



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

AUG 24 1983

~~CONFIDENTIAL~~
FOR INFORMATION ONLY

This is in response to your July 16, 1983 letter to Administrator Ruckelshaus expressing your concern over two projects planned for the Orlando area. The first is the City of Orlando's proposal to inject treated sewage into the Floridan Aquifer. The second is a coal-fired power plant to be built by Orlando Utilities. Since the former project may impact water quality and the latter air quality, they will be addressed individually.

Injection wells fall within the purview of the Underground Injection Control (UIC) program established under the Safe Drinking Water Act. This past February, the U.S. Environmental Protection Agency (EPA), delegated primary enforcement responsibility of the UIC program to the Florida Department of Environmental Regulation (DER). Thus, EPA no longer has a direct role in issuing injection well permits in Florida. However, EPA is represented on the Technical Advisory Committee reviewing this project and EPA staff will have an opportunity to review the draft permit if the project proceeds to that stage.

As you have surmised, the Florida DER has granted conceptual approval to the City of Orlando's plan to inject 7.5 MGD of highly treated sewage into the Floridan Aquifer. The treatment proposed before injection of the effluent represents the state of the art technology for removal of various classes of contaminants of public health significance. The treatment will incorporate process redundancy features to insure consistent and reliable removal of these contaminants not only to meet the primary and secondary drinking water standards but to remove synthetic organic chemicals.

A comprehensive monitoring program is being designed to monitor the quality of the final effluent as well as that of the receiving aquifer around the injection zone. Parameters to be monitored include those in the drinking water standards and all priority pollutants. In addition to chemical monitoring, viral assays and toxicity bioassays will be conducted on the effluent.

The 1983 Florida Legislature has mandated (see enclosed Senate Bill 576) that this artificial recharge project undergo a two-year testing period during which no injection is to take place. The law further requires a peer review of data by national authorities such as EPA and the National Academy of Sciences.

Even if the testing program demonstrates that the treatment system can consistently meet the effluent standards established by the State, questions will remain about possible risks to human health from long-term use of groundwater recharged by treated sewage. In consideration of this uncertainty, it may be necessary to restrict withdrawals from the Floridan Aquifer within the recharge project's zone of influence and provide affected parties with an alternative source of water.

At the present time, the Florida DER has primary responsibility for conducting the initial review of any source applying for an air permit. When an application for an air permit is submitted to the State, the Florida DER will review the application and determine if the source is subject to the Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), or National Emission Standards for Hazardous Air Pollutants (NESHAPS) regulations. If the source is subject to PSD requirements, the Florida DER will review the permit application, prepare the preliminary determination and the draft construction permit. EPA reviews the preliminary determination as well as the draft permit prepared by the Florida DER to insure that all applicable PSD requirements are met to prevent the violation of any ambient air quality standards. The preliminary determination and draft permit are subject to public comment. After the public comment period, the State prepares the final determination and construction permit and forwards them to EPA. EPA reviews these documents and issues a PSD permit, thereby granting a company authority to construct. For those sources subject to NSPS and NESHAPS regulations, EPA has delegated authority to the Florida DER to issue construction permits. EPA is in the process of approving the Florida DER PSD regulations which will enable the State to issue PSD permits instead of EPA.

The Orlando Utilities Commission has applied for and has received a Federal PSD and a State of Florida construction permit to construct two 460 Megawatt coal-fired electricity generating units to be known as the Curtis H. Stanton Energy Center. The Center is to be located 10 miles southeast of Orlando. Unit 1 startup is to be in November of 1986 and Unit 2 startup is to be in January of 1994. The heat input for each unit is approximately 172 tons per hour of coal.

The public notice regarding the construction of the Curtis H. Stanton Energy Center was published in the Sentinel Star on April 15, 1982. The Stanton Energy Center construction is subject to Federal PSD Regulations and NSPS. The study performed for the PSD construction permit (sulfur dioxide only) is as follows:

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AIR QUALITY IN MICROGRAMS PER CUBIC METER (ug/m³)

| <u>Time Periods Described in the Standards</u> | <u>Existing Dioxide Sulfur Levels</u> | <u>Stanton Addition to Sulfur Dioxide Level</u> | <u>Total Concentrations with Stanton Addition</u> | <u>National Primary* and Secondary** Ambient Air Quality Standards for Sulfur Dioxide</u> |
|--|---------------------------------------|---|---|---|
| 3 hours | 124 | 503 | 627 | 1300** |
| 24 hours | 44 | 91 | 135 | 365 |
| Annual | 14 | 5 | 19 | 80* |

The New Source Performance Standards for Electric Utility Steam Generating Units, for which construction is commenced after September 18, 1978 (Title 40 Code of Federal Regulations Part 60 Subpart D), require that sulfur dioxide emissions not exceed a maximum of 1.2 pounds per million BTU and that the limestone flue gas desulfurization devices reduce emissions by at least 90 per cent. In addition to the above, regulations require the flue gas desulfurization devices to be designed for 150 per cent of the flue gas capacity and require continuous monitoring of sulfur dioxide in the stack effluent.

The Curtis H. Stanton plant has satisfied all Federal and State mandates for construction of their electric utility station. Orlando Utilities will be required to perform extensive testing and monitoring of sulfur dioxide emissions upon startup and operation to ensure that permitted conditions of construction are met. The PSD permit was issued on June 10, 1982 and will expire on December 10, 1983 if construction does not commence by this date.

I hope the information provided fully addresses your concerns and clarifies this Agency's role in the projects discussed. Please contact me if I can be of further assistance.

Sincerely yours,

John A. Little, Deputy for

Charles R. Jeter
Regional Administrator

Enclosure

FOR INFORMATION ONLY

Acid Rain Monitoring In Orange County

Status Report

Introduction

Acidic precipitation is a major environmental concern in many regions of the United States, Canada, Northern Europe and Japan. It has caused measurable damage to aquatic ecosystems in Scandinavia, Eastern Canada, and the Northeastern United States. Acid rain has, by acidifying lakes, induced the extinction of fish, caused the breakdown of nutritional food webs, and reduced life in lakes to a few acid tolerant species. Acid rain, in addition, has the potential for damaging national monuments and buildings made of stone, for degrading natural terrestrial ecosystems, for impoverishing sensitive soils, and for causing damage to forest ecosystems. Precipitation, because of its unique scavenging or cleansing properties, is a useful indicator of ambient pollution levels and its analysis yields valuable data concerning inputs of both nutrients and toxic compounds to terrestrial and aquatic biota. The principal cause is the release of sulfur and nitrogen oxides by the burning of fossil fuels. The burning of coal appears to be the major contributor of sulfur and nitrogen oxides to the atmosphere. Currently there are no major contributors located in Orange County yet after six months of monitoring at seven locations by Pollution Control and one by the University of Central Florida, results have shown, as can be seen by the attached graphs, that pH levels measured at the 8 sites of 4.2-4.6 are approximately 10 times more acidic than clean unpolluted rain water of 5.5-5.6.

Monitoring Locations

The seven Orange County Pollution Control monitors were sited in such a way as to surround the proposed coal-fired Curtis H. Stanton Energy Center. These monitors are currently giving background data, in effect, a before and after comparison.

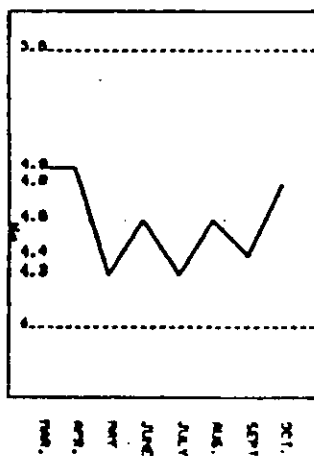
Sampling And Analysis

Samples from all monitoring sites are retrieved every Tuesday morning between 7:00 A.M. and 11:00 A.M. Volume, conductivity, pH alkalinity, acidity, nitrates, sulfate and ammonia are the parameters analyzed.

Dr. B. C. Madsen, U.C.F., has been monitoring acid rain since 1971, and is considered an expert in the field. The fact that Pollution Control's results are very close to his shows good quality control and sampling techniques.

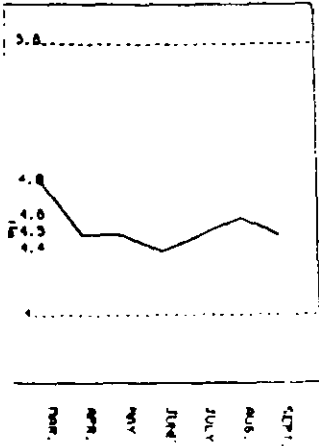
As shown on the graphs, the eight locations in Orange County follow the national trend of higher acidity during the summer months. In general, the pH of rain is usually lower in the summer than in the winter and is associated with the high summertime sulfate concentrations due primarily to the increased demand on the power industry. We expect the pH to rise during the fall and winter months.

CHRISTMAS ACID RAIN 1983



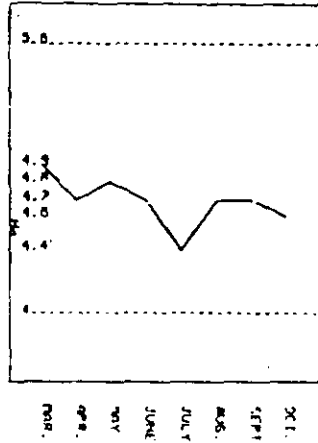
NOTE: SITE IS AT CHRISTMAS FIRE STATION. MONTHLY AVG. MONTHLY RAIN (PM) 3.0, POSSIBLY PARTIAL BELOW (PM) 4.0.

**LANDFILL
ACID RAIN
1983**



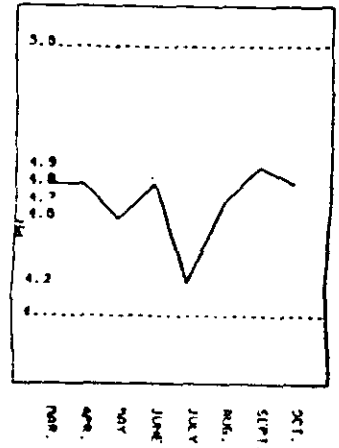
NOTE: SITE IS AT ORANGE COUNTY LANDFILL. MONTHLY AVERAGES. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL BELOW (PH=4.8).

**McCOY S.T.P.
ACID RAIN
1983**



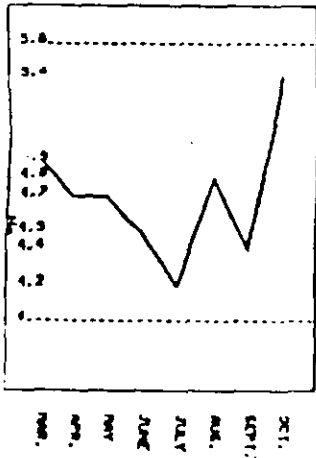
NOTE: SITE IS AT N.T.C. ANNEX. MONTHLY AVERAGES. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL (PH=4.8).

**CANE/MARSHA
ACID RAIN
1983**



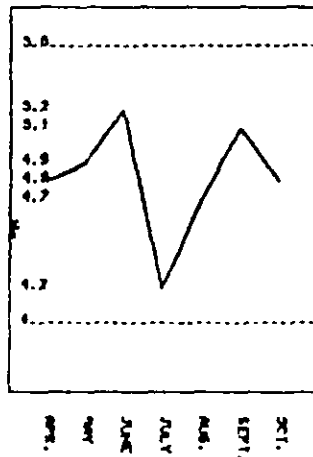
NOTE: SITE IS AT ORANGE COUNTY LAKE CA/MARSHA PARK. MONTHLY AVERAGES. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL (PH=4.8).

**MOSS PARK
ACID RAIN
1983**



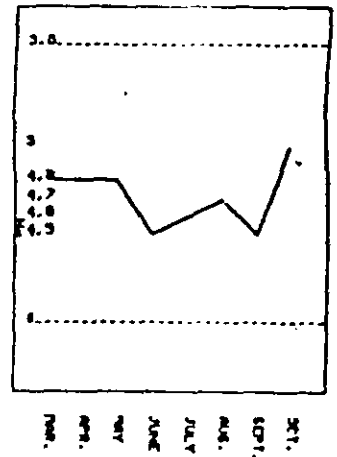
NOTE: SITE IS AT ORANGE COUNTY MOSS PARK. MONTHLY AVERAGES. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL (PH=4.8).

**MAR. RESERVE
ACID RAIN
1983**



NOTE: SITE IS MARJAN MARINE RESERVE, ORLANDO. MONTHLY AVERAGE. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL (PH=4.8).

**MAGNOLIA PK.
ACID RAIN
1983**



NOTE: SITE IS AT ORANGE COUNTY MAGNOLIA PARK. MONTHLY AVERAGES. NORMAL RAIN (PH=5.6), POSSIBLY HARMFUL BELOW (PH=4.8).