



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

MEMORANDUM

DATE: March 16, 2017

SUBJECT: Water Quality of the Lower Altamaha River

FROM: Franklin Baker, Senior Technical Advisor *FB*  
Water Quality Planning Branch

TO: Joanne Benante, Chief  
Water Quality Planning Branch

I have reviewed information regarding water quality in the lower Altamaha River. I find that the information suggests the lower Altamaha River, downstream of the Rayonier plant, is and has been impaired under the GAEPD water quality standards for color and odor.

EPA issued an information request letter, under Section 308 of the Clean Water Act dated September 29, 2016 and received the response from Rayonier on December 2, 2016. Rayonier provided copies of studies, analyses, and other information it had regarding its industrial process wastewater and water quality in the Altamaha River. Rayonier also included copies of reports and other information related to hearings on the permit renewal in 2016.

The 308 response included a study Rayonier did in July 2009 in response to complaints from fishermen regarding unusual odor in fish caught near the Rayonier outfalls. Rayonier conducted wastewater analyses to identify the odor causing compounds in the wastewater. Rayonier's consultant found sulfur compounds- mercaptans, in the wastewater including 2-furfuraldehyde, 2-methoxyphenol (Guaiacol), ethyl mercaptan, butyl mercaptan, dimethyl sulfide, and butyric acid. The consultant's analytical report describes the levels of odor causing compounds in July 2009 as close to the average of historic levels. Furthermore, the report states that the levels of odor compounds are not near the maximum values found in the historic data. These last statements suggest that the levels of odor compounds in the wastewater and river are occasionally higher and more offensive than those that resulted in the specific complaints and study of 2009. Scientific studies have found that mercaptans are moderately toxic to aquatic organisms but with limited potential for bioaccumulation. Mercaptans have notoriously obnoxious odors detectable at extremely low levels and concentrations. Ethyl mercaptan is used as a warning odorant for normally odorless commercial propane and natural gas. Ethyl mercaptan odor is considered detectable down to 0.00035 ppm in air.

The 2009 study report states that effluent dilution in the river would leave the constituents below the detection level of standard analytical methods notwithstanding the reported unusual fish odors of the complaints. The report shows the Altamaha River was flowing at about 3000 cubic

of the total volume of the river. The stained plume of wastewater appears similar to the dark tannin stained water of blackwater streams draining wetlands commonly found further downstream. While natural inflows of blackwater streams occur downstream, this blackwater-like wastewater discharge is not natural and particularly objectionable to users combined with the odor of the industrial process wastewater of the Rayonier plant.

In addition to the 308 response, we received numerous letters and emails containing complaints and concerns from respondents in 2016 objecting to the wastewater discharge impact on the river color and odor during the most recent NPDES permit renewal public notice period. There have been numerous local television and newspaper articles interviewing residents, fisherman, and local politicians raising concerns about the discharge color, odor, and the taste of fish caught near and downstream of the Rayonier industrial wastewater discharge. In addition, the Altamaha Riverkeeper and other advocacy groups have repeatedly raised concerns about impacts from the wastewater discharge for many years.

Finally, I have had several conversations with Mr. Dan Calhoun of the United States Geological Survey, South Atlantic Water Science Center, in Norcross, Georgia about the Altamaha River. The Center performs routine monitoring for basic water quality parameters under contract with Georgia EPD. Mr. Calhoun shared that they routinely hear comments from river users downstream of the plant saying that, while the fishing is good, the fish are inedible because of the taste which is strongly like the smell of the Rayonier plant discharge. These comments include those from anglers more than 10 miles downstream particularly when flows are low in the summer and autumn. Mr. Calhoun explained that there is a Glynn County regional park about 20 miles downstream of the plant that has camping facilities, boat launches, and a designated swimming beach area. Mr. Calhoun says that some people swim there but many do not because the water smells of Rayonier. Mr. Calhoun added that he can tell when USGS staff have returned from sampling the Altamaha River downstream of Rayonier because the boat and equipment smells like Rayonier wastewater upon its return to Norcross from South Georgia.

I will continue to seek, gather, and analyze information from various sources regarding water quality in the lower Altamaha. In my opinion, the weight of multiple lines of evidence described above supports a finding of impairment for the color and odor narrative water quality criteria for the lower Altamaha River below the Rayonier plant.