

**MEETING NOTES**

**SOUTH CAROLINA ELECTRIC & GAS COMPANY**  
**Water Quality TWC Meeting**

**February 28, 2013**

Final KDM 04-05-13

**ATTENDEES:**

Bill Marshall (SCDNR)

Ron Ahle (SCDNR)

Rusty Wenerick (SCDHEC)

Shane Boring (Kleinschmidt)

Alan Stuart (Kleinschmidt)

Kelly Miller (Kleinschmidt)

Bill Stangler (Congaree Riverkeeper)

Bill Argentieri (SCE&G)

Milton Quattlebaum (SCANA)

Steve Summer (SCANA)

Randy Mahan (SCANA)

Jaclyn Daly (NOAA) via conference call

Tom McCoy (USFWS) via conference call

*These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.*

Alan opens the meeting with introductions, and then explains that a few people (Milton, Steve, Randy and Bill Stangler) will be joining the meeting later. Because of this, the agenda is shifted around so that the macroinvertebrate study is discussed in the afternoon.

The group begins discussing historical water quality data by going over some examples of the types of studies SCE&G has performed at Lake Monticello and Parr Reservoir, including identifying the parameters covered. Alan mentions that lots of data exists, but it needs to be consolidated into one report, where all the data is available in one location. Jaclyn requests that the report include the water quality standards that exist for some parameters. Rusty also suggests that the report include a map of the Project Vicinity that points to specific areas where water quality readings were taken, along with any data points that exceed standards.

Alan asks the group to decide what parameters should be included in this report that will indicate and evaluate any project effects. Ron mentions that he would like to see a comparison between the water that is being taken out of Parr Reservoir and the water that is being returned to Parr Reservoir. He would like to see a “before and after” type of analysis, to see if the nuclear plant has any effect on the water quality of Lake Monticello, Parr Reservoir, and to a lesser degree, the Broad River.

Rusty mentions there are a few sites within the Project Area that DHEC has listed as having violations for copper levels and pH over the last few years. He says that these areas are no longer being monitored, but the sites remain on the 303d list of impaired waters until data is collected that proves it is clear of these violations. Rusty shows the group a map (Figure 1) that displays the sites monitored by DHEC and reminds the group that all data can be found in Storet. Ron mentions that he also has data he has personally collected during his time in the field and would be willing to share this with the group for inclusion in the report.

Jaelyn asks if algal blooms are monitored within the reservoirs, since an increase in these can be toxic to fish. Alan says this can be determined if chlorophyll A is monitored, which may be so in Lake Monticello, but is unlikely at Parr Reservoir, since it isn't a true reservoir.

Alan asks Rusty what information he needs for the 401 water quality certification. Rusty says that DHEC will examine any places where there have been violations, look at the specific parameter in violation, and determine if the Project contributed to the exceedance in limits. He notes that it might not be possible to determine if the Project is affecting these limits. The watershed is likely causing increases in things like phosphorus at the impoundment however DHEC might look to see how plant operations can be used to mitigate that water quality problem. Bill Marshall mentions that DHEC will also be interested in how the Project effects water quality downstream. Rusty agrees, and notes that copper is known to have exceeded limits in the past at sites downstream of the Project. Ron says that copper could be coming from plant operations, but Alan says it could also just be from the natural environment.

Jaelyn suggests the group also consider looking at new emergent contaminants. The group says that this information would be available through NAWQA, the National Water Quality Assessment Program, a USGS program that examined the Santee watershed, which includes area in North Carolina down to the South Carolina coast. Celeste Journey is the contact person for this information. Rusty suggests the group look at existing data before going any further in searching for these emerging contaminates. Shane mentions that after all data is collected, the group needs to review it and narrow down the specific parameters that have a true nexus to the Project. Ron reminds the group of his earlier suggestion of examining water as it moves to and from the Parr Reservoir, adding that this could be an ideal way of identifying any Project effects.

To address the issue of stratification, Shane says there may already be a vertical profile in existence that shows this for Lake Monticello and Parr Reservoir. It is noted that Lake Monticello is at an elevation of 425 feet at full pool, but can go down to 418 feet in an emergency situation and with FERC approval. The maximum depth of Lake Monticello, located at Frees Creek, is 160 feet, with an average of 75 feet.

Rusty notes that the WQ TWC will be interested in seeing the water budget the Operations RCG is developing.

Bill M asks about NPDES discharges in the areas. Bill A says the Parr Fairfield Project does not have an NPDES discharge, although the nuclear plant does. Rusty says he will look at GIS information to determine if there are any more NPDES permitted areas within the Project Boundary Line.

#### **Information Needs (Water Quality Parameters)**

The group reaches consensus on what parameters need to be included in the baseline water quality report. These parameters are temperature; dissolved oxygen (DO); pH; conductivity; total dissolved solids (TDS); total suspended solids (TSS); turbidity; phosphorus; chlorophyll A; metals; nutrients; organic compounds, specifically chlorinated pesticides; fecal coliform and/or E. coli; and radionuclides. The group also agrees to look at any available information on new emerging contaminants through USGS NAWQA sampling and any available vertical profile data that might address stratification. Water Quality sampling of Parr Reservoir before and after pumping

operations. Sources for collecting the data listed above include SCE&G, USGS, DHEC, DNR, Storet, and the Operations RCG water budget (after it is developed).

The group then begins discussion of the Sediment Loading Assessment performed by GEL engineering. Alan mentions that an issue for many people involved in the Parr Relicensing is sedimentation. This sediment study that was performed in 2008 was sent to the group to spark discussion. Alan asks what the group wants to do with this issue. Bill M asks how seriously sediment affects FFPS operation. Bill A says there is sediment at the project but the only issue with it is that when sand is pumped through the system, it can cause deterioration of the blades. However, this is a maintenance issue and the sand doesn't affect generation. Bill A also tells the group that sediment would only be a problem at Parr if it reached the top of the Parr Dam. Any sediment below the one foot line at the top of the dam is insignificant. The only sediment that leaves the project is what goes through the turbines. The sand gates have not been operable for many years and there is no intention of changing that. There are no sand gates at Fairfield.

The trash rake was added to help keep the forebay area clean, so there really is no need to make the sand gates operable again. The trash rake at Parr is a drag rake. It extends approximately 50-75 feet in front of the dam, drags along the bottom of the reservoir, up along the rack and deposits into a trough. The sediment, logs and debris it collects in the trough are loaded up and carried away to a landfill. Bill A tells the group that they have seen better performance out of the units since all of the debris in the forebay area has been cleaned out and is kept clean. Another benefit of this trash rake system is that the movement of the rake stirs up sediment, which allows it to move through the turbines and out into the river. Because of this system, it seems the amount of sediment that is being transferred through the Project is equal to what is entering the reservoir. This means the sediment level within the Project is at equilibrium, as Ray Ammarell had previously said. Tom asks if a diagram of the trash rake can be provided. Bill A says he will have Ray include this information in his operations presentation.

Bill A tells the group that SCE&G is not advocating a need for dredging to eliminate some of the sediment within the Project. He says this would not be economical, as the sediment collected is not able to be resold due to quality. Bill A also says there is a man who dredges around the Hwy 34 bridge and has been doing so for about 2 years. Bill S asks if this has any affect on what is accumulating below the dam. Bill A answers that this amount is insignificant.

Ron says that if a sediment budget can be shown of what sediment enters and exits the Project (including quantity and quality) then DNR would have no concerns with sediment. Equilibrium would be the best possible situation for the Project, since there would be a constant movement of sediment into and out of the reservoirs. Bill M agrees, saying that at other hydro projects, sediment can be released downstream in large volumes, which is not the best thing for a river. He mentions that if FERC has no issue in regards to dam safety, the equilibrium situation would be great.

The group focuses on the GEL report and tries to determine the composition of the sediment that is entering the reservoir. Everyone believes it is most likely the fines, or silty type sediment, that is passing through the Project. This information will also be included in the water quality report that was discussed earlier in the meeting. Ron and Rusty ask if a sediment contaminant study has been completed in the Project Area. Bill A says that a sediment investigation study plan was developed for the VC Summer Units 2 and 3.

### **Information Needs (Sediment)**

The sediment discussion highlights several information needs including determining a sediment budget; determining the quantity, composition and location of the samples taken for the GEL report; finding out if FERC has a dam safety issue with sediment build-up; finding out if inoperable sand gates will be an issue for acquiring a new license; and acquiring the VC Summer Units 2 and 3 sediment investigation report.

After lunch, Steve and Milton join the meeting. Steve tells the group that monthly water quality profiles are being done at Parr Reservoir as part of the water quality certification for the new nuclear units. Monthly water quality profiles have been conducted in Monticello Reservoir for many years in support of the existing nuclear unit. Steve addresses the issue of stratification at the Project. He explains that generally, Parr Reservoir doesn't stratify because it isn't a true reservoir. Steve explains because of the operation of the Fairfield Pumped Storage Facility and the nuclear plant, Lake Monticello is like three different reservoirs in one, with respect to stratification. The upper end of the lake stratifies like a normal reservoir. The section of the lake across from FFPS stays mixed down to 60 feet, due to the regular pumping and releasing of water. The eastern side of the lake is where the thermal plume from the nuclear plant discharge is located. Steve points out that the water circulation for the nuclear plant is very small compared to the amount of water that is moved back and forth from FFPS.

Steve says SCE&G has three water quality sampling locations in Parr near the discharge area and sediment sampling locations above Heller's Creek and at the discharge location for the new nuclear units. He says that sampling for macroinvertebrates, fish, sediment and water quality for the new nuclear units are all performed on Parr Reservoir. Steve says that a study performed recently by John Alderman identified a new area just below Parr Hydro that has the highest amount of mussels in all of the Broad River Basin. Alan asks if the group would like to see a macroinvertebrate study completed, separate from what is already being collected for VC Summer. Currently SCE&G is sampling for macros at a site above Heller's Creek, a site below the discharge, and in the Parr Hydro tailrace once a year. Ron mentions he would like to see a dredge done at the tailrace area at FFPS. Milton says he will dredge at three locations, from the railroad trestle up to the bend in the tailrace, this spring to see if there are any signs of macros. Rusty says he would like to Jim Glover and his group to look at the macros study plan that is currently used by SCE&G for VC Summer to make sure it is also suitable for the Parr Project. Milton says he will send a copy of the study plan to Rusty and Kelly for distribution.

### **Information Needs (Macros and Mussels)**

Items of note stemming from the macroinvertebrate discussion include the identified needs to sample the Fairfield tailrace area at three locations for possible macro habitat; review the VC Summer Units 2 and 3 macroinvertebrate studies; review VC Summer Units 2 and 3 mussel study; and acquire feedback on these reports from DHEC aquatic biologists.

The group then shifts focus to discuss the nuclear plant's affect on water temperature of Lake Monticello. There were originally two temperature monitors in Monticello Reservoir between FFPS and Hwy 99; only one is currently in existence (FFPS forebay). Bill A asks the group if temperature information from Unit 1 needs to be included in the water quality report. Bill S says that if the nuclear plant has been in compliance for their NPDES permit, there should be no concerns with Unit 1. The group agreed.

Steve and Ron mention that Lake Monticello is probably warmer than Parr Reservoir in the winter and cooler than Parr in the summer, due to the pumping of Fairfield and the differences in depth of the two reservoirs. The new nuclear units 2 and 3 will discharge into Parr Reservoir. Rusty mentions that the NPDES permits for the new units considered how the Parr Project operates, and unless the operation is changed, the new discharge's affect on temperature won't need to be addressed. The group decides to look at the historical water quality data and see if anything needs to be addressed. Since everything for the new nuclear units has been permitted, all angles have been examined and determined to be acceptable.

Bill A then reviews what was covered in the meeting and finalizes the list for what data will be included in the water quality report. SCE&G and Kleinschmidt personnel will gather all the existing water quality data, form the report, and distribute it to the group for review. Everyone agrees to plan on meeting again in June.

With this, the meeting is adjourned. All action items from this meeting are listed below.

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*ACTION ITEMS:*

- Kelly will send Jaclyn a copy of the American Rivers flows report by Erich Miarka.
- Ron will provide to the group WQ data he has collected
- Rusty will look at the DHEC GIS data and identify all NPDES permitted areas within the Project Boundary and report this information to the group.
- Milton will send a copy of the Macroinvertebrate Study Plan to Rusty and Kelly.
- Milton will send a copy of the Mussel Study Plan to Kelly
- Kelly will send out the macro report to the WQ TWC members and the mussel report to the WQ TWC and RT&E TWC.
- SCE&G and Kleinschmidt will compile all existing water quality data, form a report and distribute to the TWC for review.
- Bill A will include design details and operation of the Parr Hydro trash rake in the operations presentation.
- Kelly will set up a doodle poll for selecting a meeting date in June.

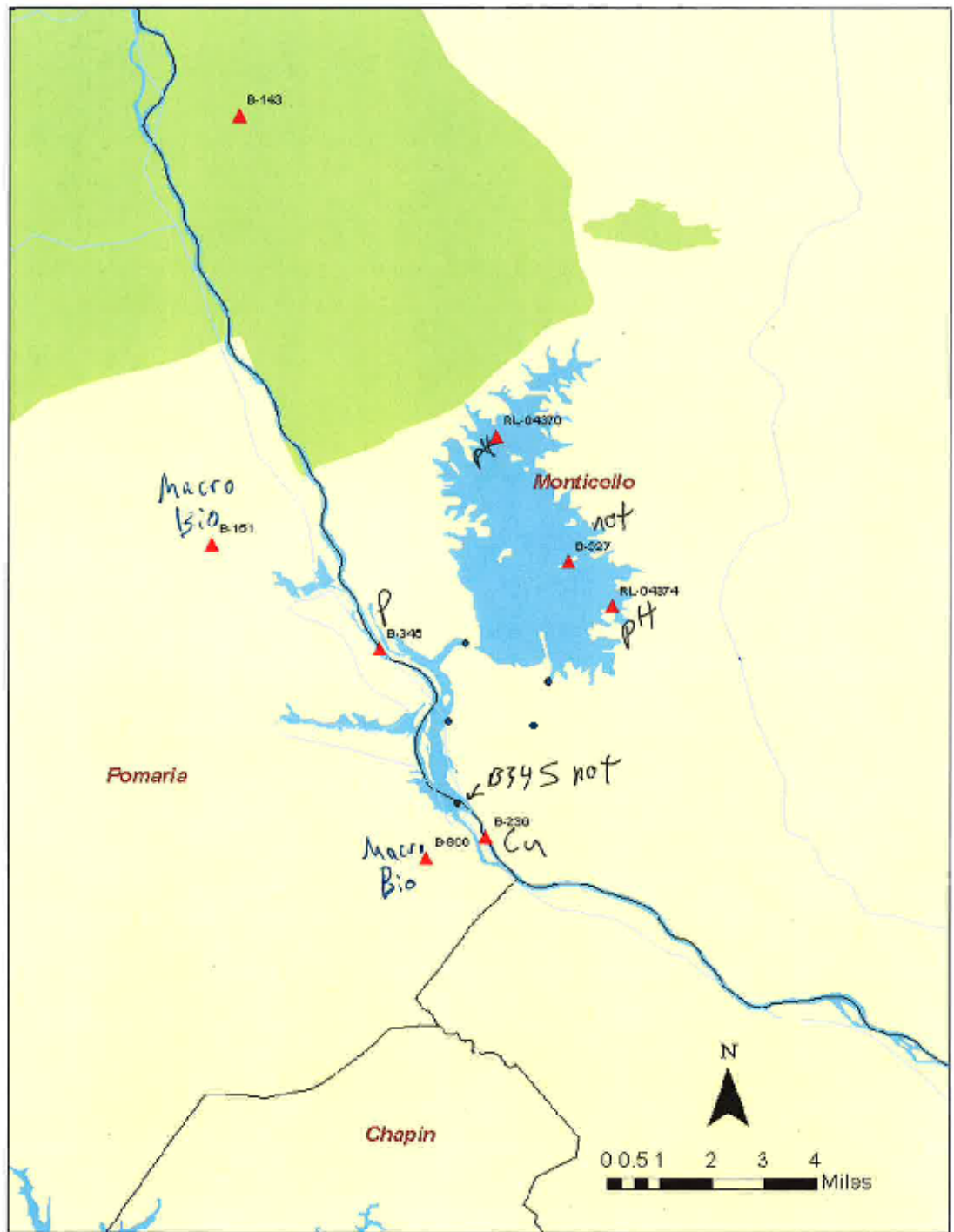


Figure 1: Map of DHEC monitoring sites at Parr and Monticello Reservoirs