



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

July 10, 2020

George Jones
President
Seaman Paper Company
51 Main Street
Otter River, MA 01438

Dear Mr. Jones:

In a letter dated September 26, 2019, Steven Babcock of Tetra Tech (on behalf of Seaman Paper Company (Seaman)), requested confirmation from the U.S. Environmental Protection Agency (EPA) that the waste paper generated by Seaman Paper operations at three facilities in Massachusetts is a non-waste fuel pursuant to 40 CFR 241.3(b)(1). I am responding directly to you in response to that letter.

To be designated as a non-waste fuel under section 241.3(b)(1), the Non-Hazardous Secondary Materials (NHSM) regulations require that the NHSM remain within control of the generator as defined by 40 CFR §241.2. Also, the NHSM must meet the legitimacy criteria for fuels in 40 CFR §241.3(d)(1).

The September 26, 2019, letter provided information regarding Seaman's waste paper generation process and handling as well as contaminant comparison data to illustrate how Seaman's waste paper meets the NHSM legitimacy criteria. After receiving the letter, EPA corresponded with Tetra Tech to gather additional information. Following concerns raised by EPA regarding the formaldehyde levels reported in the original request letter, further formaldehyde testing was conducted on the materials in question and follow-up data submitted to EPA.

Based on the information provided in the original request letter, supplemental electronic correspondence with EPA and Tetra Tech and Seaman, and the submittal of additional formaldehyde data, we believe that waste paper generated at Seaman's Massachusetts facilities and burned in Seaman's combustion units for energy recovery would constitute a non-waste fuel under 40 CFR part 241, provided the waste paper continues to meet the specifications as indicated by the additional testing. If these specifications are not maintained, the Agency may reach a different conclusion. The remainder of this letter outlines the information and logic used to reach this determination.¹

¹ Note that a non-waste determination under 40 CFR Part 241 does not affect a state's authority to regulate a non-hazardous secondary material as a solid waste. Non-hazardous secondary materials may be regulated simultaneously as a solid waste by the state, as well as a non-waste fuel under 40 CFR Part 241 for the purposes of determining the applicable emissions standards under the Clean Air Act for the combustion unit in which it is used.

Waste Paper Generation and Handling

As stated in Tetra Tech's September 2019 letter, waste paper is generated at Seaman's three Massachusetts facilities, Otter River, Gardner, and Orange Massachusetts. The Otter River facility is a non-integrated paper mill that produces lightweight specialty papers, including wrapping tissues, wax-coated bakery tissues, decorative crepe paper, and flat tissue specialty papers. Raw materials for manufacturing the paper consist of water, virgin paper fiber and recycled paper fiber. Various chemicals such as polymers, dyes, and adhesives are added during the paper making process. The Otter River facility operates two wood-fired boilers that meet the thermal demands of the facility. The Otter River facility manufactures paper, it does not convert it, so cutting of rolls is not done at this facility. Waste paper generated at the Otter River facility is mostly leftover paper from product changeover or grades that cannot be repulped. Additional Otter River waste paper is scrap paper that does not meet product quality standards and floor sweepings.

The Gardner facility has two manufacturing operations. The first operation manufactures decorative crepe paper. It includes dip dye machines and slitting/packaging lines and sheeters. The second operation cuts and packages finished products from larger rolls of paper along with wax tissue paper for food service production. The Orange, MA facility does not use any chemicals and produces finished products such as tissue and wrapping paper from large rolls of paper. Waste paper at the Gardner and Orange locations are generated from the cutting of large rolls of paper to produce finished products.

Within the Control of the Generator

Within control of the generator is defined in 40 CFR 241.2 to mean that the NHSM is generated and burned in combustion units at the generating facility; or that such material is generated and burned in combustion units at different facilities, provided the facility combusting the nonhazardous secondary material is controlled by the generator; or both the generating facility and the facility combusting the non-hazardous secondary material are under the control of the same person. Based on the information provided to EPA, all paper produced at these three facilities that is not sold to an end user is considered waste paper and is under the control of Seaman and stored in bales until enough is accumulated to be sent to a landfill. Seaman is proposing to combust the waste paper at the Otter River facility's two existing biomass boilers.

According to information provided by EPA, Seaman is the sole owner and operator of the three waste paper generating facilities described above including the combustion units at the Otter River facility. In addition, the waste paper never leaves Seaman's control. Accordingly, Seaman has control of all operations at all three facilities as "control" is defined under 40 CFR 241.2.

Based on this information, we agree that the material would be combusted "within the control of the generator," as required by 40 CFR 241.3(b)(1).

Legitimacy Criteria

Under 40 CFR 241.3(d)(1), the legitimacy criteria for fuels include: 1) management of the material as a valuable commodity based on the following factors—storage prior to use must not exceed reasonable time frames, and management of the material must be in a manner consistent with an analogous fuel, or

where there is no analogous fuel, adequately contained to prevent releases to the environment; 2) the material must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy; and 3) the material must contain contaminants at levels comparable to or lower than those in traditional fuels that the combustion unit is designed to burn.

Manage as a Valuable Commodity

According to the information provided, Seaman will handle the waste paper with the same care as it handles the wood for its biomass boilers. It will be stored inside, in covered trailers, or in covered trucks at all times to prevent contact with moisture. Each facility generates approximately 1-2 truckloads per month of waste paper. During normal operation, the waste paper will be shredded and blended into the biomass fuel stream as it is generated and before the firing in the boilers. The wood fired in the boilers is received as chips, approximately 1 ½ inch by 1 ½ inch, and stored in a silo prior to firing in the boilers. Extended storage of waste paper is not planned but circumstances such as boiler outages and other unforeseen circumstances may require storage onsite of the waste paper. Storage time for the waste paper is usually 1 month before firing in the boiler, however, EPA expects the storage to never exceed one year.

The letter noted that the amount of waste paper that can be fired in the boilers cannot be determined until a trial burn is completed, which will require approval in advance from the Massachusetts Department of Environmental Protection. As firing of the waste paper will reduce operating costs, Seaman expects to fire as much of the waste paper as possible. The letter explained that Seaman has been handling the waste paper for decades without allowing releases to the environment, and that the waste paper contains a negligible amount of fines² that may be released to the atmosphere. Seaman indicated that they would continue to handle the waste paper in such a manner.

Based on this information, we agree that Seaman's waste paper is managed as a valuable commodity.

Meaningful Heating Value and Used as a Fuel to Recover Energy

According to the September 26, 2019 letter, Seaman will burn the waste paper in its Otter River facility boilers, which are used to meet the thermal demands of the facility. Therefore, the criterion that the combustion unit recovers energy is satisfied.

The letter indicates that the heating value of the waste paper ranges from 4,940 to 6,920 Btu/lb as received, with an average of 6,013 Btu/lb. The moisture content ranges from 10 to 30 percent. As the Agency stated in the preamble to the NHSM final rule, NHSMs with an energy value greater than 5,000 Btu/lb, as fired, are considered to have a meaningful heating value³. Because the waste paper has an average heating value above that threshold, the criterion that the NHSM has meaningful heating value is satisfied.

² Fines are particulate fines which are generated during the cutting of the paper to produce finished products and will be generated to produce 2"x2" squares to be added to the biomass for firing in the boiler.

³ See 76 FR 15,482 (March 21, 2011) ("Except as otherwise noted, to satisfy the meaningful heating value criterion, the non-hazardous secondary material must have at least 5,000 Btu/lb, as fired (accounting for moisture), since the as-fired energy content is the relevant parameter that must be assessed to determine if it is being discarded rather than used as a fuel for energy recovery.") See also 76 FR 15,541.

Comparability of Contaminant Levels

The September 2019 letter from Tetra Tech included a comparison of contaminant data for Seaman's waste paper against contaminants in biomass for testing conducted in August 2019.

The letter acknowledged that reported formaldehyde levels were above the expected range for virgin wood and biomass (1.7 to 27 ppm) for two of the three composite samples but explained that Seaman does not use any formaldehyde-containing chemicals in its processes. Seaman conducted further sampling in October to identify the source of the formaldehyde. Tetra Tech submitted test results to EPA on October 17, 2019 for four samples of different waste paper grades. The data indicated that two samples had formaldehyde levels within the range for virgin biomass, one was at the upper range, and the last one was measured above the range at 140 ppm. The highest level in the original composite was 285 ppm. Seaman reasserted that neither they, nor their vendors, use formaldehyde in the production of any grades of tissue.

Therefore, Seaman conducted further formaldehyde sampling in November and December of 2019 and in March 2020 using a different laboratory to determine if the original lab could have been the source that introduced the formaldehyde to the samples. The same testing method, SW 846/Method 8315A, was used at the new lab. Tetra Tech submitted results to EPA on January 22 and March 16, 2020, which demonstrated formaldehyde levels within the range of wood biomass for all samples, including gold tissue. Tetra Tech did not sample for any other contaminants.

Formaldehyde test results are included in Table A, below. The last two sampling episodes comprise 11 separate samples of differing paper types, all of which contained formaldehyde concentrations below the detection level or well within the range of wood biomass. Given Seaman's investigation determining that there was no possible source of formaldehyde other than lab contamination, EPA accepts the latter sampling results as appropriately characterizing this waste stream regarding the formaldehyde contaminant comparison.⁴

With respect to other contaminants, all August 2019 results for metal and non-metal elements were lower than or within the range found in biomass. The ranges for these contaminants, as well as the formaldehyde range for the two most recent sampling rounds, are presented for comparison in Table B, below.

The conclusion that Seaman's waste paper meets the contaminant legitimacy criterion for units designed to burn biomass assumes that the material was tested for any contaminant expected to be present. Additional contaminants for which the waste paper was not tested must be present at levels comparable to or lower than those in the appropriate traditional fuel, based on your knowledge of the material.

Conclusion

Overall, we find that Seaman's waste paper, based on the information provided to EPA, in Tetra Tech's letter and supplemental information, remains under the control of the generator and meets the legitimacy

⁴ Seaman stressed that formaldehyde is not used in its processes and is not used by any of its vendors. As indicated in this letter, if the stated specifications are not maintained, EPA may reach a different conclusion regarding the status of the material. EPA suggests that Seaman continues to ensure that the formaldehyde levels remain consistent with the information presented to EPA, either through periodic sampling or other means as appropriate.

criteria when burned in biomass combustion units for energy recovery. Accordingly, we consider Seaman's waste paper processed into a NHSM is a non-waste fuel (as described in this letter) under the 40 Part 241 regulations. This assumes that the above specifications in Seaman's request are maintained. These specifications/conditions will ensure the consistency and homogeneity of the fuel product and that it will not contain waste materials for combustion, including contaminant levels that exceed those comparable to those typically found in biomass.

If you have any other questions, please contact Jesse Miller of my staff at (703) 308-1180.

Sincerely,

7/10/2020

X Andy Crossland

Signed by: ANDREW CROSSLAND

Andy Crossland, Acting Director
Materials Recovery and Waste Management Division
Office of Resource Conservation and Recovery

Enclosure

cc: Nancy Barmakian, Director LCRD, Region 1
Ginny Lombardo, Branch Chief LCRD, Region 1
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Enclosure

Table A: Summary of Seaman Paper Formaldehyde Results (ppm dry basis)

Sample Date	Sample #1	Sample #2	Sample #3	Sample #4	Sample #5	Sample #6	Sample #7
August 20, 2019	144.4	9.8	285.7	-	-	-	-
October 7, 2019	30.9	180.4	9.3	10.3	-	-	-
November 13, 2019	2.6	2.6	56.7	-	-	-	-
December 19, 2019	12.1	9.1	3.0	4.6	-	-	-
March 2, 2020	2.6	2.6	3.4	14.2	9.7	16.8	2.6

Table B: Contaminant-by-Contaminant Comparison

Contaminant	Units	Seaman Waste Paper ¹	Wood / Biomass: Range ²	Results of Comparison
Metal Elements - dry basis				
Antimony (Sb)	ppm	1.1 - 2.3	ND - 26	Within wood/biomass range
Arsenic (As)	ppm	3.3 - 4.1	ND - 298	Within wood/biomass range
Beryllium (Be) ³	ppm	<0.034	ND - 10	Within wood/biomass range
Cadmium (Cd) ³	ppm	<0.34	ND - 17	Within wood/biomass range
Chromium (Cr) ³	ppm	<1.11	ND - 340	Within wood/biomass range
Cobalt (Co) ³	ppm	<1.11	ND - 213	Within wood/biomass range
Lead (Pb) ³	ppm	<1.11	ND - 229	Within wood/biomass range
Manganese (Mn)	ppm	7.6 - 9.3	ND - 15,800	Within wood/biomass range
Mercury (Hg) ³	ppm	<0.023	ND - 1.1	Within wood/biomass range
Nickel (Ni) ³	ppm	<1.11 - 1.2	ND - 540	Within wood/biomass range
Selenium (Se)	ppm	2.8 - 3.9	ND - 9.0	Within wood/biomass range
Non-metal elements - dry basis				
Chlorine (Cl)	ppm	0.09 - 0.12	ND - 5,400	Within wood/biomass range
Fluorine (F) ³	ppm	<0.011	ND - 300	Within wood/biomass range
Nitrogen (N)	ppm	8,100 - 10,000	200 - 39,500	Within wood/biomass range
Sulfur (S)	ppm	571 - 1,651	ND - 8,700	Within wood/biomass range
Hazardous Air Pollutant (HAP) compounds				
Formaldehyde ⁴	ppm	2.6 - 16.8	1.6 - 27	Within wood/biomass range
Notes:				
1. Except as noted in note 4, range is based on three composite samples from Seaman's three MA sites. Testing was conducted in August, 2019.				
2. Ranges for Wood & Biomass Materials and Coal come from a combination of EPA data and literature sources, as presented in EPA document Contaminant Concentrations in Traditional Fuels: Tables for Comparison, November 29, 2011, available at https://www.epa.gov/rcra/contaminant-concentrations-traditional-fuels-tables-comparison .				
3. Value shown reflects test detection level.				
4. Formaldehyde range reflects results from December 2019 and March 2020 testing, conducted by a new laboratory, due to concerns that the original lab may have introduced the contaminant to the samples (Seaman has stated that neither they, nor their vendors, use formaldehyde in any of their production).				