in characteristic waste are meeting new treatment standards and costs associated with permit modifications will be based upon an average, one-time testing cost and an Information Collection Request, respectively.

c. Economic Impact Methodology. The economic effects of today's proposed rule are defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation (i.e., baseline conditions).

The Agency used (1) historic average capital expenditures for each industry, (2) historic average operating expenditures for each industry, (3) historic revenues, and (4) historic average pollution abatement and control expenditures (PACE) to determine the economic impacts. However, the Agency was unable to examine the impacts on a facility-specific basis due to lack of data. Therefore, the impacts are assessed on an industry-specific basis.

d. Benefits Methodology. The approach for estimating benefits associated with today's rule involves three components: (i) estimation of pollutant loadings reductions, (ii) estimation of reductions in exceedances of health-based levels, and, (iii) qualitative description of the potential benefits. The benefits assessment is based upon the waste quantity and concentration data collected for the cost analysis. This incremental assessment focuses upon reductions in toxic concentrations at the point of discharge and does not consider any potential benefits resulting from reductions in air emissions or impacts on impoundment leaks and sludges which may occur as part of treating wastes to comply with the LDRs.

EPA has not conducted an assessment of the benefits related to the effects of the proposed rule on newly listed wastes. These benefits depend on the incremental risk reductions that may result from treatment of the wastes prior to disposal at a subtitle C facility. EPA data indicate that between 100,000 and 118,000 tons of spent aluminum potliners are generated annually. Improper management of these wastes has caused many serious past damage incidents. (See listing Background Document for K088). However, data are limited with regard to current management practices and risk levels for these wastes. Therefore, EPA is not yet able to evaluate the benefits resulting under the proposed rule for these wastes. Because the quantity of waste is very small, benefits for newly

listed organobromine and carbamate wastes are expected to be minimal.

(i) Estimation of Pollutant Loadings Reductions. An incremental approach was used to estimate reductions in pollutant loadings. For the baseline scenario, contaminant concentrations were based upon data or estimates of current effluent discharge concentration levels. For the post-regulatory scenario, concentration levels were assumed to equal UTS levels.

(ii) Estimation of Reductions in Exceedances of Health-Based Levels. The methods used for evaluating the benefits associated with cancer and noncancer risk reductions resulting from the proposed rule entail comparing constituent concentration levels to health-based standards to evaluate whether implementation of the proposed rule reduces concentration levels below levels that pose risk to human health.

To estimate benefits from cancer risk reductions resulting from the proposed rule, a simple screening analysis was performed. This analysis compared contaminant concentrations for the baseline and post-regulatory scenario to health-based levels for carcinogens. Further analysis may be undertaken to quantify benefits associated with facility/ wastestream combinations identified in the contaminant concentration comparisons.

Benefits associated with reductions in non-cancer exceedances are estimated based upon comparisons of contaminant concentration levels in effluent discharges of the affected wastestreams to the reference health levels. These benefits are expressed in terms of the number of exceedances of health-based levels under the baseline scenario compared to the number of exceedances under the proposed rule.

(iii) Qualitative Description of the Potential Benefits. A qualitative assessment of potential benefits likely to result from the proposed rule is used where data are limited. The Agency acknowledges limited data availability in developing waste volumes affected, constituents, concentrations, cost estimates, economic impacts, and benefits estimates for the proposed LDR Phase III rulemaking. The Agency respectfully requests comment from industry regarding constituents, concentrations, waste volumes, and current management practices.

## 2. Results

a. Volume Results. The Agency has estimated the volumes of formerly characteristic wastes potentially affected by today's rule to total in the range of 33.5 to 500 million tons. The Agency

requests comment on waste volumes affected by the proposed LDR Phase III rule. For newly listed wastes, the analyses supporting the listing determination showed about 4,500 tons of carbamate wastes, less than 100 tons of organobromine wastes, and 100,000 to 118,000 tons of spent aluminum potliners are potentially affected by this rule.

b. Cost Results. For characteristic wastes, the potential cost impacts of this rule depend on whether facilities current wastewater treatment systems will meet the UTS levels or if additional treatment will be required. If current treatments are adequate, facilities will only incur administrative costs to have their permits revised. A rough estimate would be that there would be one-time incremental costs of \$0.9 to \$2.9 million for all incrementally impacted facilities. However, at the high end, if current wastewater treatment systems need to be augmented with additional treatment steps, the incremental compliance costs could be as high as \$1 million per affected facility. The Agency does not have adequate data to estimate how many, if any, facilities may require modification to their treatment facilities. The Agency requests comment and data on how often additional treatment may be required.

For newly listed wastes, the costs are substantially higher and will be incurred each year. These costs range from approximately \$11.9 million to \$47.3 million and are attributable primarily to thermal treatment of spent aluminum potliner wastes (K088). The Agency requests comment on these estimates.

c. Economic Impact Results. The Agency has estimated the economic impacts of today's rule to represent less than one percent of historic pollution control and operating costs for the organic chemical and petroleum refining industries. However, for those facilities that may need to treat to UTS to comply with today's rule, costs could be more significant. The estimated compliance costs for treating newly listed spent aluminum potliners represents 40 percent of pollution control operating costs for aluminum reducers; however, treatment costs represent only one percent of total historic operating costs. The Agency requests comment on anticipated economic impacts resulting from the proposed LDR Phase III rule.

d. Benefit Estimate Results. The Agency has estimated the benefits associated with today's rule to be small. Assuming facilities comply with the proposed rule by treating their affected wastestreams, loadings reductions