



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

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

OCT 05 2011

Joseph Knapik
International Paper Products Corporation
98 Sgt TM Dion Way
Westfield, MA 01085

Dear Mr. Knapik:

In your letter of June 9, 2011, and follow-up letter of July 19, 2011, you requested confirmation from the U.S. Environmental Protection Agency (EPA) that Enviro-Fuelcubes (EFC) burned in combustion units are non-waste fuels in accordance with the requirements in 40 CFR part 241.3(b)(4). To be designated as a non-waste fuel under that section, the rule requires that processing of non-hazardous secondary material (NHSM) meets the definition of processing in 40 CFR 241.2. Also, after processing, the NHSM must meet the legitimacy criteria for fuels in 40 CFR 241.3(d)(1). Based on the information provided in your letter and supporting materials, we believe the 40 CFR part 241 regulations would identify EFC generated by the International Paper Products Corporation (IPPC) and burned in combustion units as a non-waste fuel.¹ The remainder of this letter provides the basis for our position. *If there is a discrepancy in the information provided to us, it could result in a different interpretation.*

Enviro-Fuelcubes

IPPC processes non-hazardous raw material feedstocks from "pre-consumer" sources in the industrial, commercial, retail, and institutional market sectors into EFC. The raw materials, outlined in your "Specification Raw Materials" document, include paper and polymer based products, fabrics, textiles, non-halogenated plastics, wood and packaging materials. You specifically state that hazardous wastes and halogenated plastics are prohibited through arrangements with suppliers. You also state that the EFC may have up to 10% non-construction and demolition (C&D) wood, such as clean pallets, lumber scraps, and resinated wood products.

Processing

Processing is defined in 40 CFR 241.2 as operations that transform discarded NHSMs into a

¹ Note that a non-waste determination under 40 C.F.R. Part 241 does not preempt 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, but as a non-waste fuel under 40 C.F.R. Part 241 for the purposes of determining appropriate emissions standards under the Clean Air Act for the combustion unit in which it is used.

non-waste fuel or non-waste ingredient, including operations necessary to: remove or destroy contaminants; significantly improve the fuel characteristics e.g. sizing or drying of the material in combination with other operations; chemically improve the as-fired energy content; or improve the ingredient characteristics. Minimal operations that result only in modifying the size of the material by shredding do not constitute processing for purposes of the definition. In your letter, you state that upon arrival, each load is inspected for small metal parts, wires, batteries, garbage and other materials that are not meant to be in the incoming feedstock container. These materials are removed, using in-line magnets for metals. Other reusable or recyclable commodity grade portions of the material are also removed and shipped to domestic and international markets. The EFC manufacturing process then conducts blending, size reduction (cutting and shearing) and densification into a 1.25" X 1.25" X 2" EFC structure. Based on this description—that is, removal of contaminants along with blending, size reduction and densification, we believe the process used to produce EFC meets the definition of processing in 40 CFR 241.2.

Legitimacy Criteria

Under 40 CFR 241.3(d)(1), the legitimacy criteria for fuels includes: 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 meaningful heating value and be used as fuel in a combustion unit that recovers energy; and 3) the material must contain contaminants at levels comparable to or less than those in traditional fuels which the combustion unit is designed to burn. The term contaminants is defined in 40 CFR 241.2 as constituents in the NHSM that will result in emissions of air pollutants under Clean Air Act section 112(b) or the nine pollutants listed under Clean Air Act section 129, including those constituents that could generate products of incomplete combustion.

Manage As A Valuable Commodity

Regarding the first criterion, you state that upon receipt at IPPC, the various materials² are processed into EFC. The processed EFC is then stored in buildings, storage bins and fuel delivery trailers. The EFC is then sold to power plants and kiln operations (lime and cement) for its fuel value. Your permit with the Massachusetts DEP requires that processed materials be stored onsite for no more than 30 days, but that time limit may be exceeded to reach a transportable load (one full truck load).

Based on that information, the material is managed as a valuable commodity and storage does not exceed a reasonable time frame. Although no analogous fuel was identified, storage in buildings, storage bins and fuel delivery trailers is adequate to prevent releases to the environment. Please note that the facilities receiving the material must also manage it as a valuable commodity for the material to remain a non-waste fuel.

² As noted in the regulations, prior to processing, the EFC material may be considered a solid waste and is subject to appropriate federal, state, and local regulations.

Meaningful Heating Value and Used As A Fuel to Recover Energy

Regarding the second legitimacy criterion on meaningful heating value and be used as a fuel in a combustion unit that recovers energy, you state that the EFC has an as-fired fuel value of between 9,000 to 10,000 Btu/pound. As discussed in the final rule, 5,000 Btu/pound was established as a general guideline for meaningful heating value. In addition, power plants and kiln operations recover energy from the use of this material as a fuel. Thus, the material meets this criterion.

Comparability of Contaminant Levels

Regarding the third criterion on contaminant levels, your letter requested confirmation that the EFC meets the contaminant level criterion when compared to coal, petroleum coke, biomass and number 6 fuel oil, fuels that are used in the combustion units for which the unit(s) are designed to burn. You prepared the attached table "IPPC Enviro-Fuelcubes to Traditional Fuels," which compared the EFC contaminant data to the contaminant data for these four traditional fuels as outlined in the materials characterization paper "Traditional Fuels and Key Derivatives."^{3,4,5} Please note that only those constituents identified in the contaminant definition under section 241.2 are relevant with respect to meeting the contaminants legitimacy criterion. Therefore, from the table of contaminant concentrations you submitted, we evaluated only those constituents identified under section 241.2.

As indicated in your attached Table, the EFC meets the legitimacy criterion for contaminant levels when compared to solid traditional fuels and number 6 fuel oil.⁶ This conclusion also presumes that additional constituents for which the EFC was not tested are present at levels comparable to or lower than those in the appropriate traditional fuel, based on your knowledge of the material.

³ The Materials Characterization Paper on *Traditional Fuels and Key Derivatives* can be found at www.epa.gov/epawaste/nonhaz/define/index.htm.

⁴ EPA notes that the contaminant values listed in the *Traditional Fuels and Key Derivatives* MCP for coal (and other traditional fuels) may be revised in the future based on the availability of new or additional data. Any future revisions to the values will not impact the conclusions made in this letter; the values are based upon the data that is available at the time EPA responds to a request.

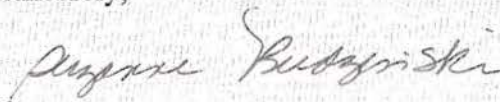
⁵ You may use other data on the contaminant levels in traditional fuels in determining whether the levels are comparable to International Paper Products Corporation's EFCs. That is, other data on the level of contaminants in traditional fuels that your company has or may become aware of may also be considered in determining whether the level of contaminants in International Paper Products Corporation's EFCs are comparable to those in the traditional fuel that the combustion unit is designed to burn.

⁶ The term "volatiles" is not related to the term "volatile organic compound (VOC)" and is not pertinent to the definition of "contaminants" specified in §241.2. Instead, the term "volatiles" comes from a proximate analysis of fuels, a common test performed to characterize fuels by determining percentages for moisture, volatiles, ash, and fixed carbon that add up to 100 percent. In such an analysis, a sample is weighed, burned at a specified temperature, and weighed again. The percent weight difference is called "volatiles" and includes any gases or vapors driven off at the specified temperature, a large portion of which is likely to be non-contaminants.

Overall, based on the information provided in your letter, we believe the facts indicate that the EFC meets both the processing definition and the legitimacy criteria outlined above. Accordingly, we would consider this NHSM a non-waste fuel under the 40 Part 241 regulations.

If you have any other questions, please contact Michael Svizzero of my staff at 703-308-0046.

Sincerely,

A handwritten signature in cursive script, appearing to read "Suzanne Rudzinski".

Suzanne Rudzinski, Director
Office of Resource Conservation and Recovery

References: IPPC Enviro-Fuelcubes® sample data (Monthly QA or sampled by others); Traditional Fuel and Key Derivatives, February 7, 2011

Component	Enviro-Fuelcubes®				Coal		Bituminous Coke		#5 Oil		#6 Oil		Petroleum Coke		Wood	
	Monthly Composite Samples, unless otherwise noted				Data Source: Table 2-1		Data Source: Table 2-2 (Higher of Bituminous or Coke Breeze Selected)		Source: Tables 3-1, 3-2, 3-3		Source: Tables 3-1, 3-2, 3-3		Source: Table 3-4		Data Source: Tables 3-1, 3-2, 3-3	
	Date Range	N	Average	Standard Deviation	Notes	Value	Notes	Value	Notes	Value	Notes	Value	Notes	Value	Notes	Value
Volatiles (%)	9/06-11/09	38	84	1	1,2,3	37.8	2-2	2.3					3-4	11	5-2, 2	76
Ash (%)	9/06-11/09	38	8	1	1,2,3	9.4	2-2	11					3-4	1.2	5-2, 1	39
Caloric Value (HHV, BTU/lb)	3/11-7/11	5	9233	326	5,6,8	7000-14040			3-1	18600	3-1	18200	3-4	14700-15700	Section 5	8000-9000
Elements (ppm)																
Carbon	9/06-11/09	38	489209	17569	1,2,3	783000	2-2	800000	No Data	7	870000	3-4	910000	5-1,5	530000	
Hydrogen	9/06-11/09	38	61833	4063	1,2,3	49200	2-2	3000	No Data	7	110000	3-4	33000	5-1,5	57000	
Oxygen	9/06-11/09	38	363840	17292	1,2,3	132000	2-2	5000	No Data	7	6000	3-4	31000	5-1,5	420000	
Nitrogen	9/06-11/09	38	1549	903	4,10	12700	2-2	3000	No Data	7	2250	3-4	8000	5-1,1,2	42800	
Sulfur	9/06-5/11	54	700	600	4,10	19700	2-2	11000	O7777	7	14620	3-4	99000	5-1,1,2	8800	
Chlorine	9/06-5/11	54	747	386	1,2,3	1440	No Data		480				No Data	5-1,4	1600	
Fluorine			Reported as Cl		1,2,3	160	No Data		5	220	5	220	No Data	5-1,1,2	490	
Bromine			No Data			No Data	No Data		No Data		No Data	No Data	No Data		No Data	
Silver	9/06-5/11	54	0.99	1.3			No Data		5	2.3	2,6	2.3	No Data		No Data	
Aluminum	9/06-5/11	54	17108	7040	1,2,3	8882	2-2	466	No Data		No Data	No Data	5-1,1,2	5620		
Arsenic	9/06-5/11	54	0.646	0.165	1,2,3	8	2-2	1.7	5	0.23	2,6	0.23	No Data	5-1,1,2	21	
Boron			No Data		1,2,3	47	No Data		No Data		No Data	No Data	No Data	5-1,4,6	37	
Barium	9/06-5/11	54	181	179	1,2,3	290	2-2	11.4	523	No Data	2,6	23	No Data	5-1,1,2	540	
Beryllium (Sampled by Fuel User)	10/10	9	<0.09	0	4,10	1.353	No Data		5	1.2	2,6	1.2	No Data	5-1,4,6	32	
Calcium	5/10-5/11	12	13310	5932	1,2,3	3750	No Data		No Data		No Data	No Data	No Data	5-1,1,2	52000	
Cadmium	9/06-5/11	54	0.107	0.193	4,10	1.131	No Data		5	1.2	2,6	1.2	No Data	5-1,4,6	8	
Cobalt			No Data		4,10	6.512	No Data		5	4.6	2,6	4.6	No Data	5-1,1,2	24	
Chromium	9/06-5/11	54	9.9	8.8	4,10	15.7	2-2	1.5	5	2.3	2,6	2.3	No Data	5-1,4,6	62	
Copper	9/06-5/11	54	75.6	61.3	1,2,3	20	2-2	20	1	0.321		No Data	No Data	5-1,1,2	400	
Iron	5/10-5/11	12	639	151	1,2,3	4313	2-2	2500	1	0.24		No Data	No Data	5-1,1,2	3600	
Mercury	9/06-5/11	54	0.013	0.022	1,2,3	2	2-2	0.034	5	0.25	2,6	0.25	No Data	5-1,1,2	2	
Potassium			No Data		1,2,3	1686	No Data		No Data		No Data	No Data	No Data	5-1,1,2	7300	
Magnesium	3/10-3/11	11	417	147	1,2,3	1150	No Data		No Data		No Data	No Data	No Data	5-1,1,2	6100	
Manganese	12/09	1	19		1,2,3	132	2-2	10.1	5	1.2		No Data	No Data	5-1,4,6	5425	
Molybdenum	12/09	1	<1		1,2,3	1.8	No Data		1	0.117		No Data	No Data	5-1,1,2	25	
Sodium			N/S		1,2,3	723	No Data		No Data		No Data	No Data	No Data	5-1,1,2	3600	
Nickel	2/10-4/11	11	1.3	2.3	4,10	15.4	No Data		2,6	106	2,6	106	No Data	5-1,4,6	51	
Phosphorous			No Data		4,10	162	No Data		No Data		No Data	No Data	No Data	5-1,4,6	208	
Lead	9/06-5/11	52	10.6	11.5	1,2,3	14	2-2	0.74	5	57	2,6	57	No Data	5-1,4,6	38	
Antimony (Collected by Fuel User)	12/09	1	<1		4,10	11.1	No Data		2,6	12	2,6	12	No Data	5-1,4,6	0.375	
Selenium	9/06-5/11	54	0.070	0.119	4,10	2.2	2-2	0.56	2,6	0.23	2,6	0.23	No Data	5-1,4,6	66	
Silicon	6/10-5/11	11	7924	5749	1,2,3	18950	No Data		No Data		No Data	No Data	No Data	5-1,1,2	48000	
Tin (Collected by Fuel User)	12/09	1	<1		1,2,3	1.2	No Data		No Data		No Data	No Data	No Data	5-1,1,2	10	
Strontium			No Data		1,2,3	95	No Data		No Data		No Data	No Data	No Data	5-1,1,2	49	
Thallium			No Data				No Data		2,6	23	2,6	23	No Data		No Data	
Tellurium			No Data			No Data	No Data		No Data		No Data	No Data	No Data	5-1,1,2	20	
Titanium			No Data		1,2,3	450	No Data		No Data		No Data	No Data	No Data	5-1,1,2	210	
Vanadium			No Data		1,2,3	17	No Data		1	152		No Data	No Data	5-1,1,2	23	
Zinc	9/06-5/11	54	77.7	45.5	1,2,3	15	2-2	5.8	1	1.73		No Data	No Data	5-1,1,2	303	
Ash Composition (%)																
Silicon Dioxide	2/08	1	21.58		5-8	20-60		No Data		No Data		No Data	3-4	10	5-2	39
Aluminum Oxide	2/08	1	43.8		5-8	10-35		No Data		No Data		No Data	3-4	6.9	5-2	14
Ferric Oxide	2/08	1	4.76		5-8	5-35		No Data		No Data		No Data	3-4	5.3	5-2	6.4
Calcium Oxide	2/08	1	17.2		5-8	1-20		No Data		No Data		No Data	3-4	2.2	5-2	6.4
Nickel Oxide			No Data			No Data		No Data		No Data		No Data	3-4	12		No Data
Vanadium Pentoxide			No Data			No Data		No Data		No Data		No Data	3-4	58		No Data
Sodium Oxide			No Data			No Data		No Data		No Data		No Data			5-2	13
Mixed Oxides			No Data		5-8	Trace		No Data		No Data		No Data	No Data			No Data
Trace Organics																
Benzene	12/09	1	ND		5-8	5-38		No Data		No Data		No Data	No Data		No Data	No Data
Toluene	12/09	1	0.195		5-8	9-56		No Data		No Data		No Data	No Data		No Data	No Data
Organic Compounds																
Information below collected by fuel user																
Naphthalene	12/09	1	ND			No Data		No Data	3	3500	3	3500	No Data		No Data	No Data
C1-Naphthalene			No Data			No Data		No Data	1,2	4087		No Data	No Data		No Data	No Data
C2-Naphthalene			No Data			No Data		No Data	1,2	4865		No Data	No Data		No Data	No Data
C3-Naphthalene			No Data			No Data		No Data	1,2	4794		No Data	No Data		No Data	No Data
C4-Naphthalene			No Data			No Data		No Data	1,2	2688		No Data	No Data		No Data	No Data
Biphenyl			No Data			No Data		No Data	1,2	3.5		No Data	No Data		No Data	No Data
Acenaphthylene			No Data			No Data		No Data	1,2	4.1		No Data	No Data		No Data	No Data
Acenaphthene	12/09	1	ND			No Data		No Data	1,2	111		No Data	No Data		No Data	No Data
Fluorene	12/09	1	ND			No Data		No Data	1,2	216	3	220	No Data		No Data	No Data
C1-Fluorene			No Data			No Data		No Data	1,2	659		No Data	No Data		No Data	No Data
C2-Fluorene			No Data			No Data		No Data	1,2	1277		No Data	No Data		No Data	No Data
C3-Fluorene			No Data			No Data		No Data	1,2	1244		No Data	No Data		No Data	No Data
Anthracene	12/09	1	ND			No Data		No Data	1,2	96		No Data	No Data		No Data	No Data
Phenanthrenes	12/09	1	ND			No Data		No Data	1,2	778	1	4824	No Data		No Data	No Data
C1-Phenanthrene/anthracene			No Data			No Data		No Data	1,2	2116		No Data	No Data		No Data	No Data
C2-Phenanthrene/anthracene			No Data			No Data		No Data	1,2	2717		No Data	No Data		No Data	No Data
C3-Phenanthrene/anthracene			No Data			No Data		No Data	1,2	1923		No Data	No Data		No Data	No Data
C4-Phenanthrene/anthracene			No Data			No Data		No Data	1,2	820		No Data	No Data		No Data	No Data
Dibenzothiophene			No Data			No Data		No Data	1,2	26		No Data	No Data		No Data	No Data
C1-Dibenzothiophene			No Data			No Data		No Data	1,2	1396		No Data	No Data		No Data	No Data
C2-Dibenzothiophene			No Data			No Data		No Data	1,2	2156		No Data	No Data		No Data	No Data
C3-Dibenzothiophene			No Data			No Data		No Data	1,2	1976		No Data	No Data		No Data	No Data
Fluoranthene	12/09	1	ND			No Data		No Data	1,2	32	1	240	No Data		No Data	No Data
Pyrene	12/09	1	ND			No Data		No Data	1,2	178	1	23	No Data		No Data	No Data
C1-Fluorothene/Pyrene			No Data			No Data		No Data	1,2	566		No Data	No Data		No Data	No Data
Benzo(a)anthracene	12/09	1	ND			No Data		No Data	1,2	41	3	1900	No Data		No Data	No Data
Chrysene	12/09	1	ND			No Data		No Data	1,2	74	1	1964	No Data		No Data	No Data
C1-Chrysene			No Data			No Data		No Data	1,2	312		No Data	No Data		No Data	No Data
C2-Chrysene			No Data			No Data		No Data	1,2	371		No Data	No Data		No Data	No Data
C3-Chrysene			No Data			No Data		No Data	1,2	30		No Data	No Data		No Data	No Data
C4-Chrysene			No Data			No Data		No Data	1,2	20		No Data	No Data		No Data	No Data

[illegible]

* Lignin results for IPPC Enviro-Fuelcubes® is a combination of lignin and polymers of petroleum origin. They are inseparable in the extraction. Refer to method sheet below for more information.

