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May 8, 1974

The Honorable William E. Simon
Secretary
Department of the Treasury
Fifteenth Street and Pennsylvania Avenue
Washington, DC 20220

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Dear Mr. Secretary:

We greatly appreciated the opportunity to meet with you on October 23, 1973 for the purpose of determining the position of the Department of the Treasury with respect to whether facilities at oil refineries designed to remove sulfur from fuels intended to be sold for combustion by others away from the refinery come within the definition of air pollution control facilities under Section 103(c)(4)(F) of the Internal Revenue Code of 1954 and thereby qualify for financing by the use of tax-exempt bonds. We were encouraged to learn that the Department of the Treasury has adopted a policy of providing economic incentives for desulfurization of fuels prior to combustion.

We understand that with respect to crude oil produced outside this country, the incentive would be provided by removing the import fee if desulfurization is accomplished by a domestic refiner. We understood you to say that this was a more appropriate incentive than tax-exempt bond financing of the desulfurization facilities. Also we understood you to say that the Department has not adopted a policy as to an appropriate incentive for desulfurization of domestic fuels. Obviously, the incentive for imported oil does not lend itself as an incentive for desulfurization of domestic crude oil. Although a substantial portion of domestic crude oil is "sweet," that is, contains less than 0.5 percent sulfur, and therefore does not generally require desulfurization, there is a substantial quantity of domestic crude oil which does require desulfurization. We believe that an appropriate incentive could be provided by the approval of the Department of the Treasury of the use of tax-exempt revenue bonds for financing the desulfurization equipment. Further, we believe that the use of tax-exempt revenue bonds as an incentive for desulfurization of crude oil would be substantially less expensive to the Department of the Treasury than the removal of the import fee. For example, the revenue loss from removal of the import fee would be approximately \$3.99 million per annum, based on the 1975 import fee of

21¢ per barrel, for a refiner with a corporate tax rate of 48% and a refinery volume of 100,000 barrels per day, whereas the loss of revenue from an issue of tax-exempt bonds to finance facilities designed to desulfurize an equal quantity of oil would be approximately \$2.3 million per annum. The assumptions and calculations for this conclusion are set out in the Appendix to this letter.

That a substantial volume of domestic crude oil requires desulfurization can be seen from the following table summarizing the sulfur content of domestic "lower 48" crude oil produced in 1969.

<u>Annual Production</u> (Million Barrels/Year)	<u>Average Daily Production</u> (Million Barrels/Day)	<u>Sulfur Range</u> (Percent)
2,243	6.1	0 - 0.5
362	1.	0.51 - 1.0
337	0.9	1.01 - 2.0
<u>247</u>	<u>.7</u>	above 2
3,189	8.7	

(Source: U. S. Bureau of Mines)

In addition, Alaskan North Slope crude oil has been reported to average 1.1 percent sulfur. It should also be noted that the sulfur level of undesulfurized fuel oil produced from a particular crude oil will have a somewhat higher sulfur content than the crude oil from which it is derived. Generally, it is not necessary to desulfurize oil which has a sulfur content of 0.5 percent or below in order that the products of combustion meet air quality specifications. From the above table, on this basis, 70 percent of the domestic crude oil produced in 1969 would not require desulfurization. In order to meet increasingly stringent air pollution specifications, however, that is, to meet standards for emission of oxides of sulfur (the combustion products of sulfur containing oil), it would generally be agreed that the 18 percent of domestic oil with 1 percent sulfur content or greater and the 12 percent of domestic oil with the 0.5 to 1 percent sulfur would require some degree of desulfurization.

For illustration purposes, we have provided an estimate below of the capital investment necessary to provide 0.3 percent sulfur fuel oil from the appropriate heavy fractions (650°F+ material) of Alaskan North Slope crude oil. A level of 0.3 percent sulfur is a "maximum" desulfurization below which it is not economic to desulfurize further. Although a 0.3 percent sulfur level is perhaps lower than would be

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necessary to meet air quality specifications in some locations, the required investment in new refinery facilities in 1974 dollars to desulfurize 100,000 barrels/day (b/d) of 650°F + material from North Slope crude oil to 0.3 percent sulfur content would be \$130 million. Since the 650°F + material constitutes 50% of North Slope crude, the investment would be \$65 million per 100,000 b/d of North Slope crude oil to yield 0.3 percent sulfur content fuel oil from the heavier portion of the crude oil. Some of the Alaskan North Slope crude oil will be processed in existing refineries and some of the appropriate heavy fractions will not be processed to fuel oil but will, instead, be converted to other products. Were all of the 650°F + fraction of North Slope crude oil processed to 0.3 percent sulfur fuel oil in new facilities, however, the investment required at the 1.2 million b/d level in 1977 or 1978 would be \$780 million and, at the 2 million b/d level in 1980, would be \$1.3 billion.

A policy permitting tax-exempt financing of facilities to desulfurize domestic fuels will be less costly in terms of lost revenues than that adopted with respect to foreign crude oil. Moreover, our counsel advises that there is nothing in either the Internal Revenue Code or the Regulations which would prevent the Department from including desulfurization facilities as pollution control facilities.

We would like to present the additional thesis that the policy suggested for desulfurization of domestic crude oil be consistent with a policy for desulfurization of other domestic hydrocarbons- coal, shale oil, tar sands, and natural gas. Investment for desulfurization of coal prior to combustion or conversion to liquid fuels or to a high or low - BTU gas will have the same objective as equipment for removal of sulfur oxides from the combustion products of coal or the liquid fuels or gas produced from coal and as equipment for desulfurization of crude oil. For example, we have recently estimated that the investment for desulfurization in a 250 million cubic foot per day coal gasification plant to make pipeline quality gas from coal using the Lurgi process would be approximately \$20 million out of a total plant cost of \$400 million. An additional investment of approximately \$25 million out of the \$400 million total would be required to produce a clean fuel gas for use at the plant.

Thank you for your consideration of our presentation. We would be most pleased to discuss the subject with you and other officials of the Department of the Treasury at your convenience.

Sincerely,

Allan M. Benton