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WASTE-DERIVED FUELS AT IRON AND STEEL MILLS AS PRODUCTS OR WASTE FUELS, INFORMATION REQUIRED

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JAN 24 1986

Mr. Earle F. Young, Jr.
Vice President
Energy and Environment
American Iron and Steel Institute
1000 16th Street, N.W.
Washington, D.C. 20036

Dear Mr. Young:

This is a follow up to our December 13, 1985 meeting when we discussed the information EPA would need in order to consider classifying the waste-derived fuels produced at iron and steel mills as products rather than exempt hazardous waste fuels.

Our decision as to whether coke or coal tar produced from the recycling of a listed hazardous waste, coal tar decanter sludge, should be classified as a product rather than a waste-derived fuel turns on whether the recycling significantly affects to composition and, thus, the risk that coke or coal tar may pose during transportation, storage, or use as fuel. Specifically, we must determine whether hazardous constituents in the recycled decanter sludge significantly increase levels of those constituents in the coke or coal tar.

To determine whether levels of toxic organics or toxic metals in the coke and coal tar are significantly increased by recycling the sludge, we need triplicate analyses of the levels of particular metals and organics (see the enclosed table) in the coke and coal tar materials produced with and without sludge recycling.

The metals listed in the enclosed table were selected for evaluation because they are present in coal, and either cause carcinogenic or other nonthreshold health effects, or are fairly volatile, or both.

The detection limits suggested are about an order of magnitude lower than the average levels of these metals in coal. Our concern with metals levels in the coke is that some of the more volatile metals may become concentrated in the sludge and could conceivably be reintroduced into the coker in a less volatile form, thus increasing levels in the coke product. Similarily, if volatile metals are concentrated in the sludge, mixing the sludge with the coal tar could increase metals levels.

The oraganics were selected for evaluation because they are typically produced from thermal treatment of coal, they are less volatile than phenol and napthalene already shown not to be carried over into the coke at significant levels, and they are representative of polyaromatic molecules (POMs), many of which are considered to be carcinogens. Our concern with organics in the coke is that some of the less volatile, difficult to crack POMs that are likely to be found in the sludge could conceivable be carried over into the coke product. Similarily, if POMs concentrate in the sludge, mixing the sludge with the coal tar could increase POM levels.

If you have questions, please contact Matt Straus or Bob Holloway.

Sincerely

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Steven Silverman
Attorney
Office of General Counsel

Enclosure

ANALYTICAL INFORMATION

(See SW-846 for description of methods.)

Metals	Method*	Detection Limit
Arsenic	6010, 7060, 7061	1 ppm
Cadmium	6010, 7130, 7131	0.1 ppm
Chromium	6010, 7190, 7191	1 ppm
Lead	6010, 7420, 7421	1 ppm
Mercury	6010, 7471	0.1 ppm

* Use acid degestion method 3050 for preparation of coal tar samples.

Organics	Method	Detection Limit
Anthracene/Phenanthrene	8100	1 ppm
Benzo(a)anthracene/ chrysene	8100	1 ppm
Benzo(a)pyrene	8100	1 ppm
Fluoranthene	8100	1 ppm
Pyrene	8100	1 ppm
Napthalene+	8100	1 ppm
Phenol+	8040	1 ppm

+ Napthalene and phenol levels in the coke as well as the coal tar should be determined for comparison with previous data.