG status provided they stay within the CESQG waste limitation 220 lbs. per calendar month. Amalgam separate collection containers when replaced are not drained they are sealed prior to shipping. The material within these containers contain both liquids and solids in some cases potentially a 50/50 split. The State of CT allows for these containers to be shipped by common carrier out of the state without hazardous waste requirements. In 2005 the Massachusetts DEP petitioned the US EPA and was "approved" the opportunity to bring "amalgam waste" outside of RCRA hazardous waste rules, defining "amalgam waste" as waste containing amalgam.

Based on this, would a process described above for total containment, transport to a process facility where the total mercury is removed, the liquid is also recycled be allowable within the CT DEEP requirements and guidance?

On a side note, the MI DEQ frequently visits the operation facility in MI for education purposes since the facility is well within all protocols for the MI DEQ. In addition, the local POTW has on more than one occasion requested the facility discharge to their system for dilution purposes because the resulting water is so pristine.

Thank you for your time and efforts.

HAVE A TOPPEN DAY

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