INSTRUCTIONS FOR FORM 6
BEST AVAILABLE CONTROL TECHNOLOGY (BACT)
ORCAA 4/10/95

BACT by definition is the most effective control option which is technically feasible considering economic, energy, and other environmental impacts. Control options can be eliminated as BACT on a basis of technical, economic, energy, or environmental considerations. The following procedure is designed to facilitate a BACT analysis in cookbook fashion. The following analysis should be performed for each pollutant requiring BACT.

STEP 1: IDENTIFY AVAILABLE CONTROL TECHNOLOGIES: For the source, emissions unit, activity, or process requiring BACT, identify and list all "available" emissions control options for the pollutant in question. Available control options are those air pollution control technologies and techniques with a practical potential for application to the source, emissions unit, activity, or process. In general, any control option in commercial use in the U.S. at the time the analysis is performed should be included on the list of available control options. For information on available control options, you may inquire with ORCAA at (360) 438-8768 ex108. However, the best resource for obtaining listings of control options in use for a particular source type is the U.S. EPA BACT/LAER Information Systems Clearinghouse (BLIS). BLIS is an electronic bulletin board system that can be accessed free of charge using a personal computer/modem link. To link up with BLIS dial (919) 541-5742 . For more information on how to access BLIS, call the BLIS systems operator at (919) 541-2736.

STEP 2: ELIMINATE TECHNICALLY INFEASIBLE OPTIONS: Considering site-specific factors and constraints, remove from the list compiled in STEP 1 all technically infeasible control options. A control option can be considered as technically infeasible if technical difficulties such as physical, chemical, or engineering constraints would preclude the successful use of the control option in the particular application in question. For all control options eliminated, demonstration that a control option is technically infeasible should be clearly documented in the BACT Analysis and included with the BACT submittal.

STEP 3: RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS: Rank and list in attached table all remaining control options in order of control effectiveness with the most effective control alternative at the top of the list.

STEP 4: ENERGY, ENVIRONMENTAL, AND ECONOMIC CONSIDERATIONS: Using the "Top Down" procedure specified below, control options may be eliminated as BACT candidates on the basis of energy, environmental, and economic impacts of the option.

Energy impacts include but are not limited to energy efficiency impacts, fuel cycle efficiency considerations, and fuel availability. Environmental impacts include but are not limited to ground water and water impacts, solid and hazardous waste impacts, and air quality impacts from increases in emissions of other air pollutants that result from implementing the control option. Economic impacts include the sum of up-front capital cost and annual operation and maintenance costs of implementing the control option.

A control option may be eliminated as a BACT candidate on grounds of significant energy, environmental, or economic impacts. Rationale for eliminating a control option should be well documented and included in the analysis. Economic impacts should be evaluated by comparing the cost effectiveness of the control option with generally acceptable cost effectiveness ranges for control of the particular pollutant in question. Inquire with OAPCA on the generally acceptable ranges of cost effectiveness.

STEP 4, TOP DOWN PROCEDURE:

STEP 4.A: Start with the most effective control option from the list compiled in STEP 3.

STEP 4.B: Provide the information specified in items a through g below for the control option being considered. The attached table is provided for convenience of organizing this information.

a. Control Efficiency: Enter the percent of the pollutant removed by the control option. Control efficiency should be calculated based on the control achieved from the control option in question only.

b. Potential Emissions: Potential emissions in pounds of pollutant per hour and tons of pollutant per year should be calculated based on the maximum potential to emit rather than actual emissions. Potential emissions represent the maximum capacity of a source, emissions unit, process, or activity to emit an air pollutant under physical constraints considering air pollutant emission controls and applicable regulatory limits. Operational factors such as hours of operation or partial loading which influence emissions may be included as constraints which limit the potential to emit provided that the project proponent agrees to incorporate these constraints in enforceable regulatory compliance limits.

c. Expected Emissions: Expected emissions in tons of pollutant per year should be calculated considering expected operational considerations such as down time for maintenance, periods of partial load, capacity factors, etc..

d. Annual Expected Emission Reduction: Using the expected emission rate computed in "c" and control efficiency entered in "a", compute the expected annual emission reduction in tons per year.

e. Annual Cost of Control Option: Compute the annual cost of the control option using standard economic principles. Annual cost should include both the initial capital costs as well as operation and maintenance costs. All costs should be amortized over the expected life of the control option (default is ten years). Include in the analysis the calculations, assumptions, and economic parameters used in the calculations.

f. Cost Effectiveness: Cost effectiveness is the ratio of the annual cost computed in "e" to the annual expected emission reduction computed in "d".

g. Other Considerations: List all other media impacts (water, solid waste, etc.) and energy impacts which are associated with the control option.

STEP 4.C: If there are no outstanding issues regarding energy, environmental and economic impacts, the analysis is ended and this control option is proposed as BACT.

STEP 4.D: In the event that the control option is determined to be inappropriate due to energy, environmental, or economic impacts, this control option is eliminated and the analysis proceeds to the next control option on the list. Rationale for elimination of a control option on grounds of significant energy, environmental or economic impacts should be well documented and included with the analysis.

STEP 4.E: Go to STEP 4.B and proceed with the analysis for the next control option on the list.

STEP 5: DOCUMENTATION: Include with the analysis all information, calculations, assumptions, and data used in making the BACT determination.

FORM 6
BACT ANALYSIS TABLE

CONTROL OPTIONS	CONTROL EFFICIENCY % removal	POTENTIAL EMISSIONS lbs/hr	EXPECTED EMISSIONS tons/yr	ANNUAL EMISSION REDUCTIONS tons	ANNUAL COST $	COST EFFECTIVENESS $/ton	ENERGY, ENVIRONMENTAL ECONOMIC IMPACTS (list)
1.							
2.							
3.							
4.							
5.							
6.							