34. COMPETITIVE ACTIVATED CARBON ADSORPTION OF SELECTED ORGANIC PRIORITY POLLUTANTS IN AN INDUSTRIAL WASTEWATER. J.K. Smith, S.C. Lynch and C.J. Upton. Gulf South Research Institute, Physical and Engineering Sciences Division, New Orleans, Louisiana, 70146 and F. Dryden, Walk Haydel & Associates, Inc., New Orleans, Louisiana, 70130.

Activated carbon and XAD-4 resin have been evaluated for removal efficacy of five priority pollutants from a complex, highly concentrated waste stream. In equilibrium and laboratory bench scale dynamic studies the competitive adsorption of chlorobenzene, dichlorobenzene, nitrobenzene, 1,6-dinitrotoluene and phenol have been evaluated in an industrial waste matrix where priority pollutants account for less than 20% of the total organic load. The activated carbon studies reveal that the chlorinated benzenes are not removed as efficiently as the nitrated aromatic compounds. Thermal and low pressure steam regeneration of the carbon does not significantly alter the adsorption pattern. Performance of the XAD resin is compared to that of the carbon for selective removal of the listed compounds.

35. REMOVAL OF PCB'S FROM WATER BY ACTIVATED CARBON IN THE PRESENCE OF HUMIC ACIDS. M. Pirbazari, and W.J. Weber, Jr. Environmental and Water Resources Engineering, Engineering Building 1-A, University of Michigan, Ann Arbor, Mi. 48109

The introduction of PCB's to the aquatic environment is multifaceted and extensive. The toxicity of PCB compounds places them high on the list of environmentally important pollutants. Activated carbon has demonstrated potential for removal of such compounds. The study described in this paper focuses on quantification of the effectiveness of carbon for removing PCB's from water supplies in the presence of humic acids. The paper presents a detailed evaluation and characterization of adsorption parameters in single-component and multi-component systems. Further, the paper discusses the results of investigations of different experimental conditions and types of reactors that can be used in conjunction with PCB adsorption studies.

36. REMOVAL OF SPECIFIC ORGANIC CONTAMINANTS FROM WASTEWATER BY ACTIVATED CARBON ADSORPTION. B.A. Beaudet,[1] E.M. Keller,[1] L.J. Bilello,[2] and R.J. Turner[3]. [1]Environmental Science and Engineering, Inc., P.O. Box 13454, Gainesville, FL 32604, [2]ICI Americas, Inc., Wilmington, DE. 19897; [3]U.S. Environmental Protection Agency, Industrial Environmental Research Laboratory, Cincinnati, OH.

Current legislation and Federal court decisions, including the 1977 Clean Water Act (PL 96-217) and the Flannery Toxic Pollutant Settlement Agreement, are resulting in an emphasis upon the control and treatment of specific organic compounds (priority pollutants) in industrial wastewater. Although granular activated carbon (GAC) has been known for decades to be effective in removing specific organics from wastewater, very little information is available on the performance of GAC for removal of priority pollutants in real world waste streams. This paper presents the results of a two-year study conducted for the U.S. Environmental Protection Agency Industrial Environmental Research Laboratory. The study involved the operation of specially designed, pilot-scale GAC column adsorption systems at four organic chemical plants in the United States.

WEDNESDAY MORNING - SECTION B - SYMPOSIUM ON VIRUS REMOVAL IN WASTEWATER TREATMENT - (CONTINUED) - M. M. Reddy, Presiding

39. THE RELATIONSHIP BETWEEN POLIOVIRUS ADSORPTION AND SOIL PROPERTIES. D. H. Toyer, G. V. Fuhs, M. M. Reddy and R. S. Moore. New York State Department of Health, Division of Laboratories and Research, Empire State Plaza, Albany, New York, 12201.

The adsorption of radiolabelled poliovirus type 2 by a wide range of soils, clay minerals, and finely ground rocks from suspension in a synthetic freshwater was studied. Batch adsorption experiments were performed with about 10^9 to 10^{10} infectious particles per gram substrate. The amount of virus adsorbed varied from approximately 60% to 99.99%; however, most materials adsorbed between 95 and 99.5% of added virus.

A number of soil properties, such as pH, surface area, selected elemental composition, oxalate-, hydroxylamine- and nitric acid-extractable components, organic content, ability to adsorb polyelectrolytes, and electrophoretic mobility were determined. The

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