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## Attachment A-4 – Water Quality Validation Plots

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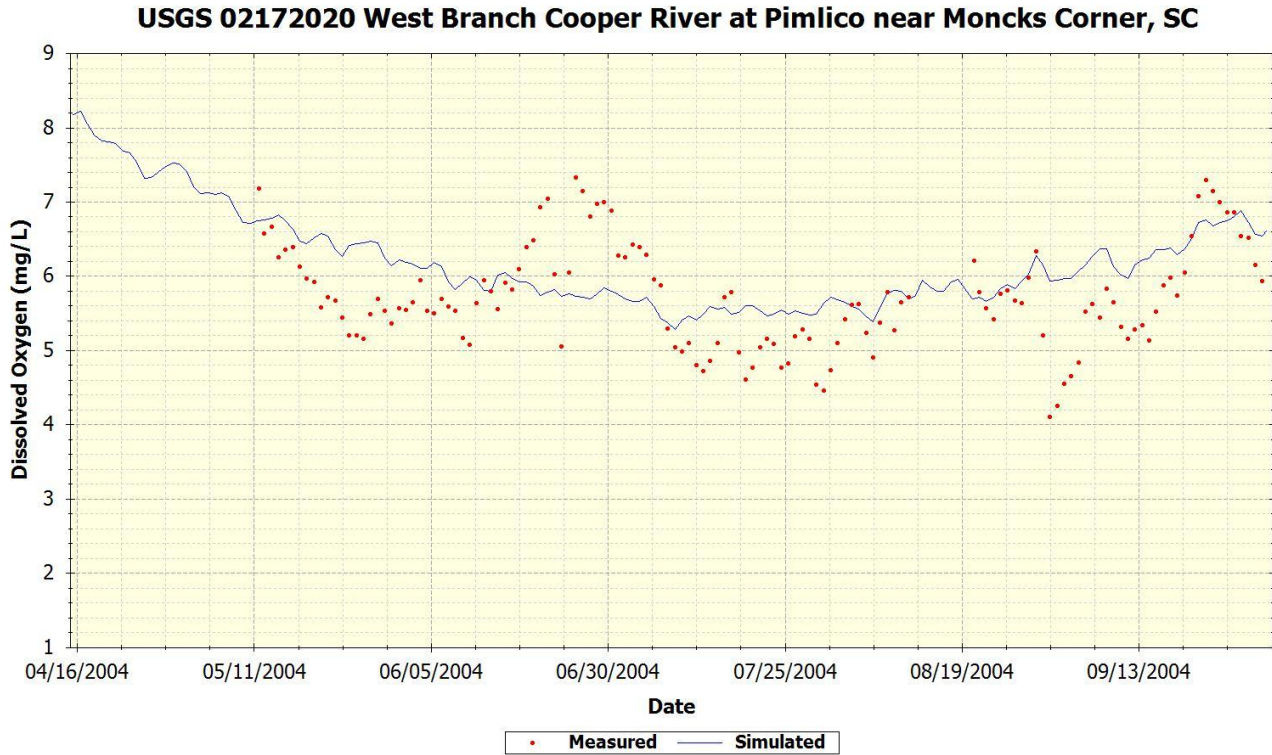


Figure D-1 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172020 – Cooper River near Moncks Corner

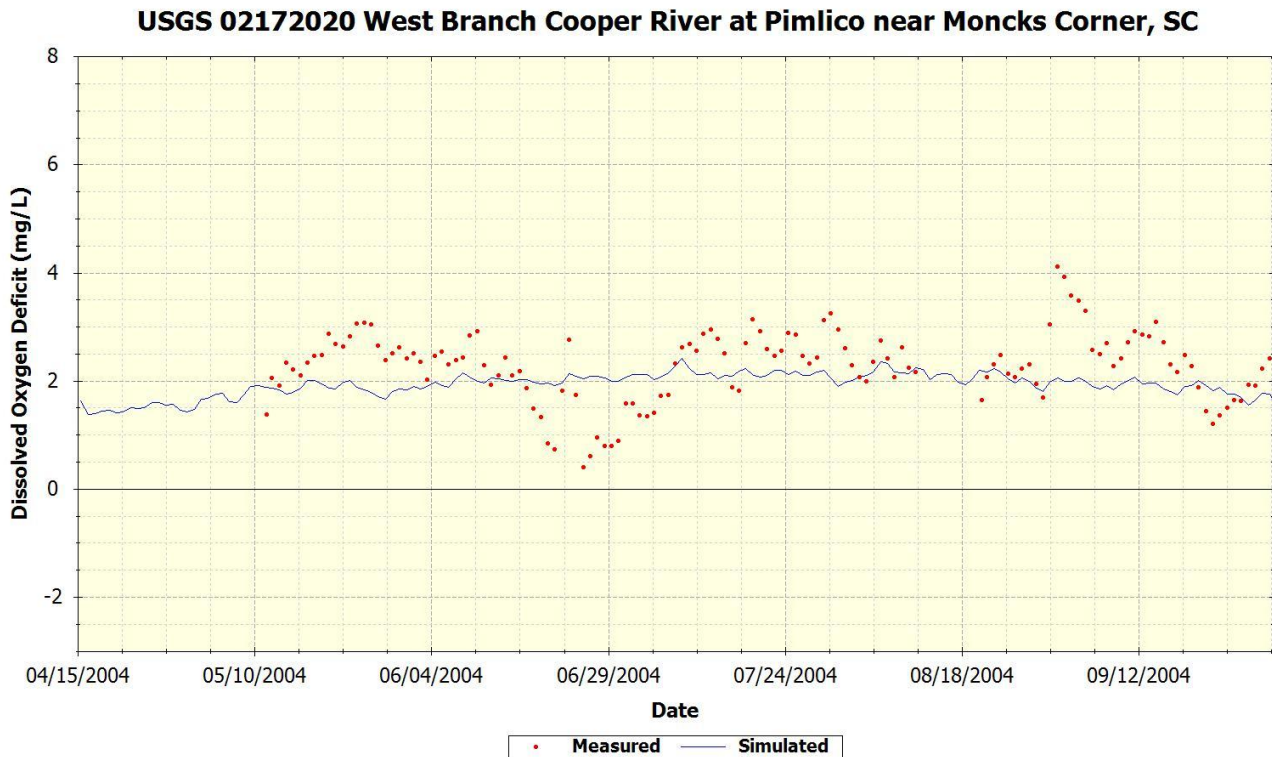


Figure D-2 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172020 - Cooper River near Moncks Corner

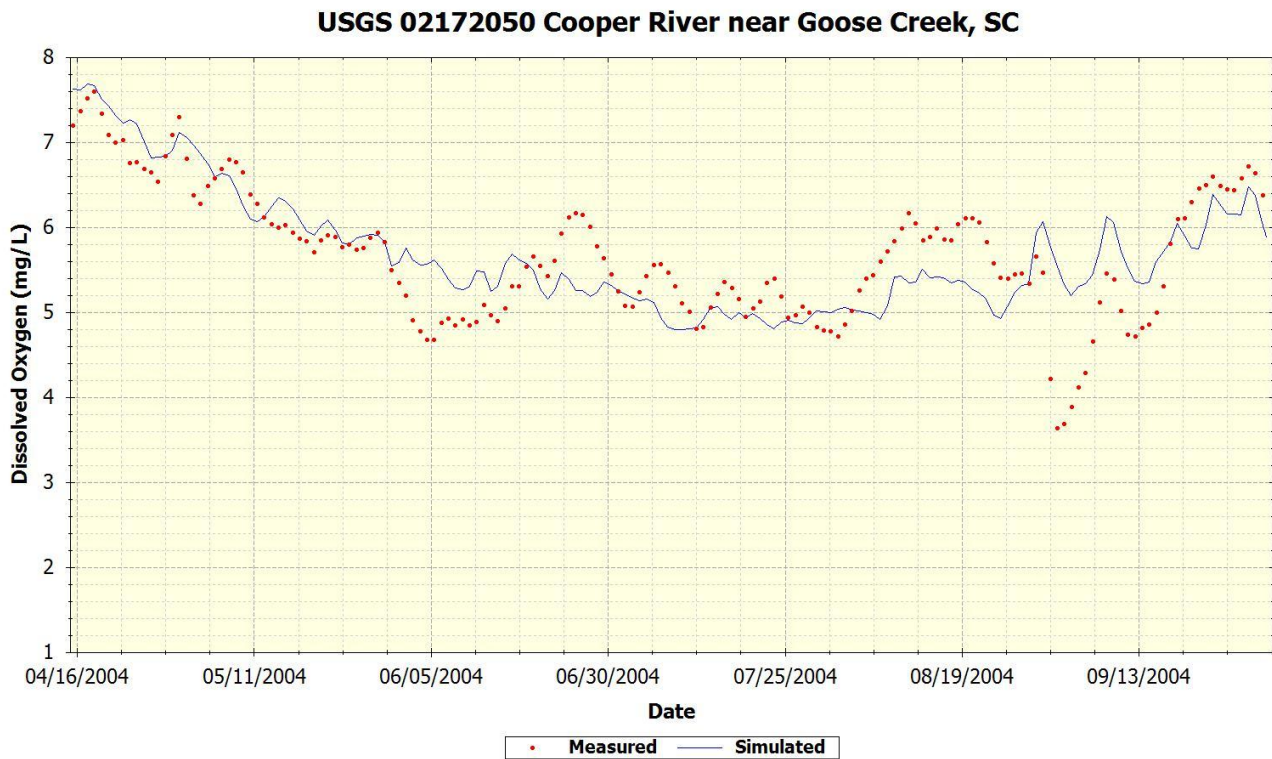


Figure D-3 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172050 – Cooper River near Goose Creek, SC

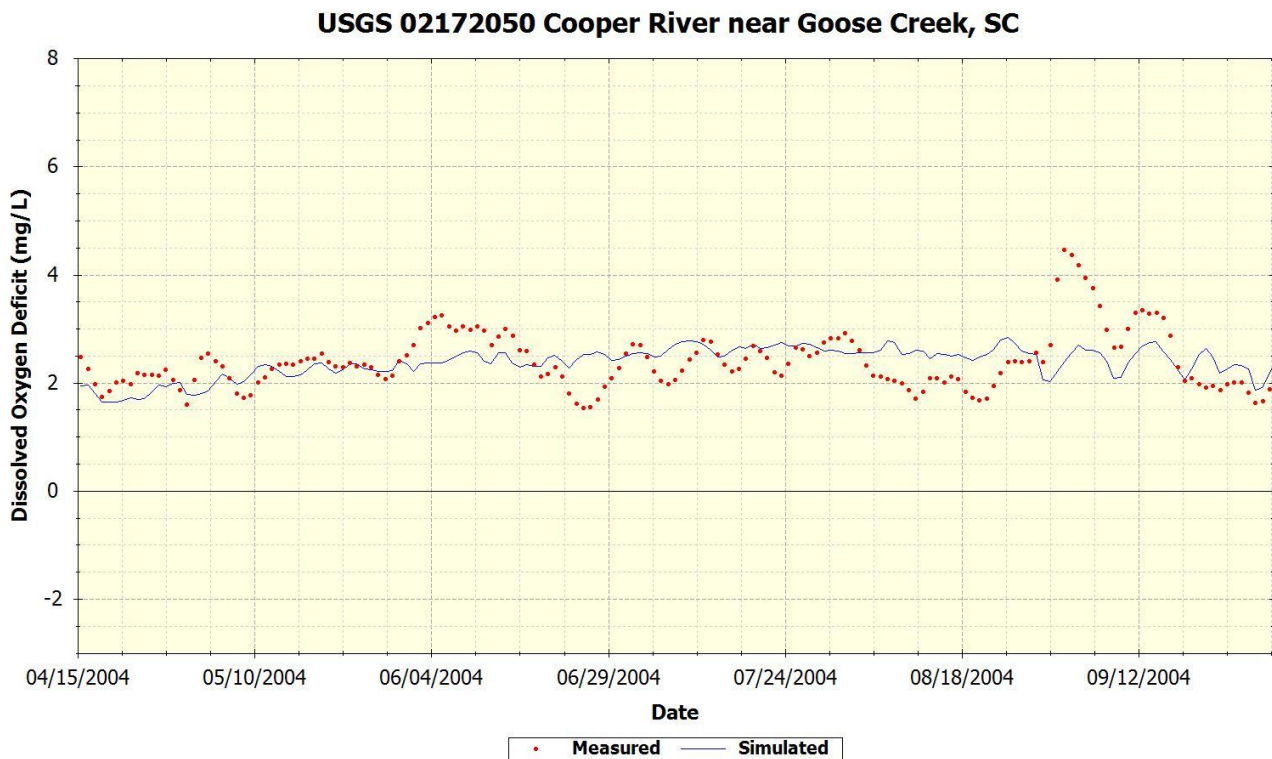


Figure D-4 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172050 – Cooper River near Goose Creek, SC

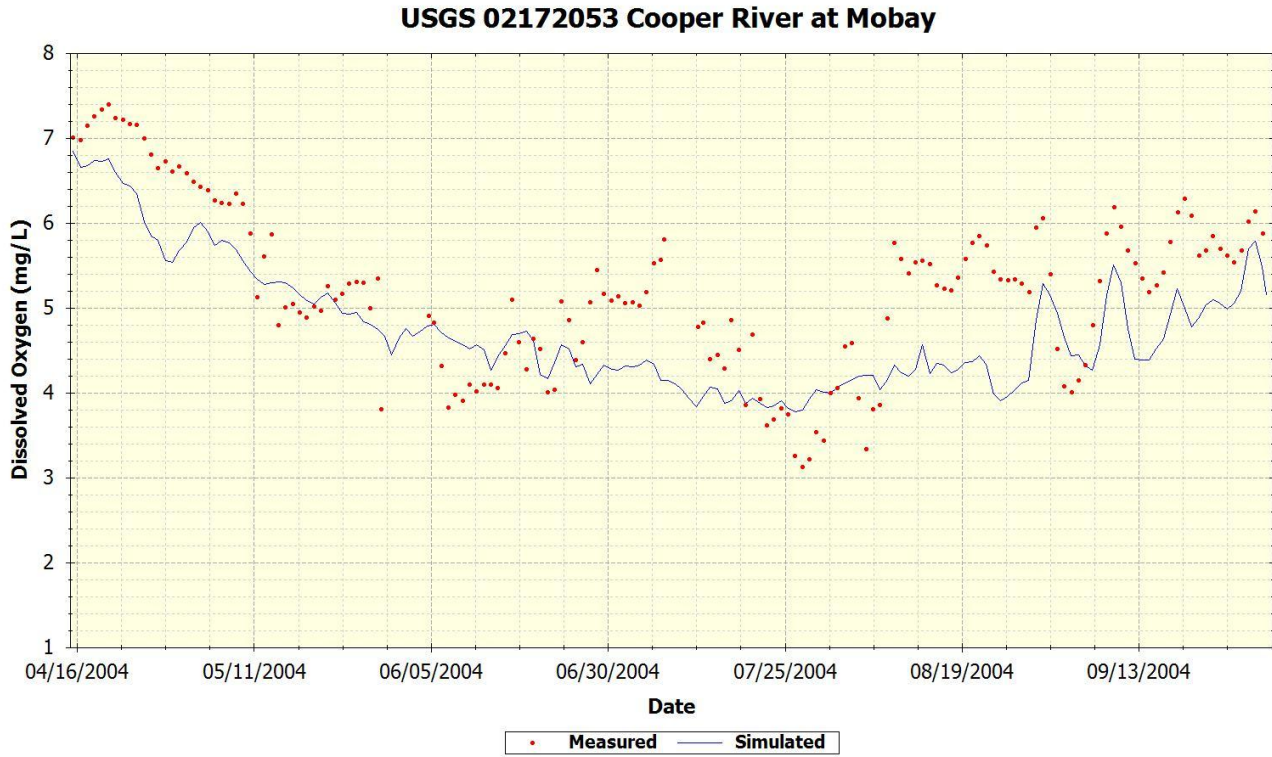


Figure D-5 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172053 – Cooper River at Mobay

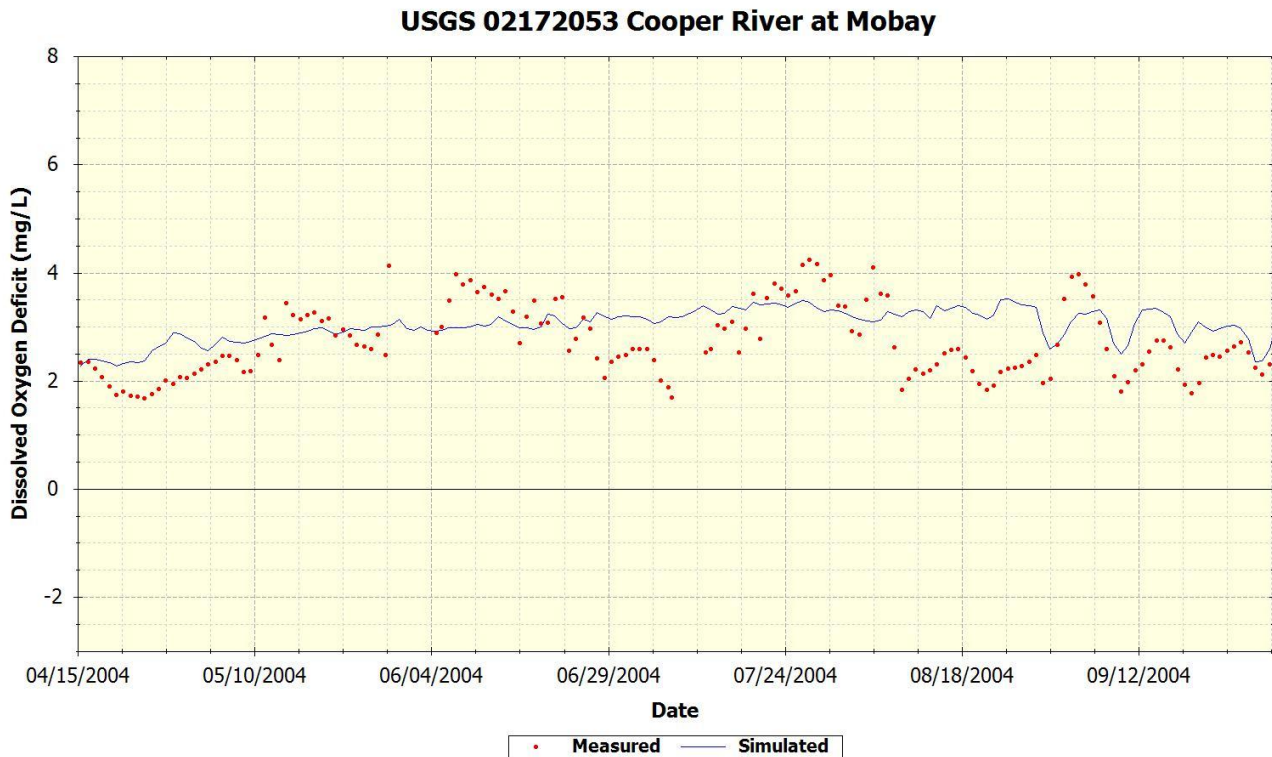


Figure D-6 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172053 – Cooper River at Mobay

USGS 02172067.7 Cooper River at I-526

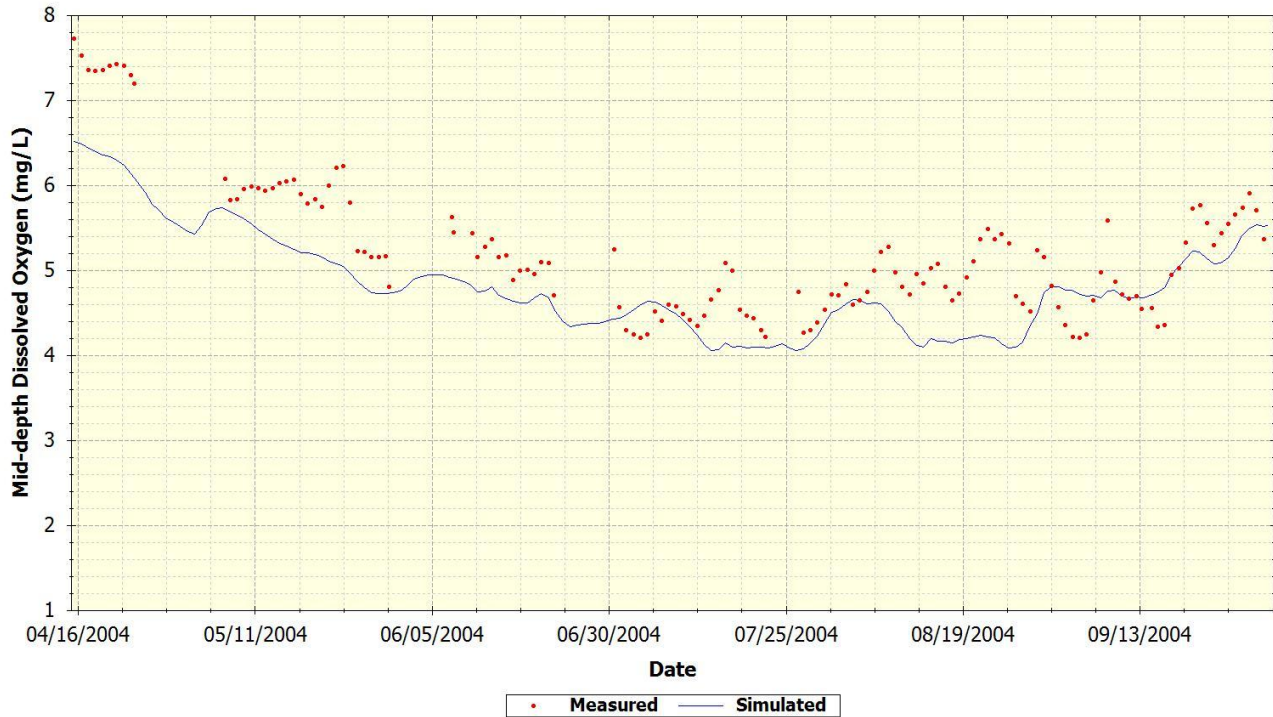


Figure D-7 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172067.7 (Mid-depth) – Cooper River at I-526

USGS 02172067.7 Cooper River at I-526

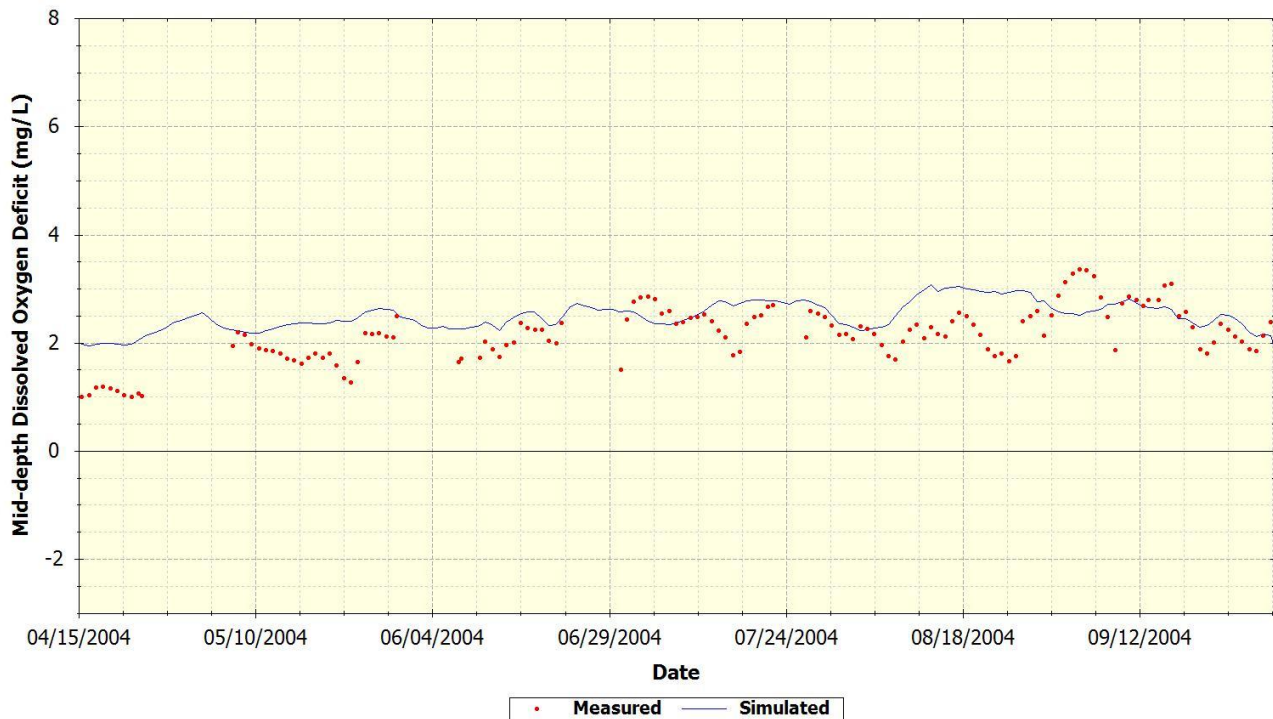


Figure D-8 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172067.7 (Mid-depth) – Cooper River at I-526

USGS 02172067.7 Cooper River at I-526

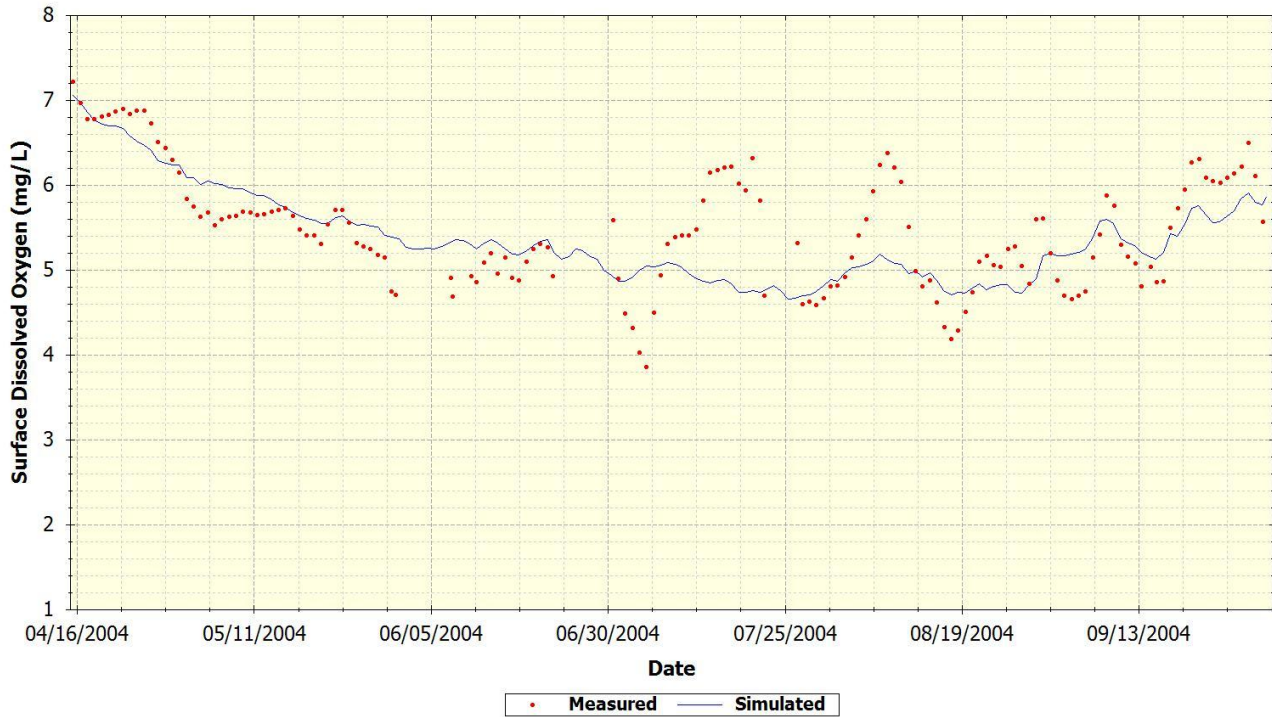


Figure D-9 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172067.7 (Surface) – Cooper River at I-526

USGS 02172067.7 Cooper River at I-526

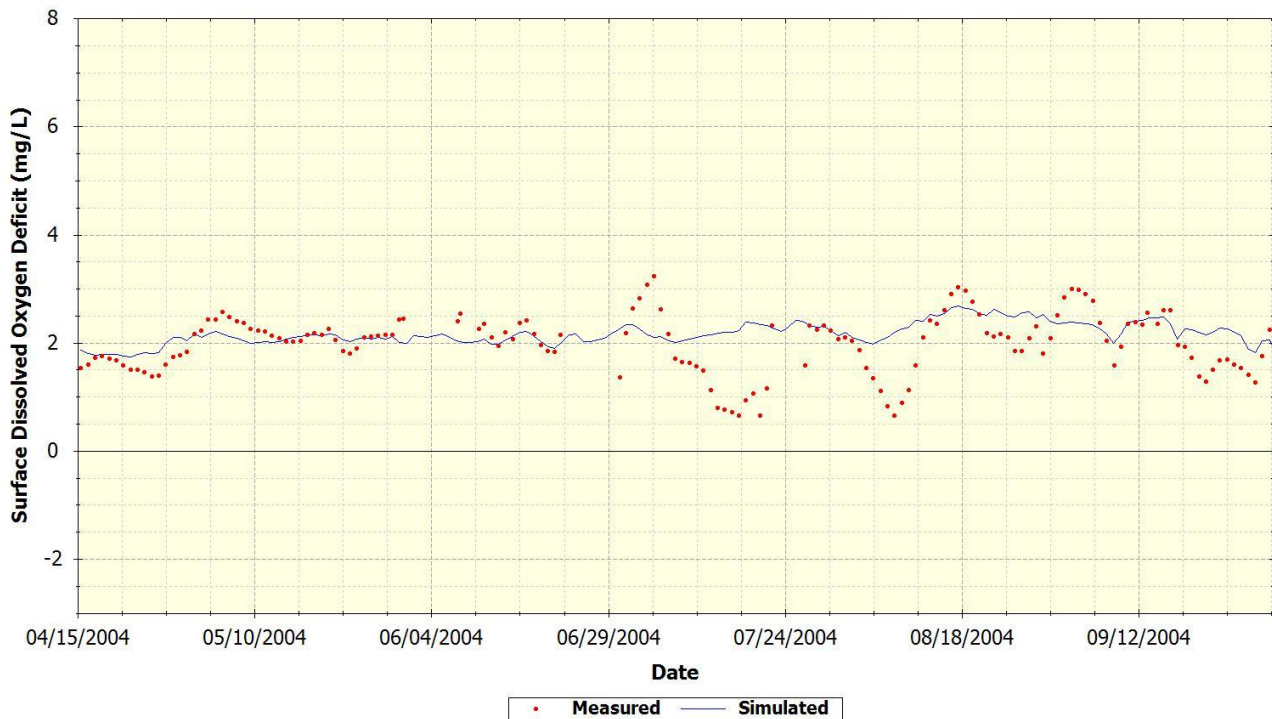


Figure D-10 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172067.7 (Surface) – Cooper River at I-526

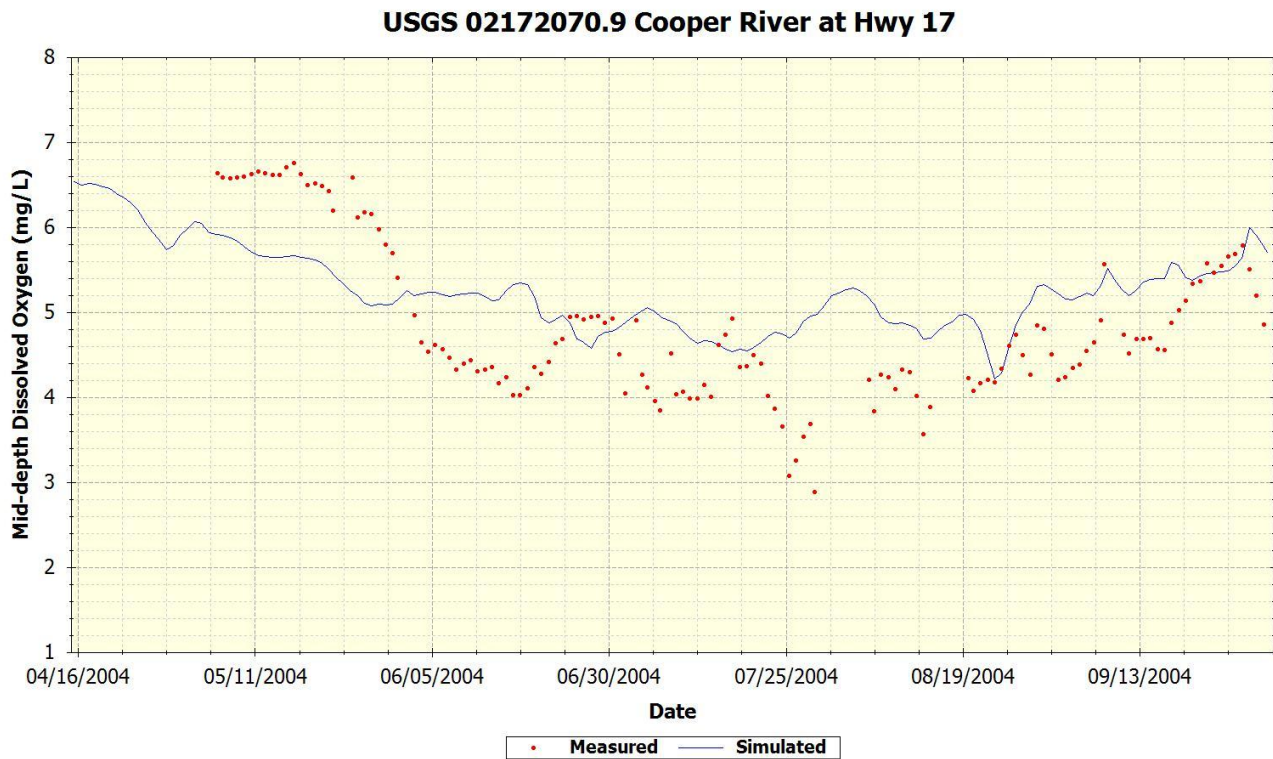


Figure D-11 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172070.9 (Mid-depth) – Cooper River at Hwy 17

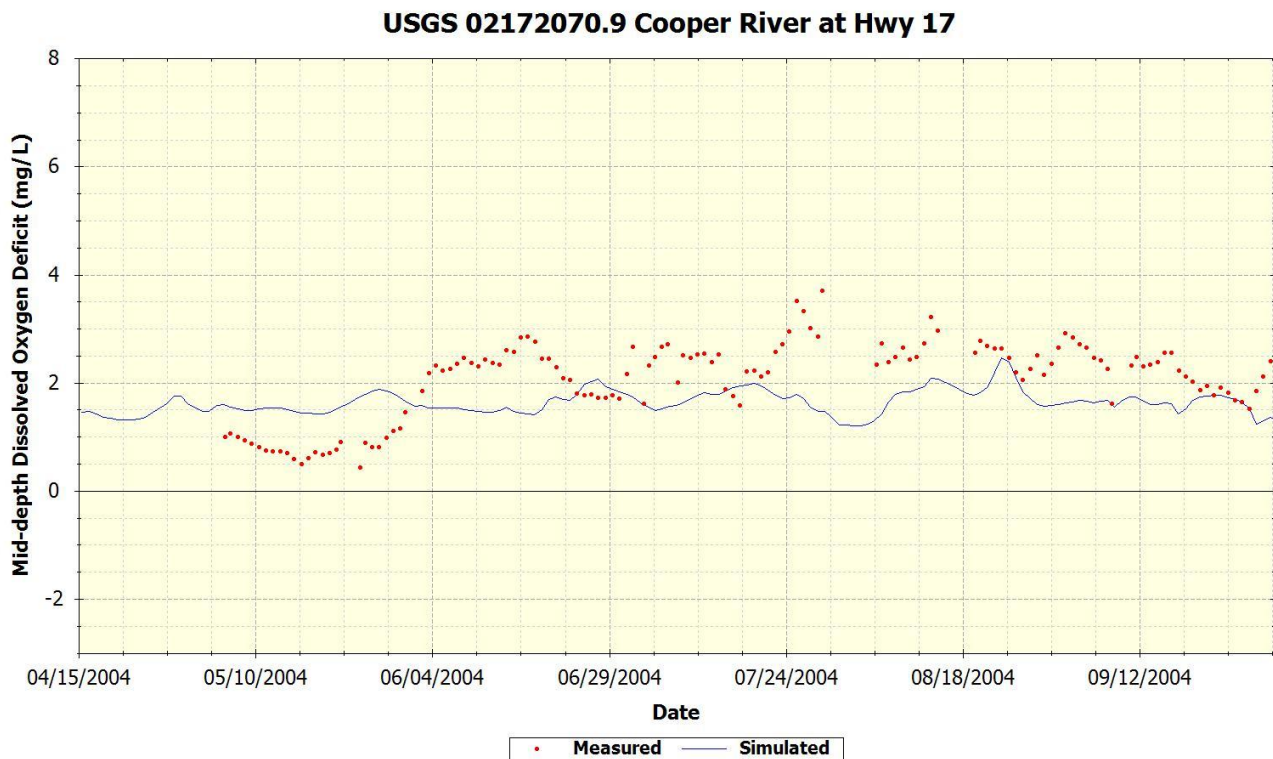


Figure D-12 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172070.9 (Mid-depth) – Cooper River at Hwy 17

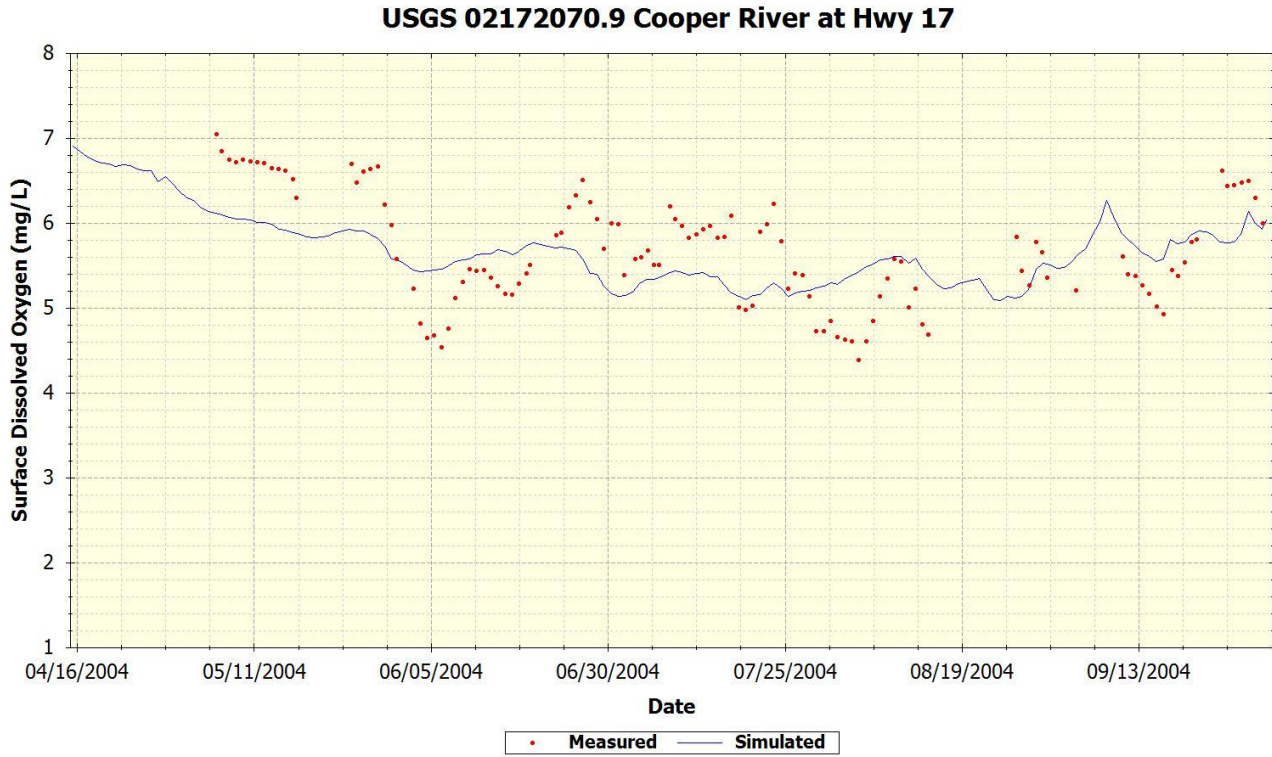


Figure D-13 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172070.9 (Surface) – Cooper River at Hwy 17

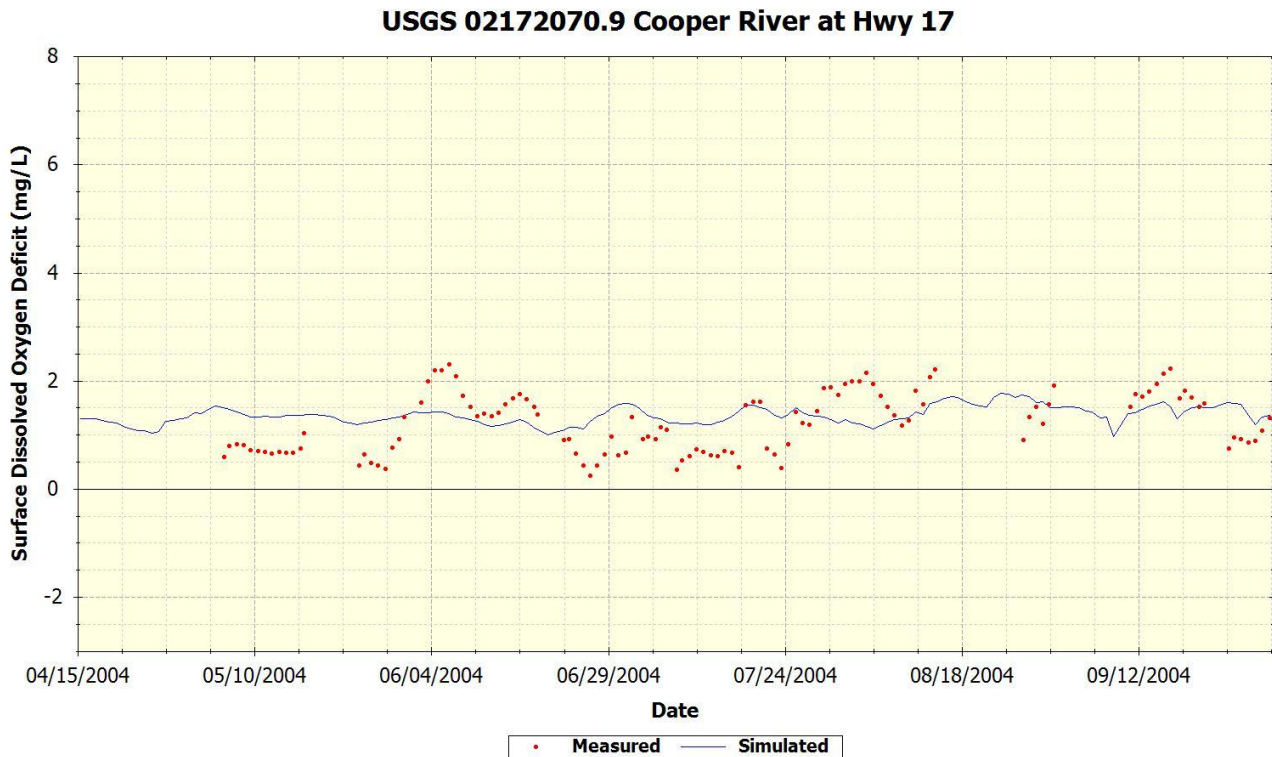


Figure D-14 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172070.9 (Surface) – Cooper River at Hwy 17

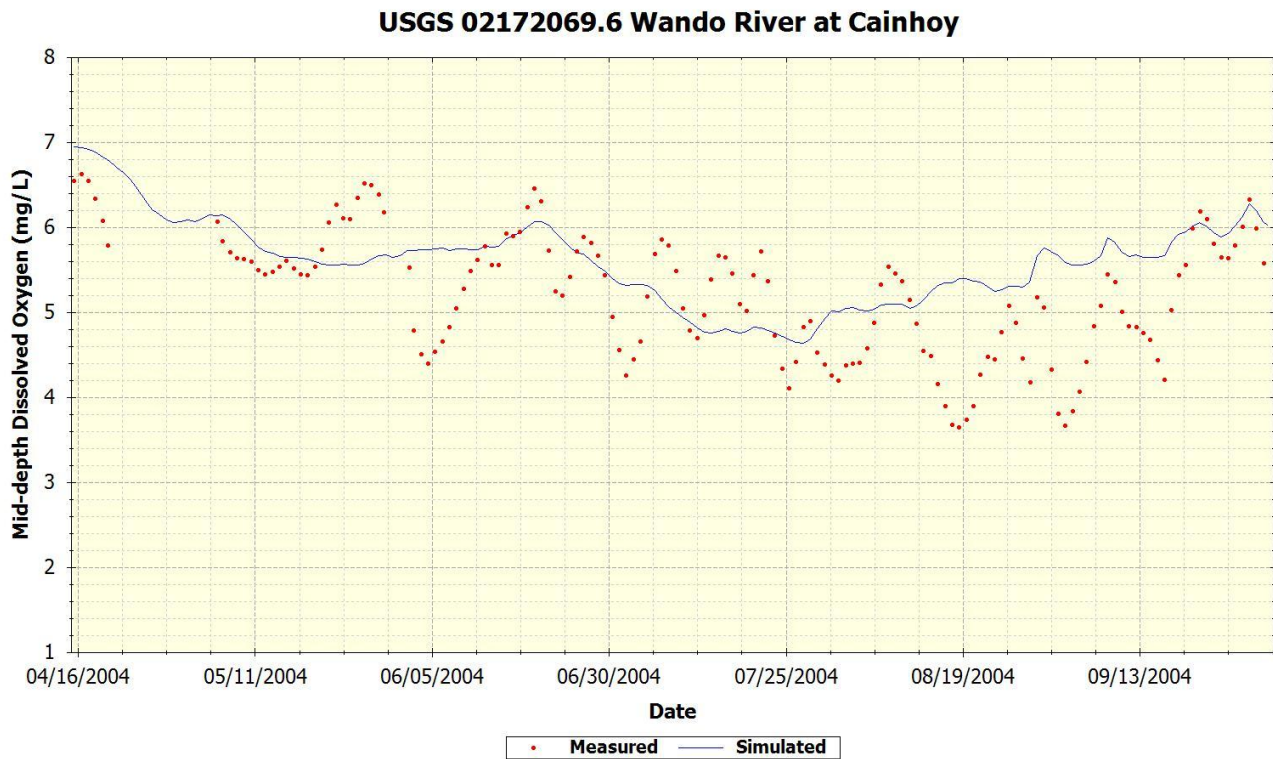


Figure D-15 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172069.6 (Mid-Depth) – Wando River at Cainhoy

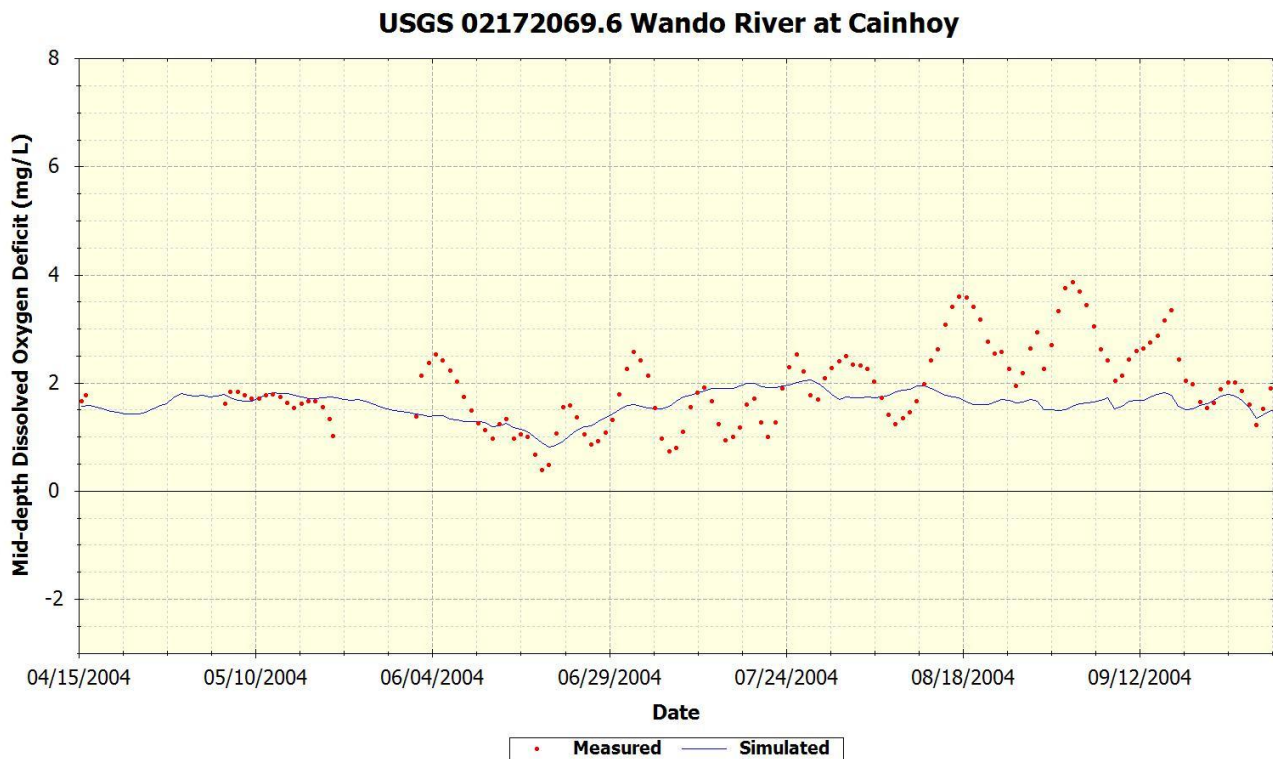


Figure D-16 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172069.6 (Mid-Depth) – Wando River at Cainhoy



USGS 02172069.8 Wando River above Mt. Pleasant

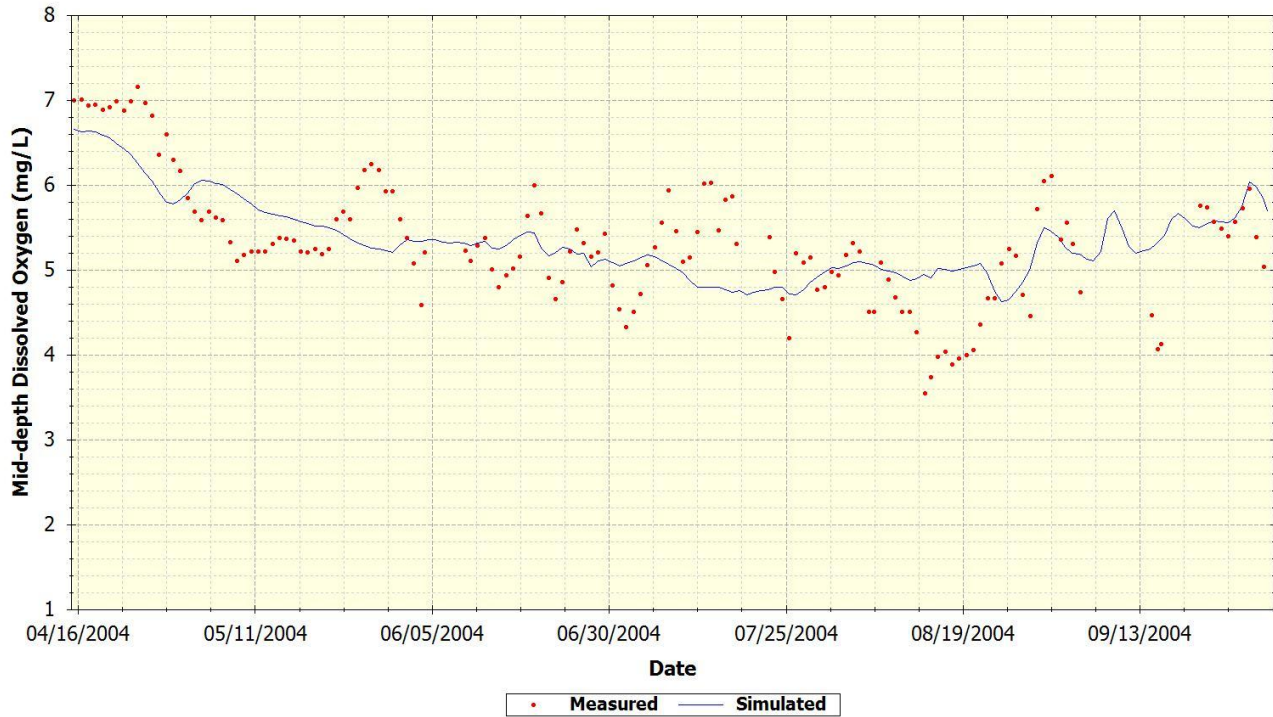


Figure D-17 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172069.8 (Mid-depth) – Wando River at I-526

USGS 02172069.8 Wando River above Mt. Pleasant

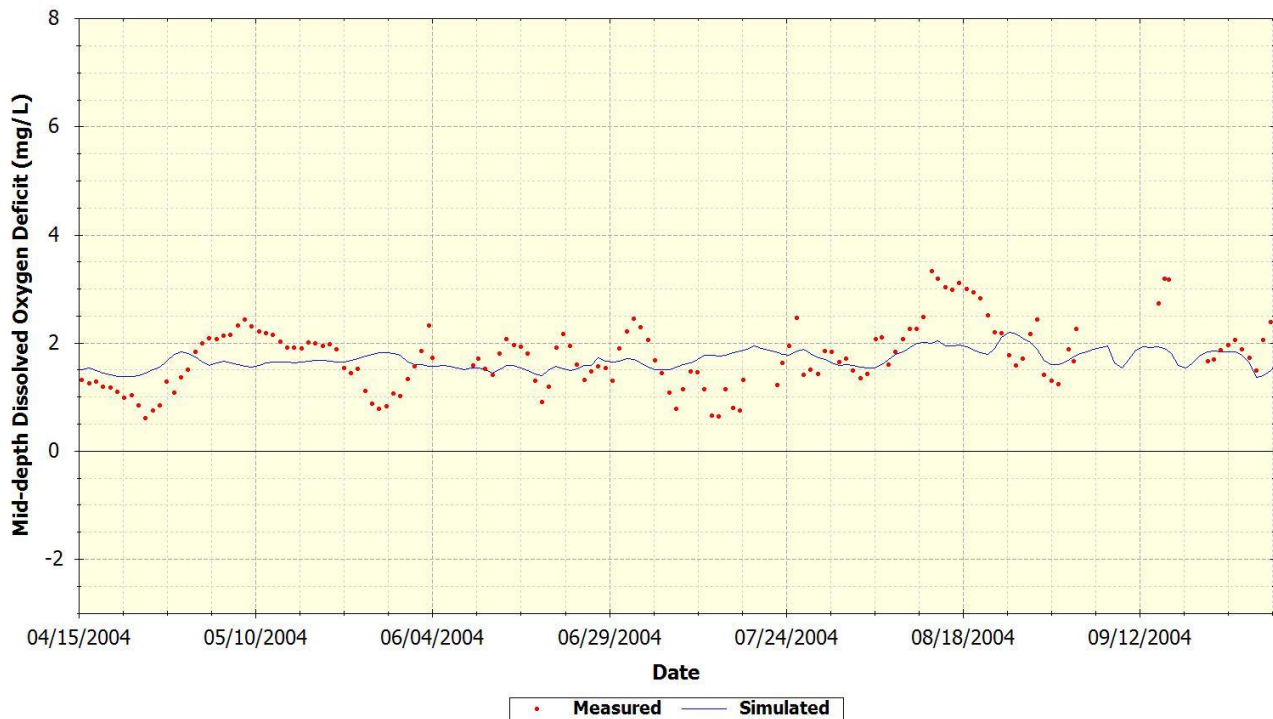


Figure D-18 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172069.8 (Mid-depth) – Wando River at I-526

USGS 02172069.8 Wando River above Mt. Pleasant

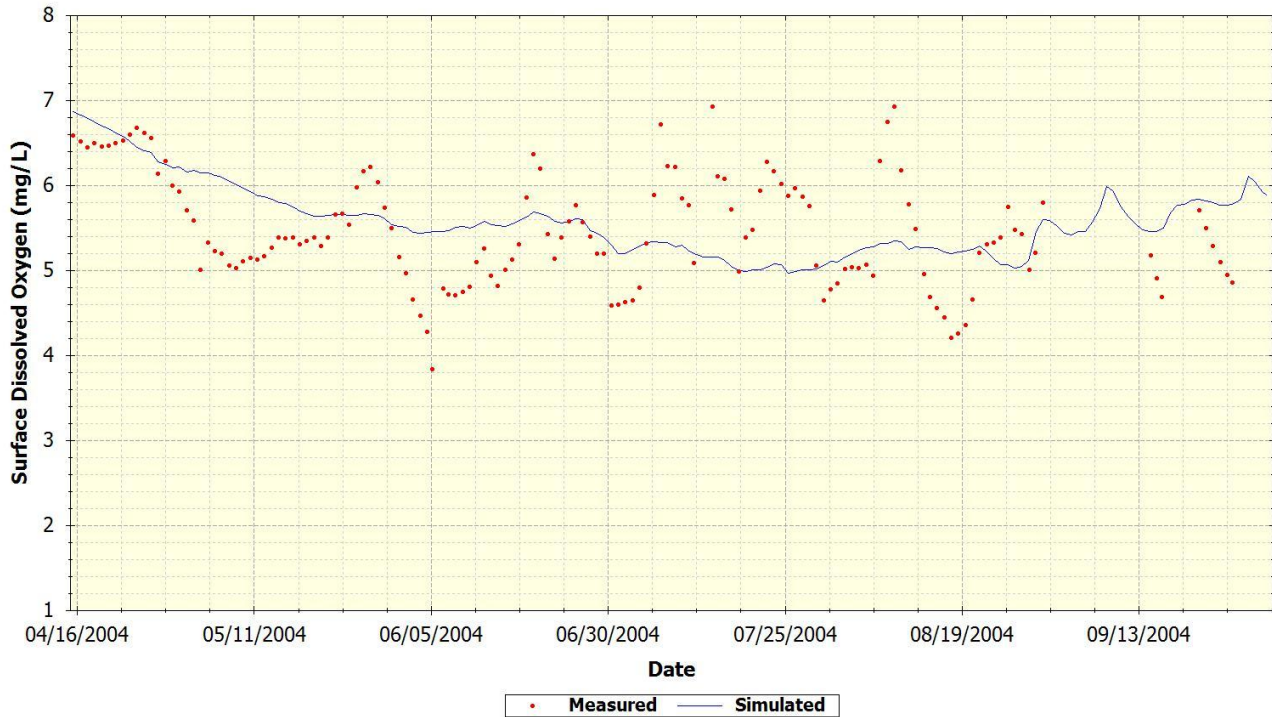


Figure D-19 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172069.8 (Surface) – Wando River at I-526

USGS 02172069.8 Wando River above Mt. Pleasant

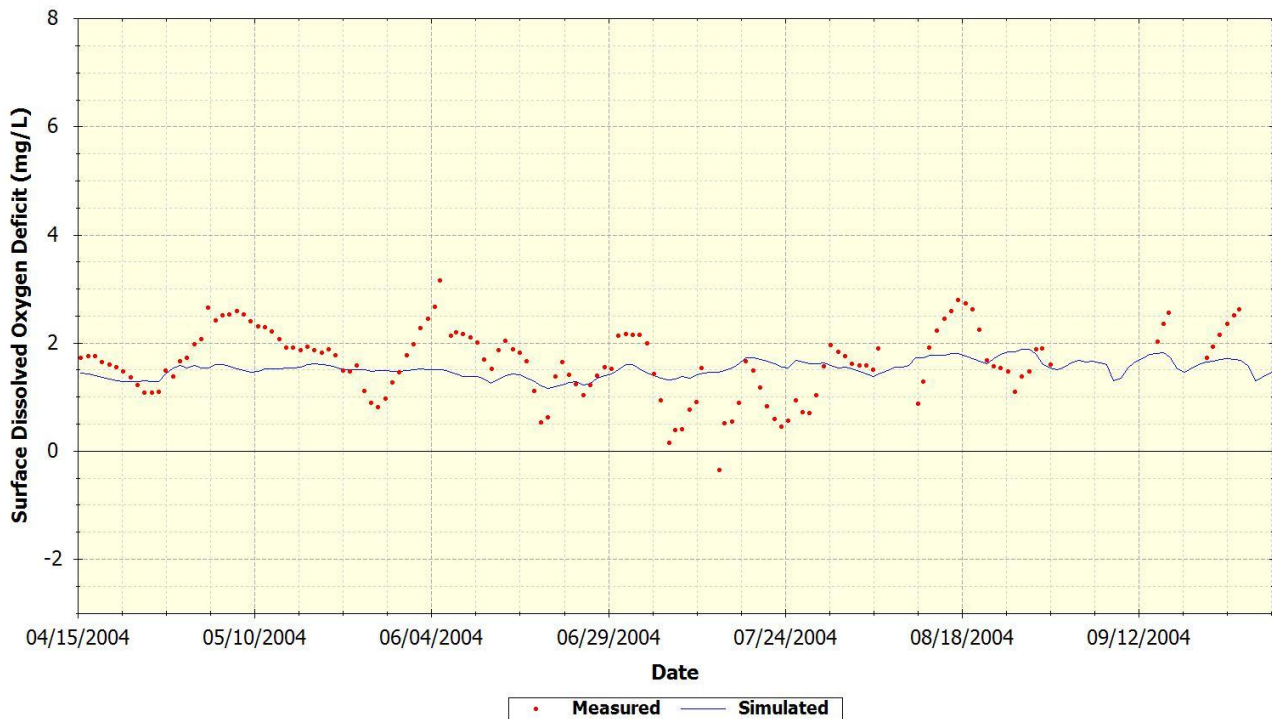


Figure D-20 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172069.8 (Surface) – Wando River at I-526

### USGS 02172084 Ashley River at Bakers Landing

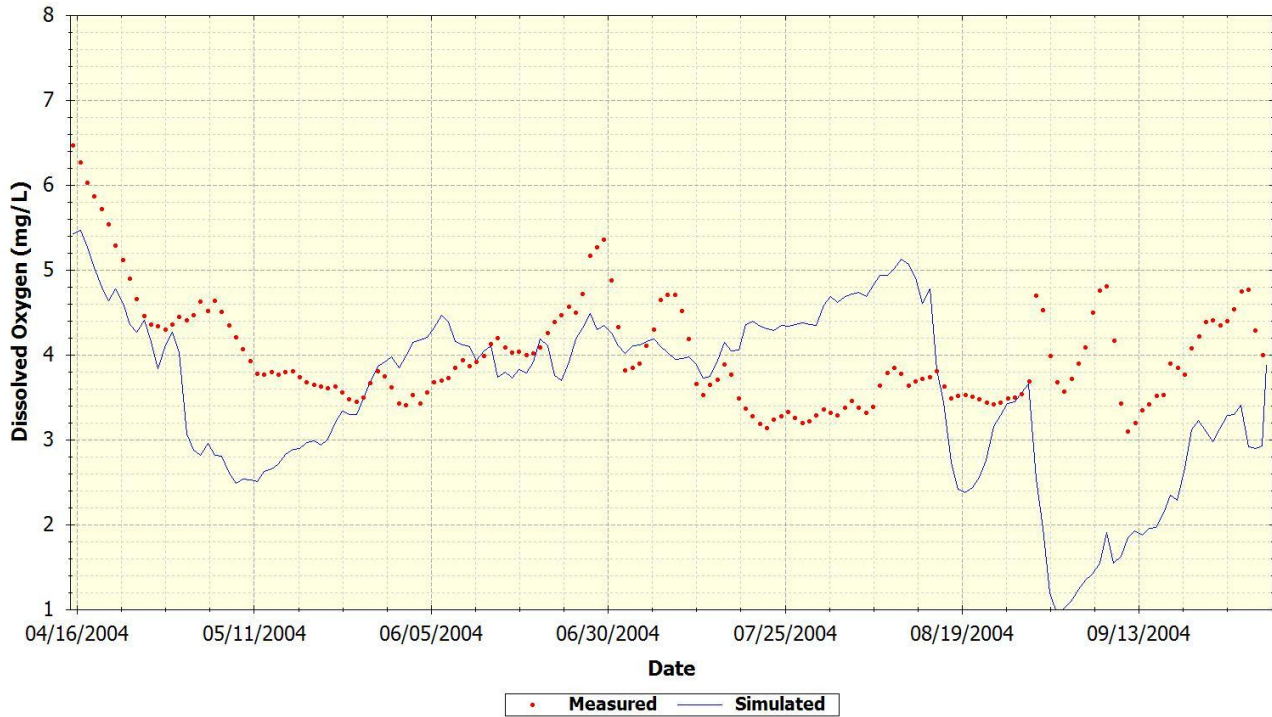


Figure D-21 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172084 – Ashley River at Bakers Landing

### USGS 02172084 Ashley River at Bakers Landing

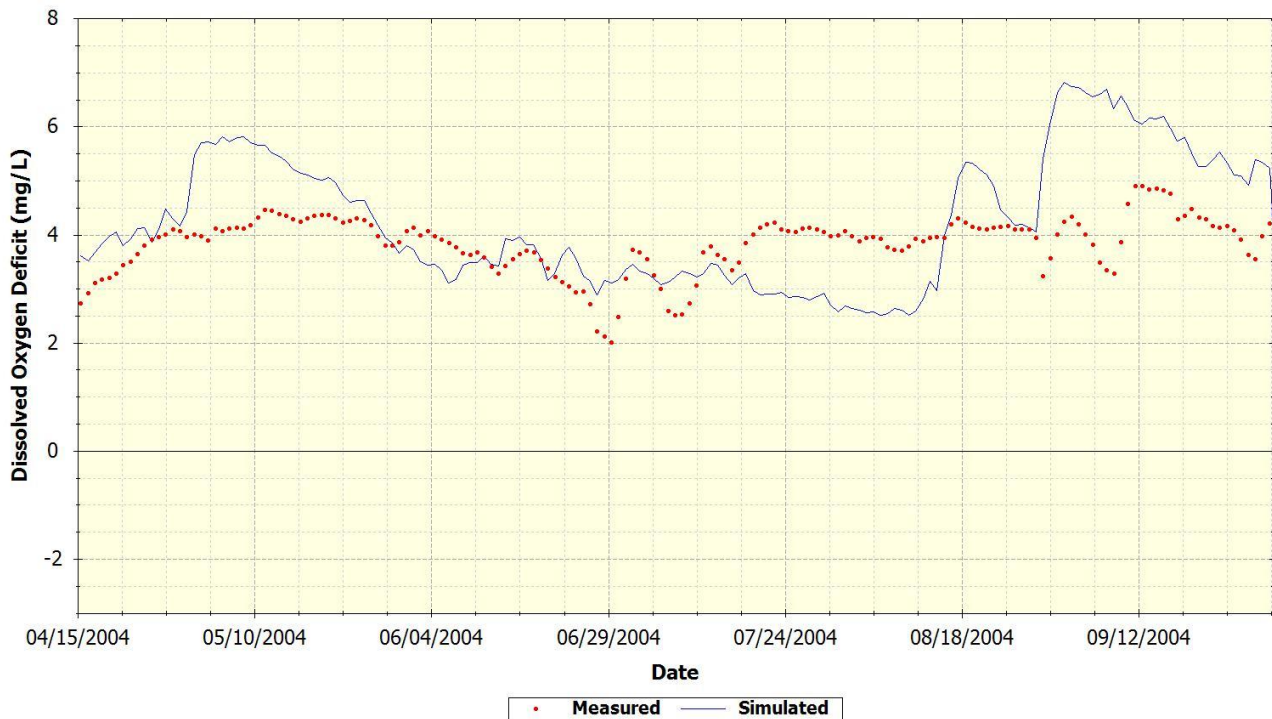


Figure D-22 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172084 – Ashley River at Bakers Landing

USGS 02172086.9 Ashley River near North Charleston

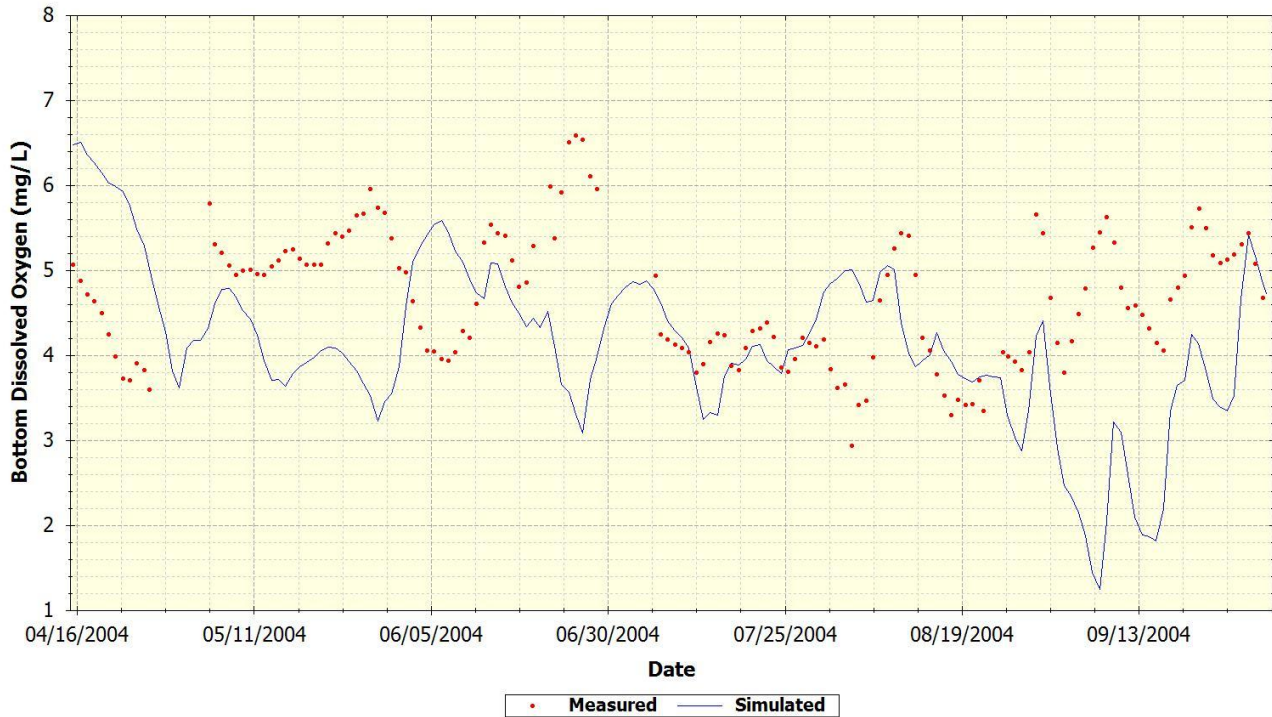


Figure D-23 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172086.9 (Bottom) – Ashley River at I-526

USGS 02172086.9 Ashley River near North Charleston

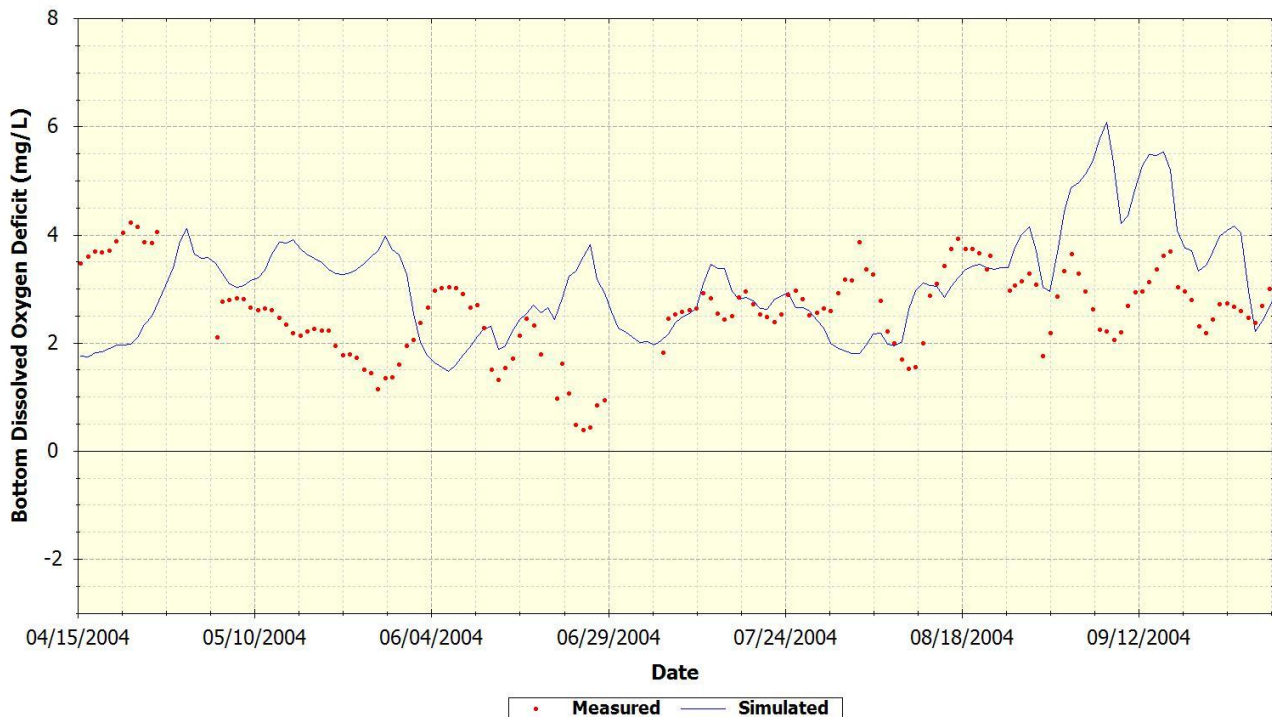


Figure D-24 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172086.9 (Bottom) – Ashley River at I-526

USGS 02172086.9 Ashley River near North Charleston

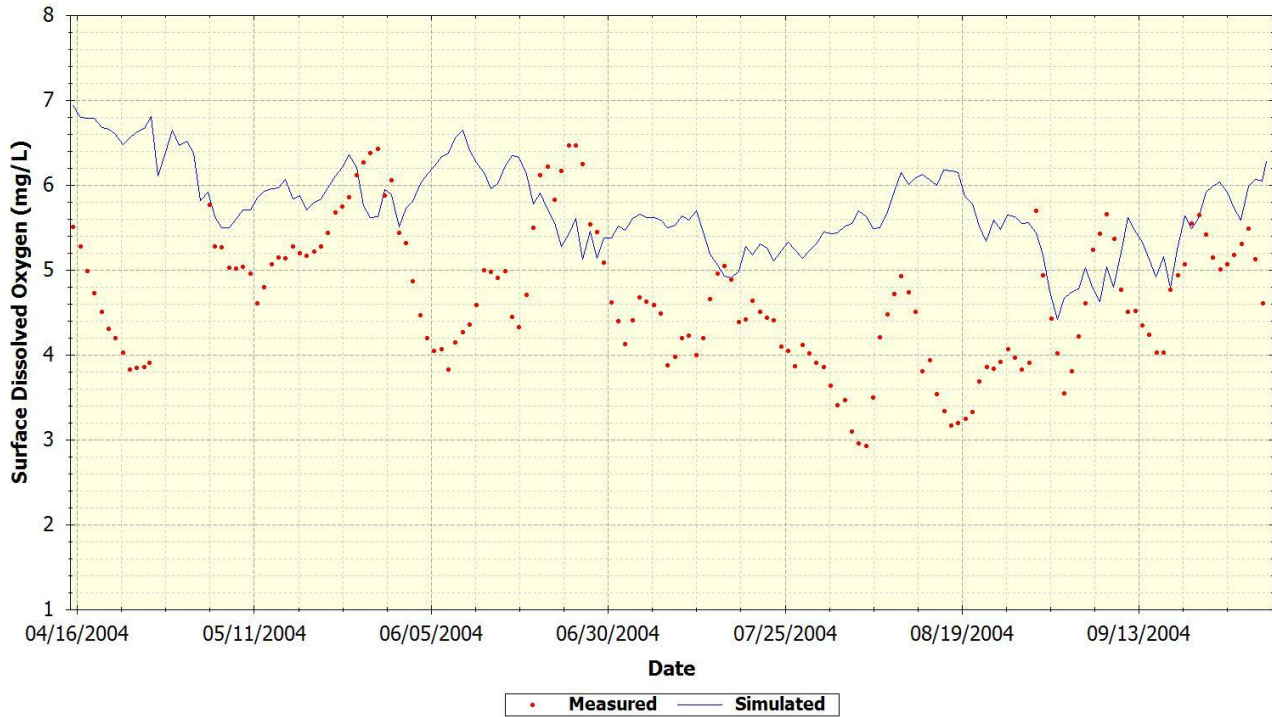


Figure D-25 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172086.9 (Surface) – Ashley River at I-526

USGS 02172086.9 Ashley River near North Charleston

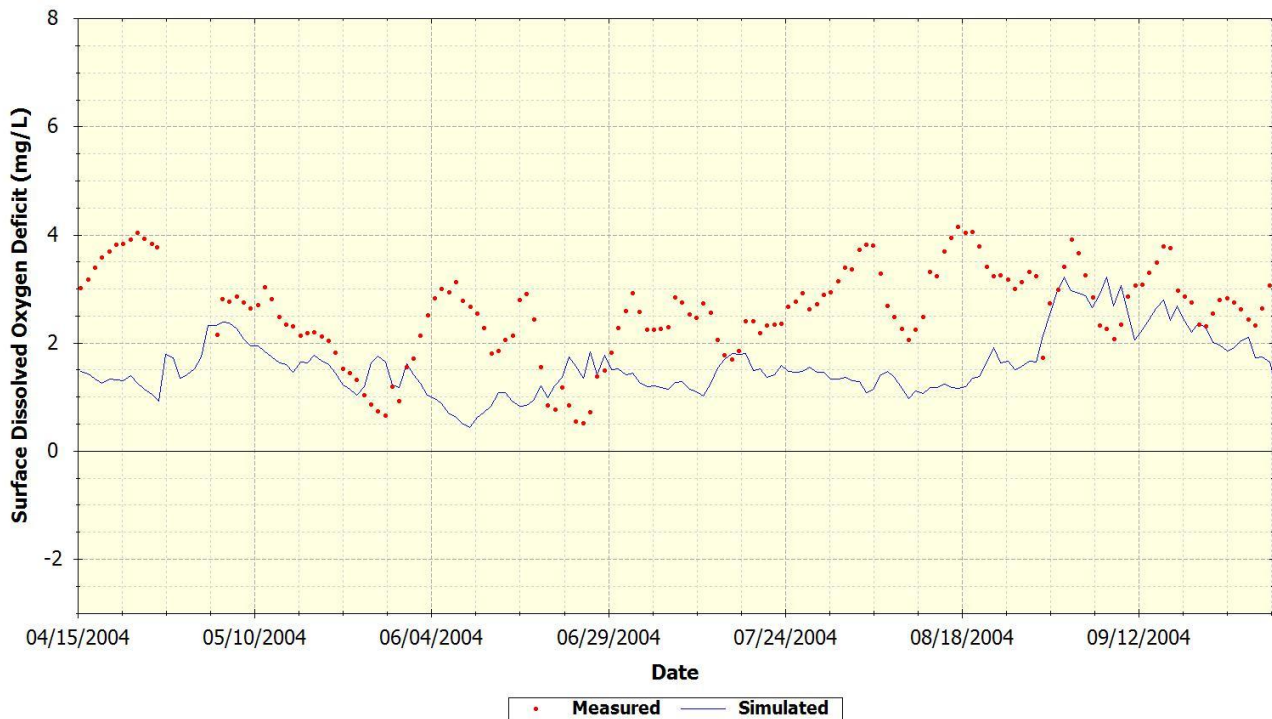


Figure D-26 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172086.9 (Surface) – Ashley River at I-526

USGS 02172100 Charleston Harbor at Fort Sumter

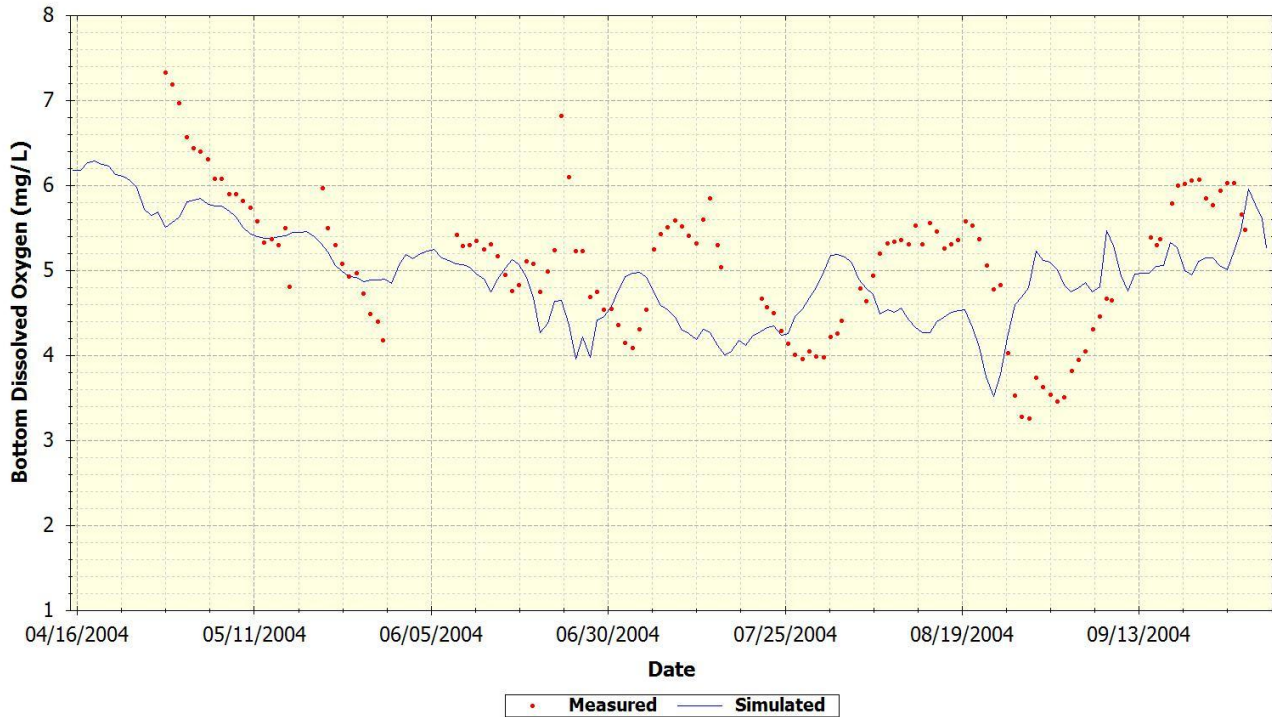


Figure D-27 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172100 (Bottom) – Charleston Harbor at Fort Sumter

USGS 02172100 Charleston Harbor at Fort Sumter

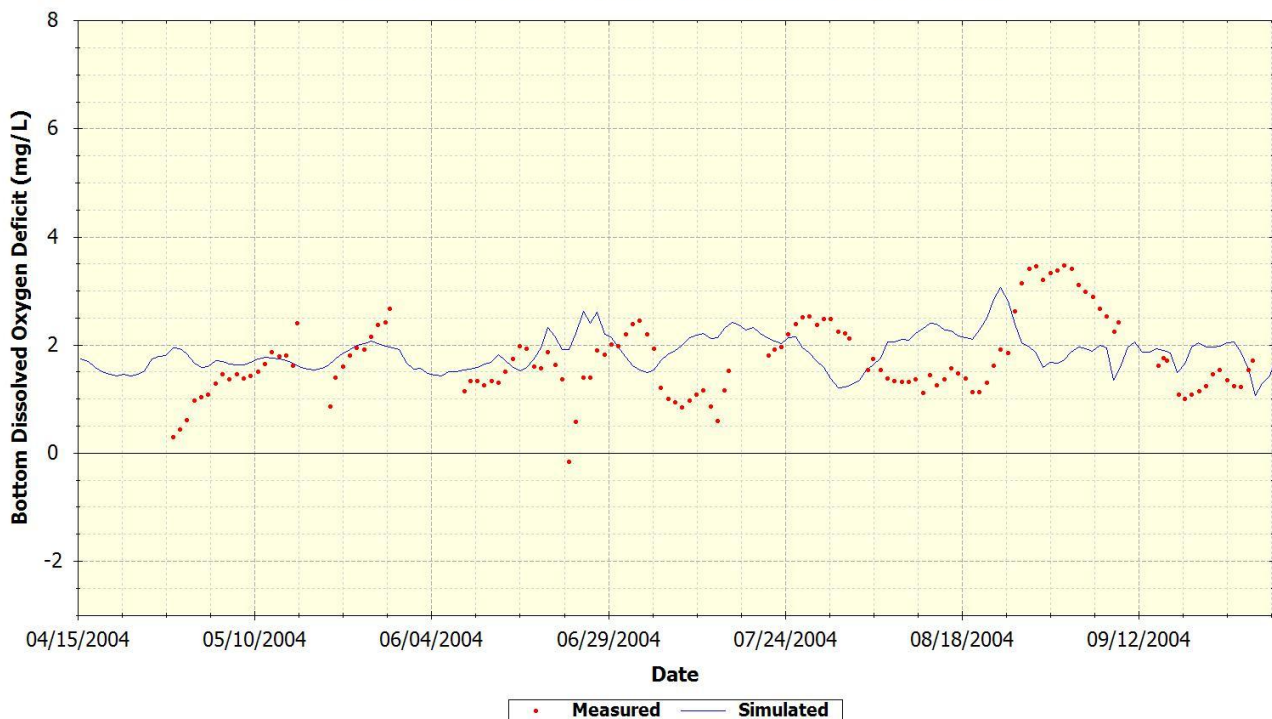


Figure D-28 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172100 (Bottom) – Charleston Harbor at Fort Sumter

USGS 02172100 Charleston Harbor at Fort Sumter

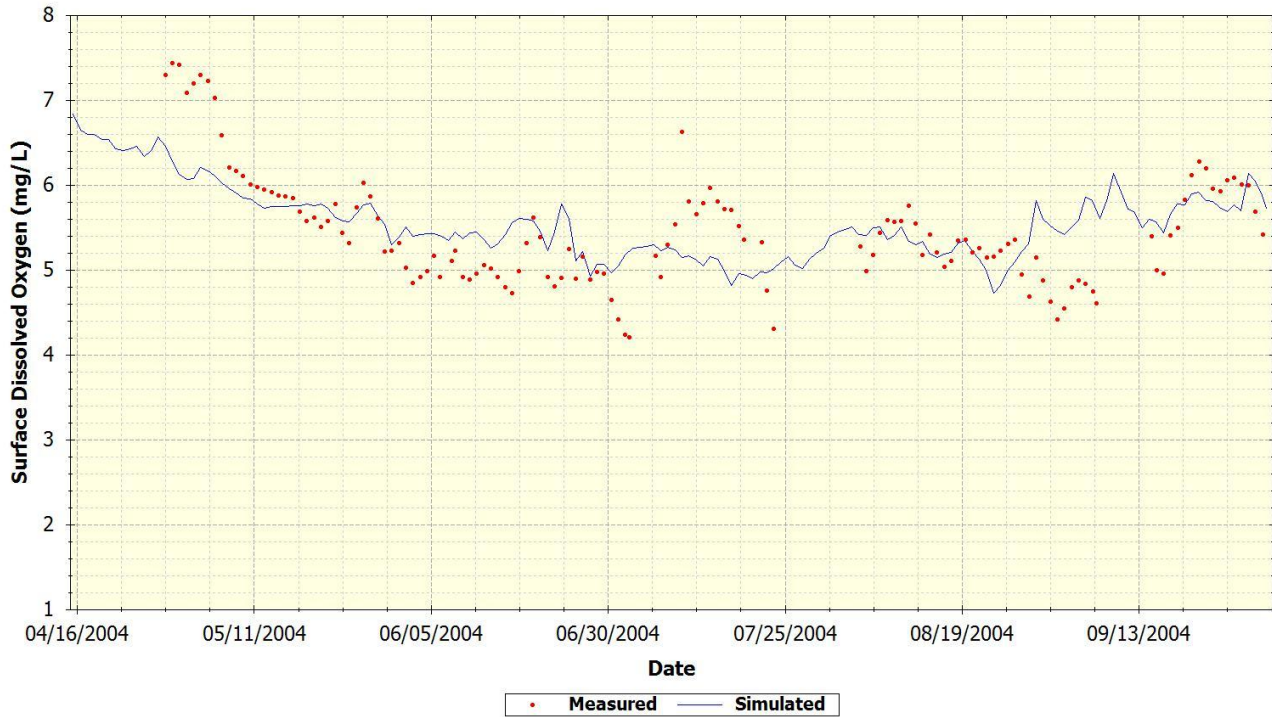


Figure D-29 2004 Measured versus Simulated Daily Average Dissolved Oxygen at Station USGS 2172100 (Surface) – Charleston Harbor at Fort Sumter

USGS 02172100 Charleston Harbor at Fort Sumter

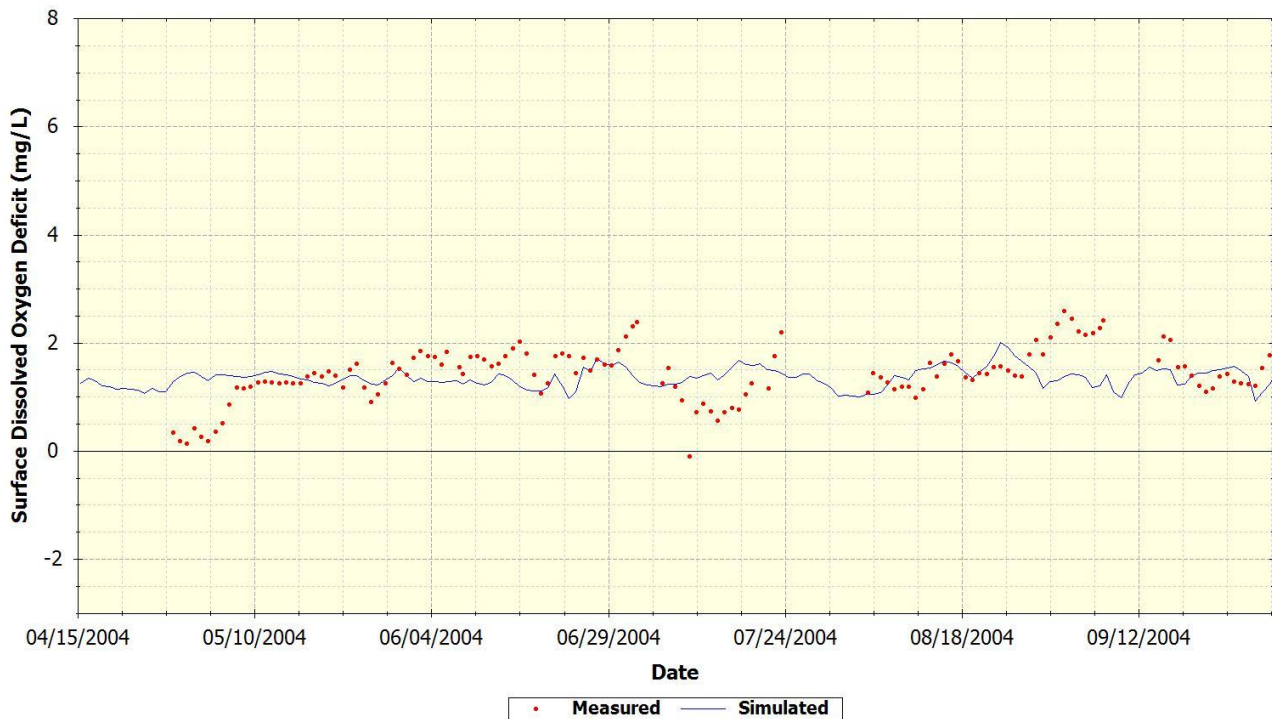


Figure D-30 2004 Measured versus Simulated Daily Average Dissolved Oxygen Deficit at Station USGS 2172100 (Surface) – Charleston Harbor at Fort Sumter

**JJG-WQ-C1 - Lower Cooper River**

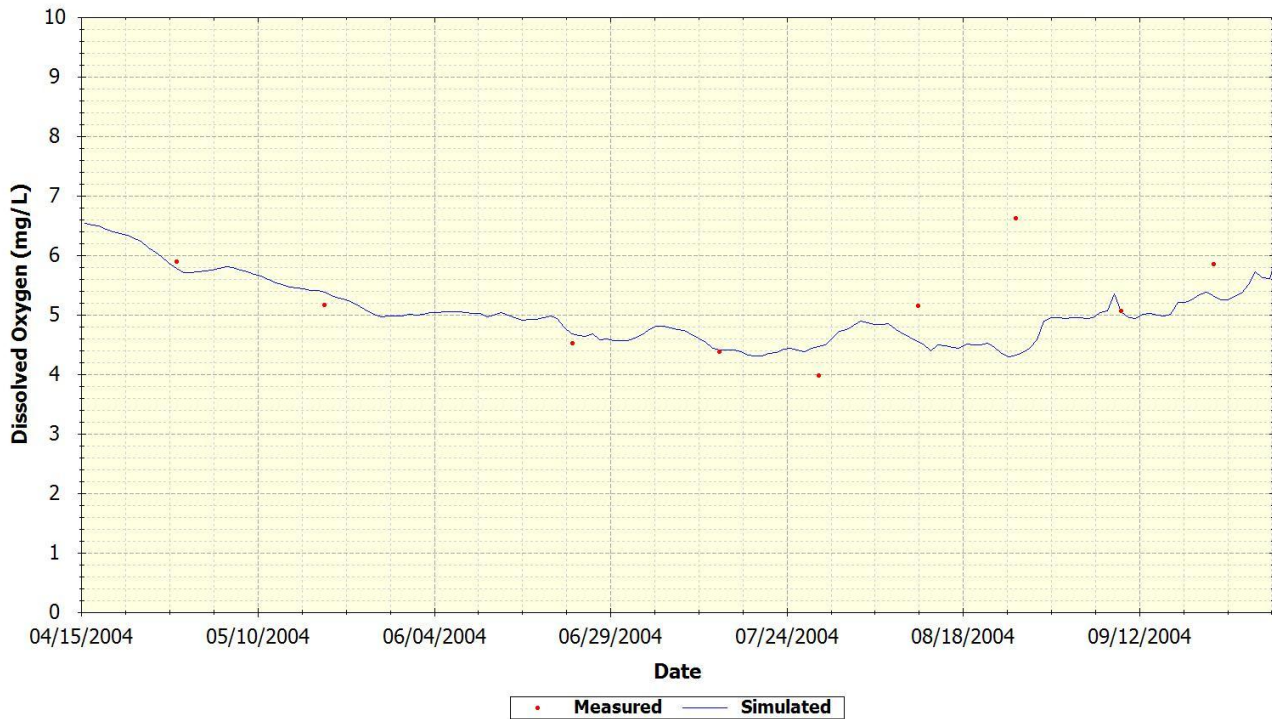


Figure D-31 2004 Measured versus Simulated Daily Average Dissolved Oxygen on Cooper River at Station JJG-WQ-C1

**JJG-WQ-C3 - Cooper River ds Steam Plant**



Figure D-32 2004 Measured versus Simulated Daily Average Dissolved Oxygen on Cooper River at Station JJG-WQ-C3 downstream (ds) of Steam Plant



**JJG-WQ-A1 - Ashley River near mouth**

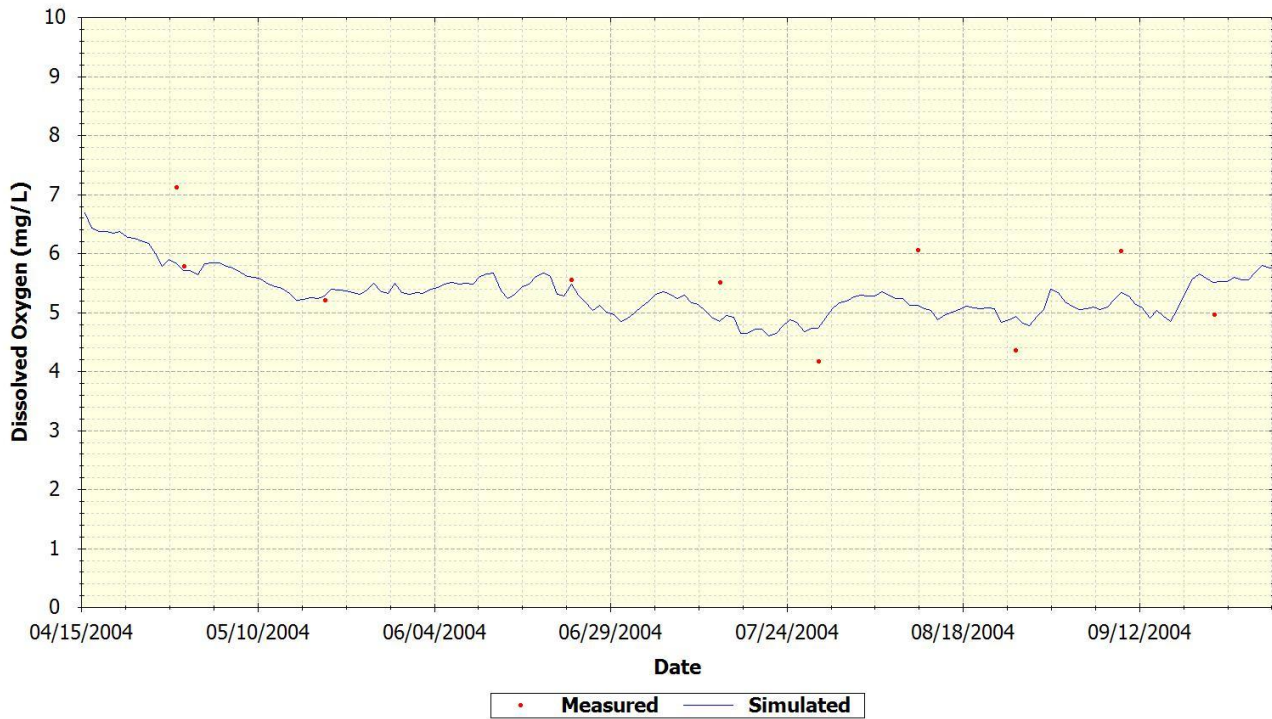


Figure D-33 2004 Measured versus Simulated Daily Average Dissolved Oxygen on Ashley River at Station JJG-WQ-A1

**JJG-WQ-A4 - Ashley River Up Stream of Dorchester**

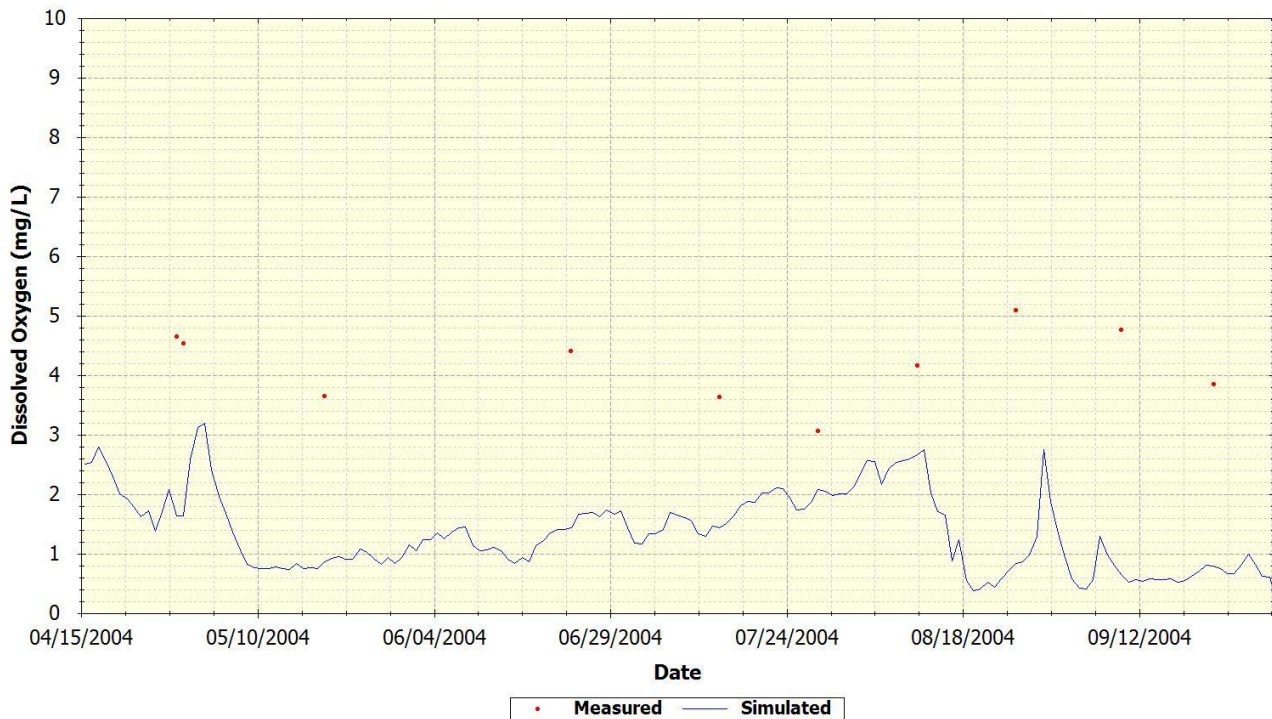


Figure D-34 2004 Measured versus Simulated Daily Average Dissolved Oxygen on Ashley River at Station JJG-WQ-A4

### JJG-WQ-H2 - Charleston Harbor - Channel Center

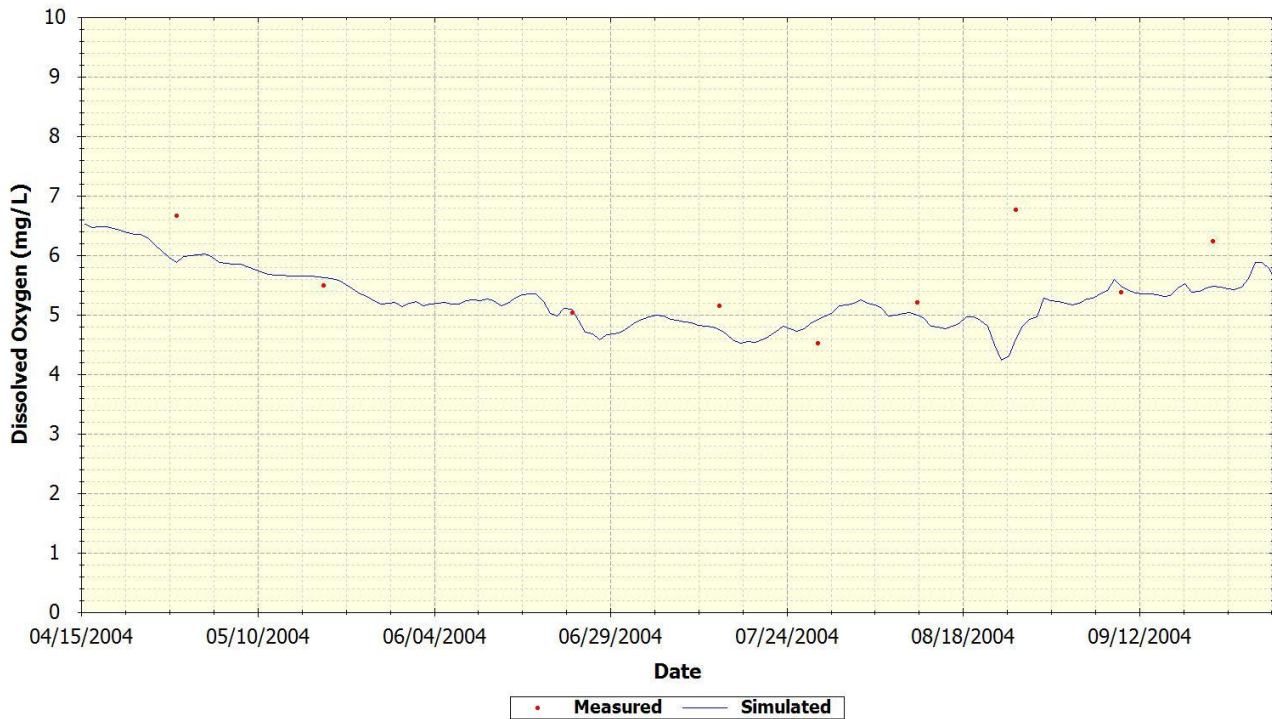


Figure D-35 2004 Measured versus Simulated Daily Average Dissolved Oxygen on Charleston Harbor at Station JJG-WQ-H2

### JJG-WQ-C1 - Lower Cooper River

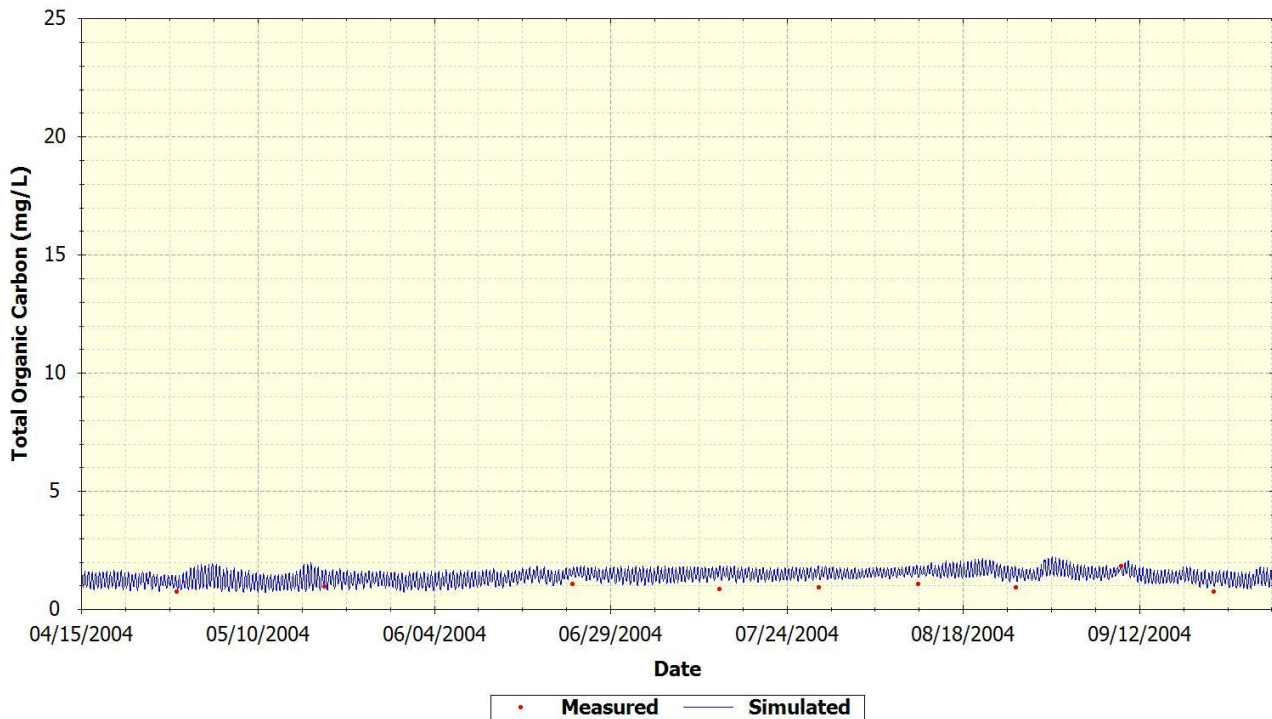


Figure D-36 2004 Measured versus Simulated Total Organic Carbon on Cooper River at Station JJG-WQ-C1

**JJG-WQ-C2 - Cooper River at 526 bridge**

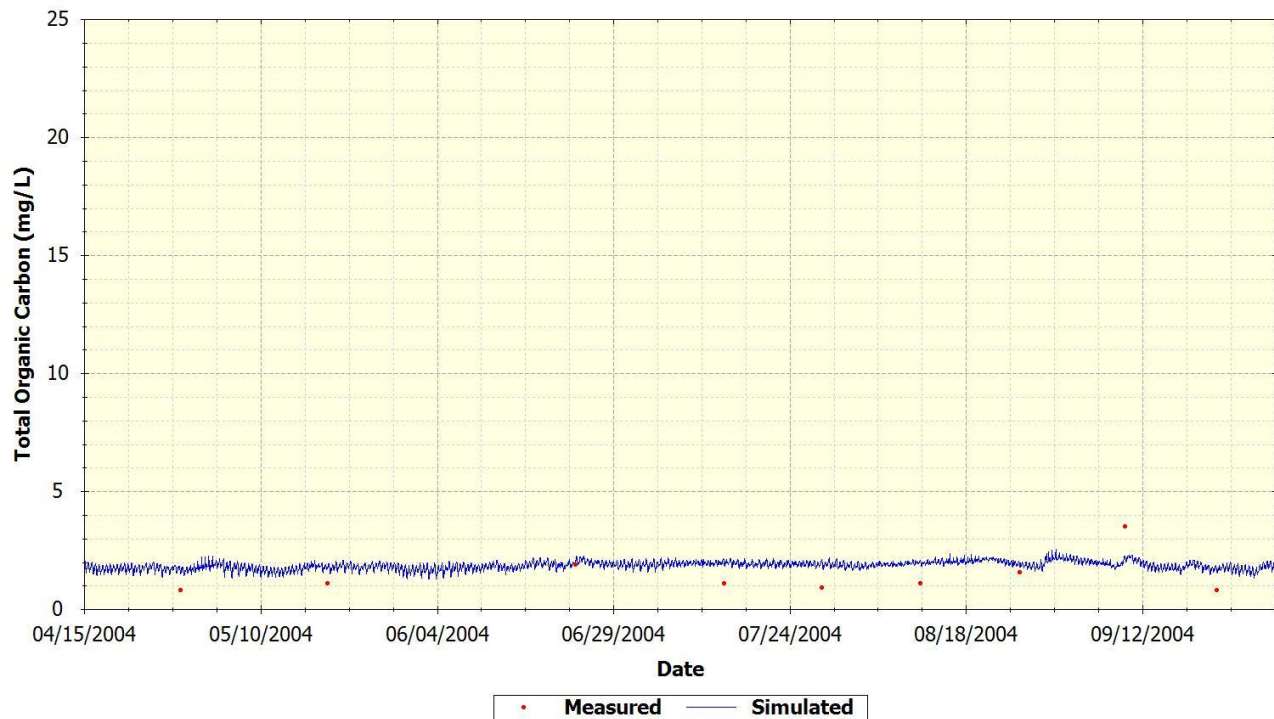


Figure D-37 2004 Measured versus Simulated Total Organic Carbon on Cooper River at Station JJG-WQ-C2

**JJG-WQ-C3 - Cooper River ds Steam Plant**

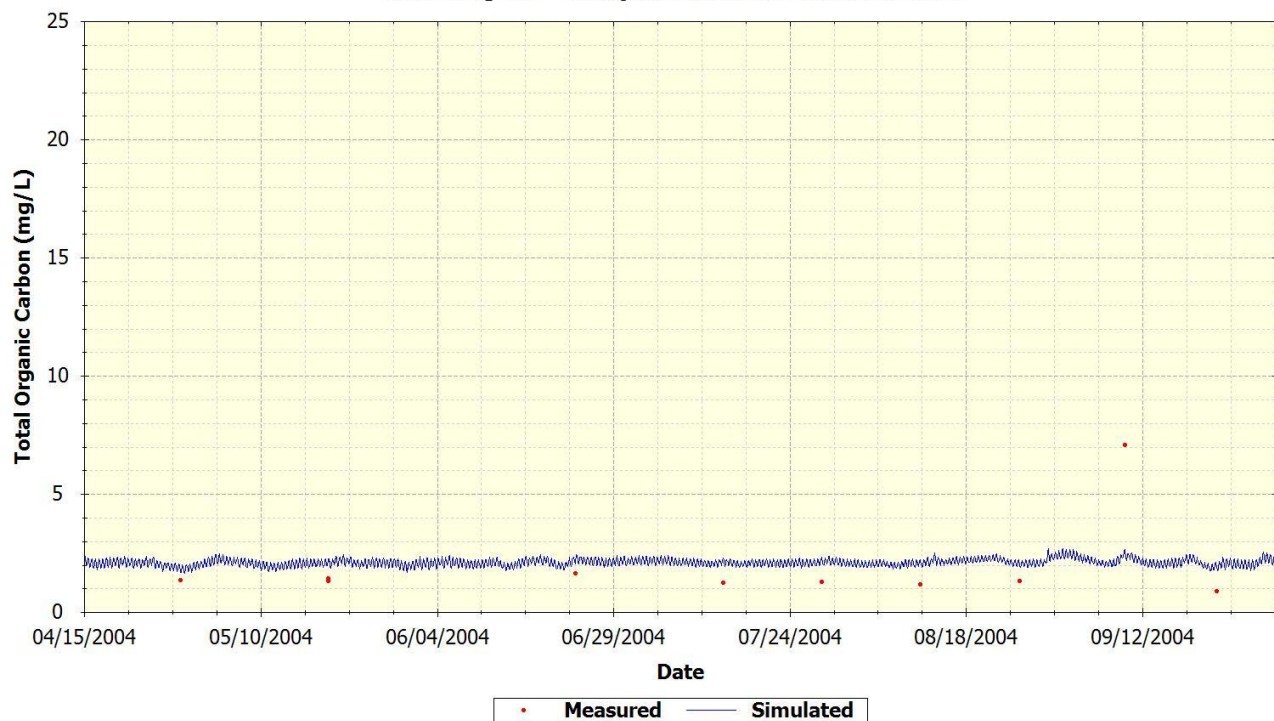


Figure D-38 2004 Measured versus Simulated Total Organic Carbon on Cooper River at Station JJG-WQ-C3

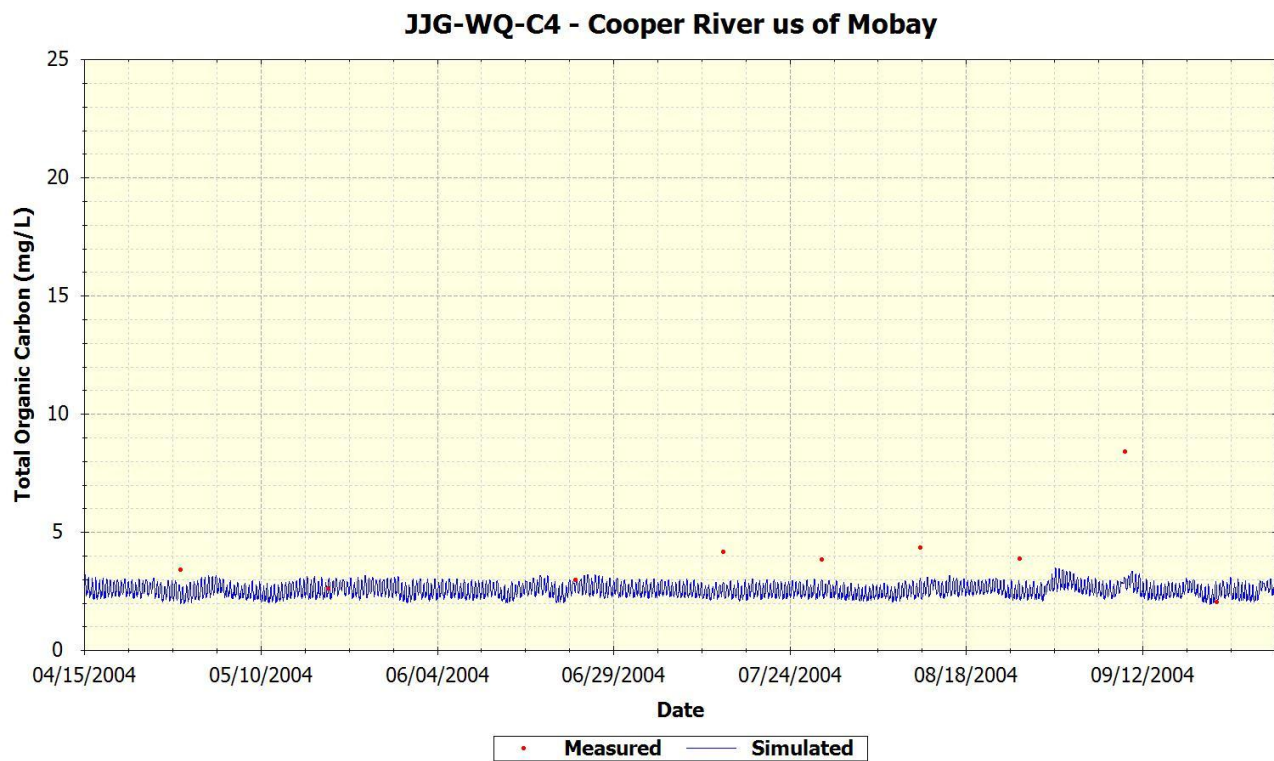


Figure D-39 2004 Measured versus Simulated Total Organic Carbon on Cooper River at Station JJG-WQ-C4

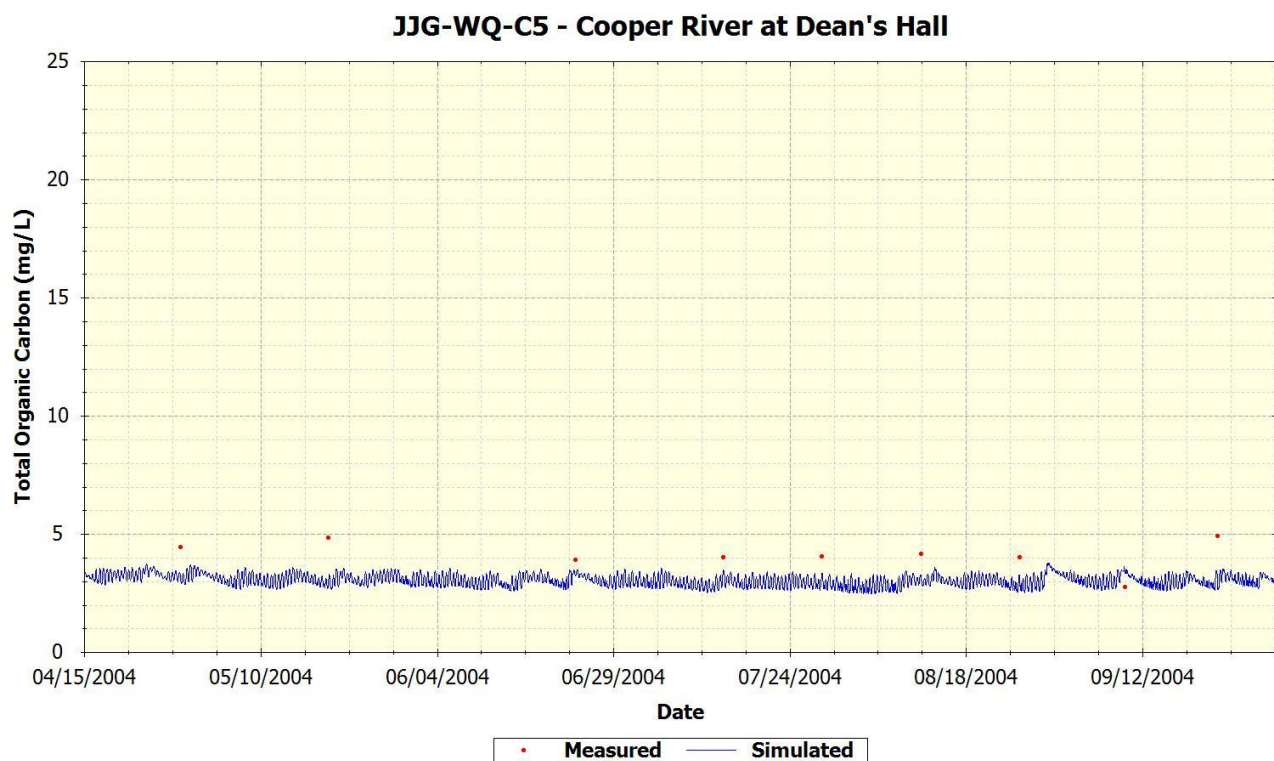


Figure D-40 2004 Measured versus Simulated Total Organic Carbon on Cooper River at Station JJG-WQ-C5

### JJG-WQ-A1 - Ashley River near mouth

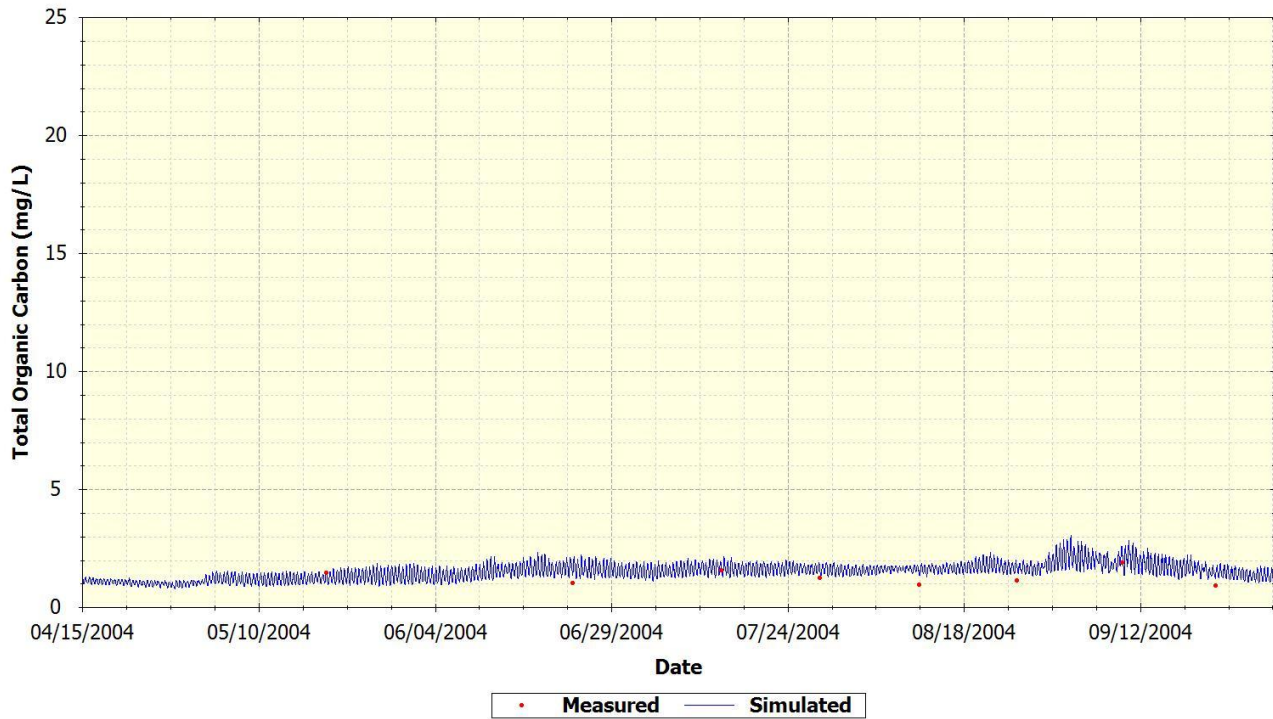


Figure D-41 2004 Measured versus Simulated Total Organic Carbon on Ashley River at Station JJG-WQ-A1

### JJG-WQ-A2 - Ashley River ds 526 bridge

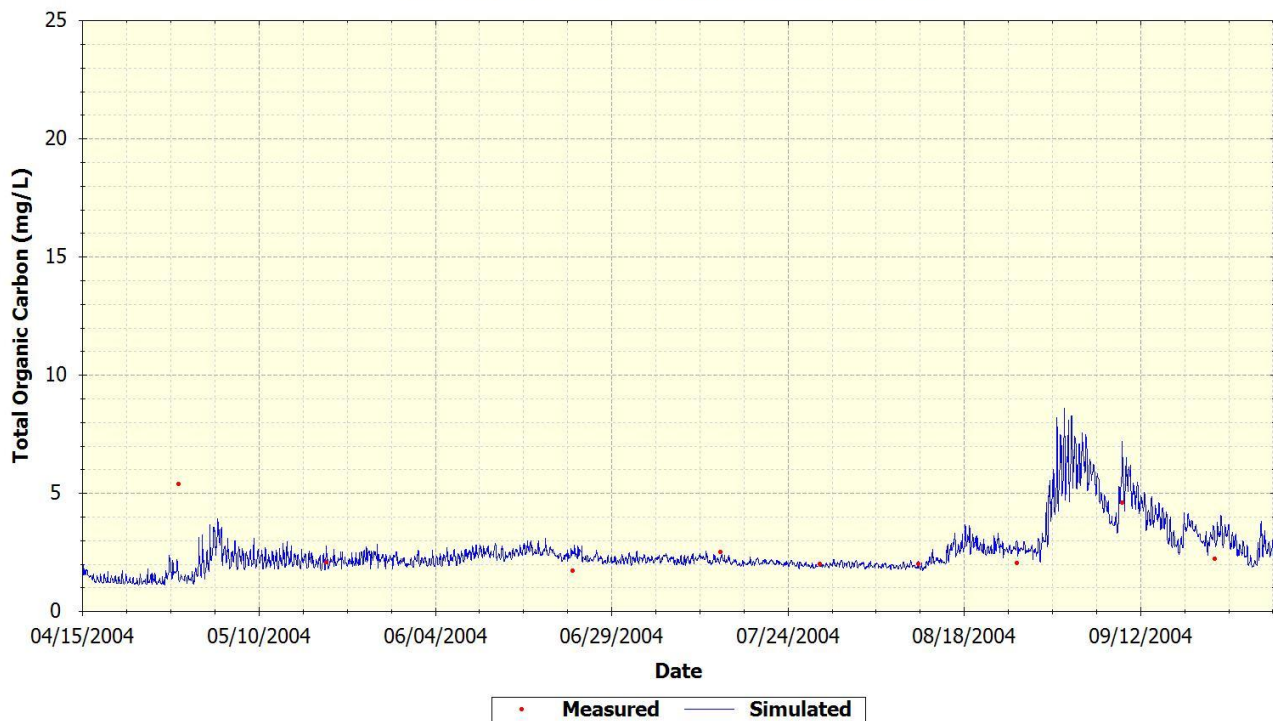


Figure D-42 2004 Measured versus Simulated Total Organic Carbon on Ashley River at Station JJG-WQ-A2

### JJG-WQ-A3 - Ashley River at Magnolia Gardens

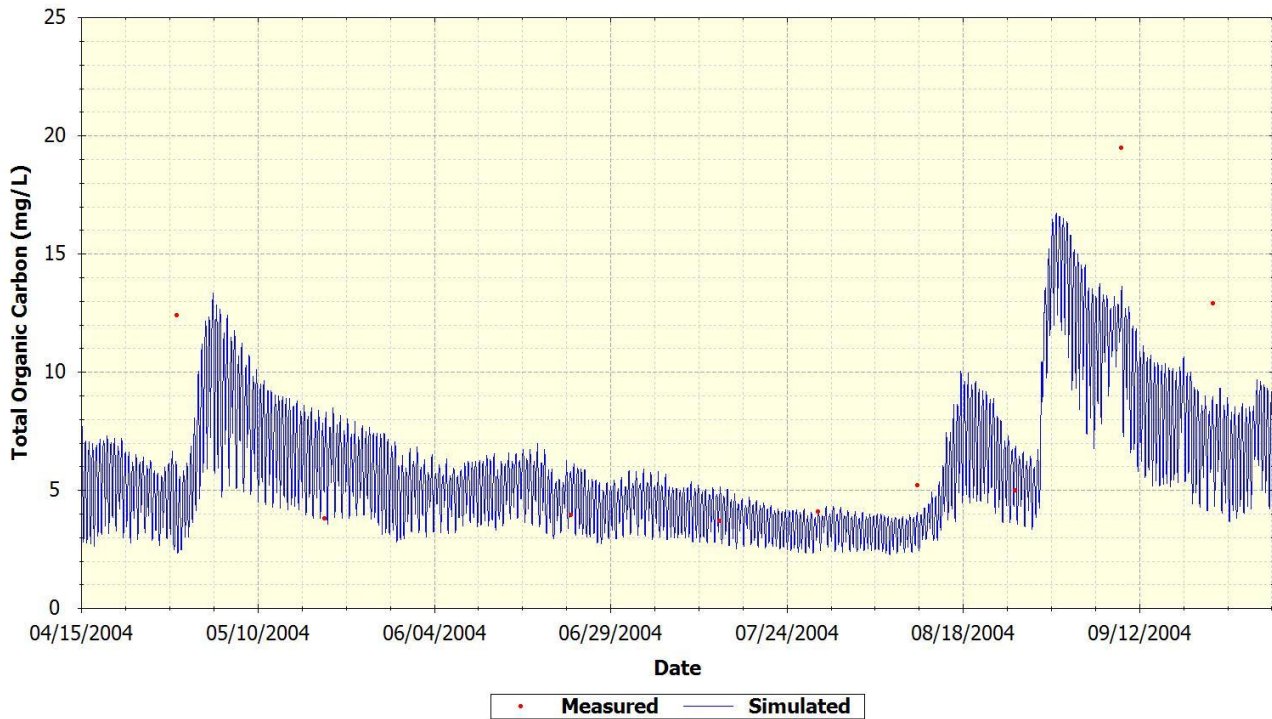


Figure D-43 2004 Measured versus Simulated Total Organic Carbon on Ashley River at Station JJG-WQ-A3

### JJG-WQ-A4 - Ashley River Up Stream of Dorchester

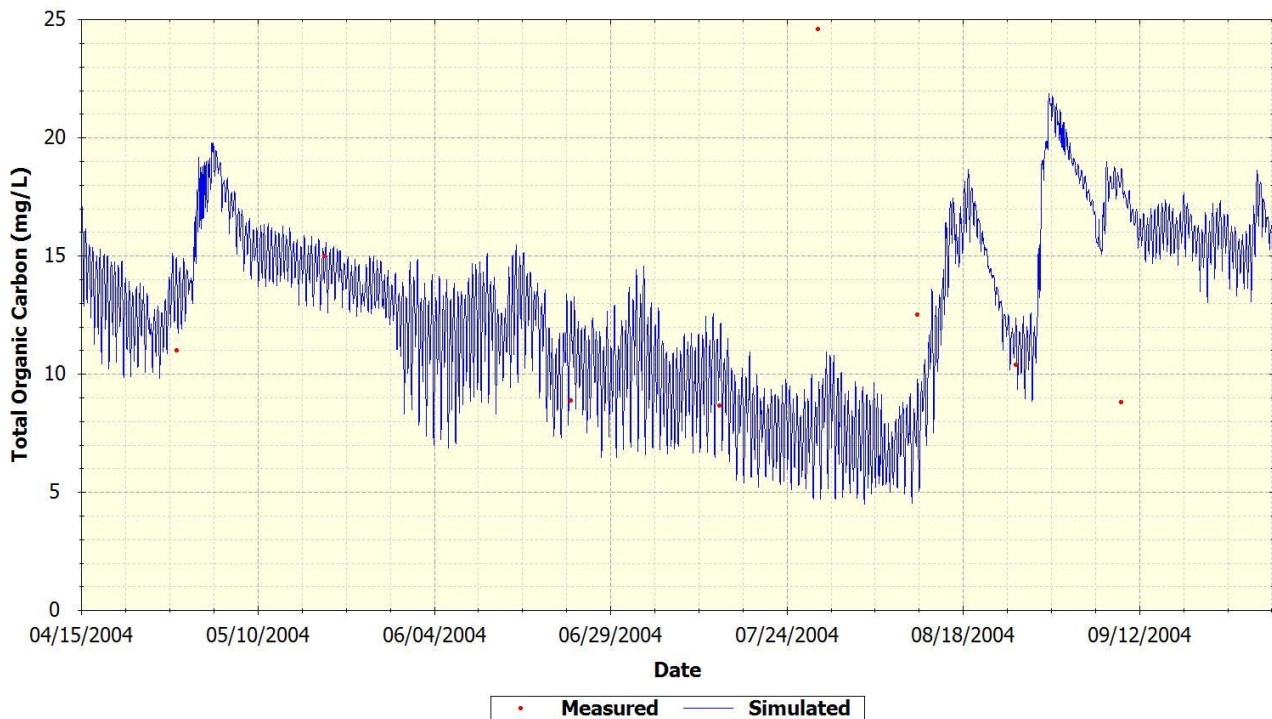


Figure D-44 2004 Measured versus Simulated Total Organic Carbon on Ashley River at Station JJG-WQ-A4

### JJG-WQ-W1 - Wando River at 526 Bridge

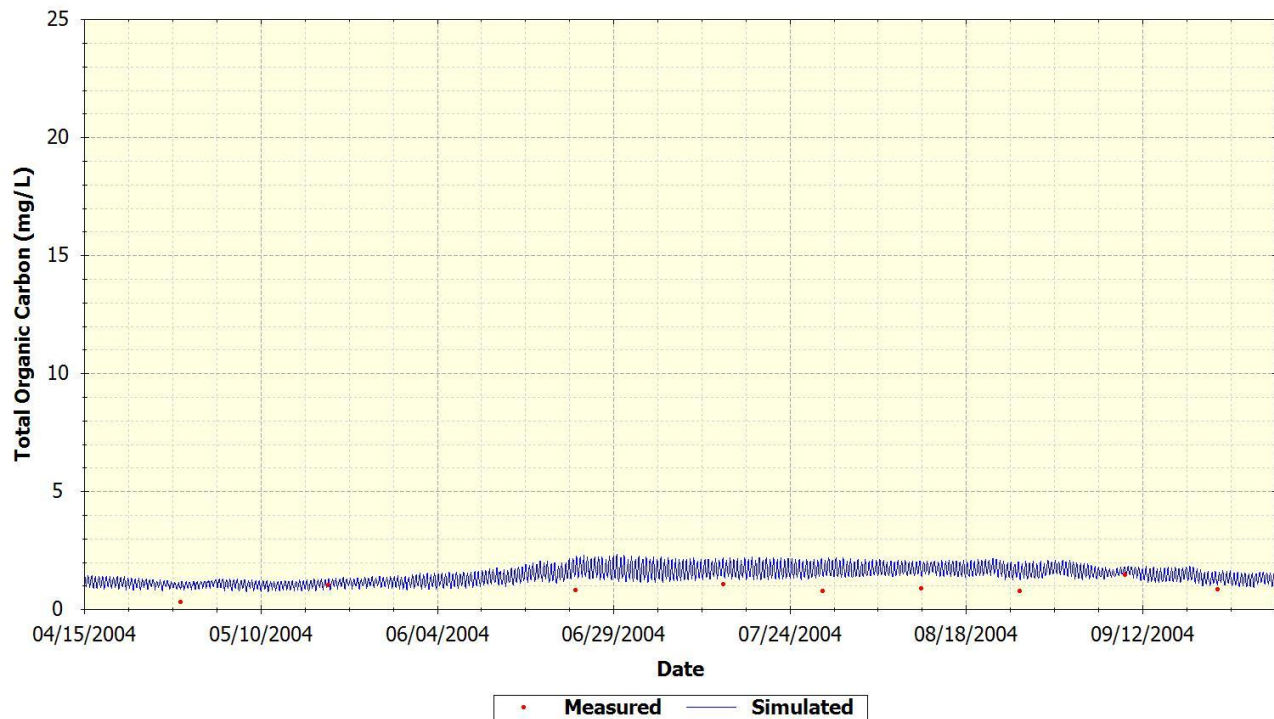


Figure D-45 2004 Measured versus Simulated Total Organic Carbon on Wando River at Station JJG-WQ-W1

### JJG-WQ-W2 - Wando River near Cainhoy

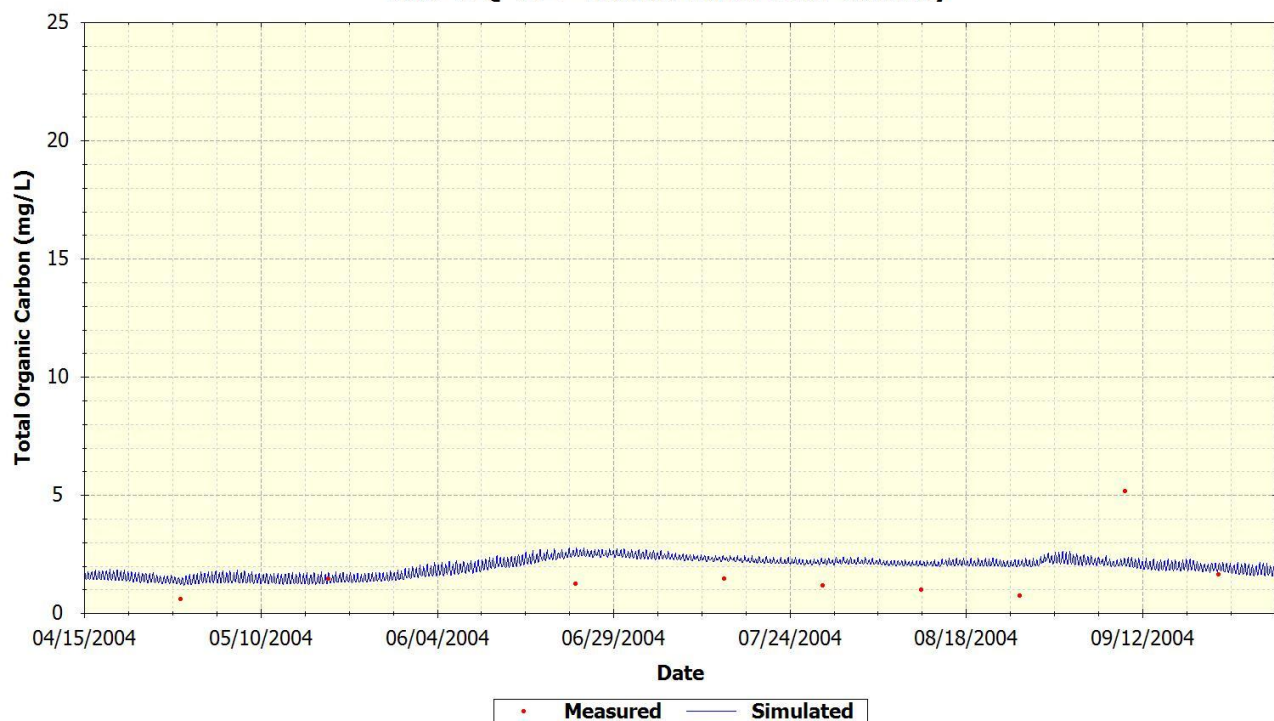


Figure D-46 2004 Measured versus Simulated Total Organic Carbon on Wando River at Station JJG-WQ-W2

### JJG-WQ-H1 - Charleston Harbor at the mouth

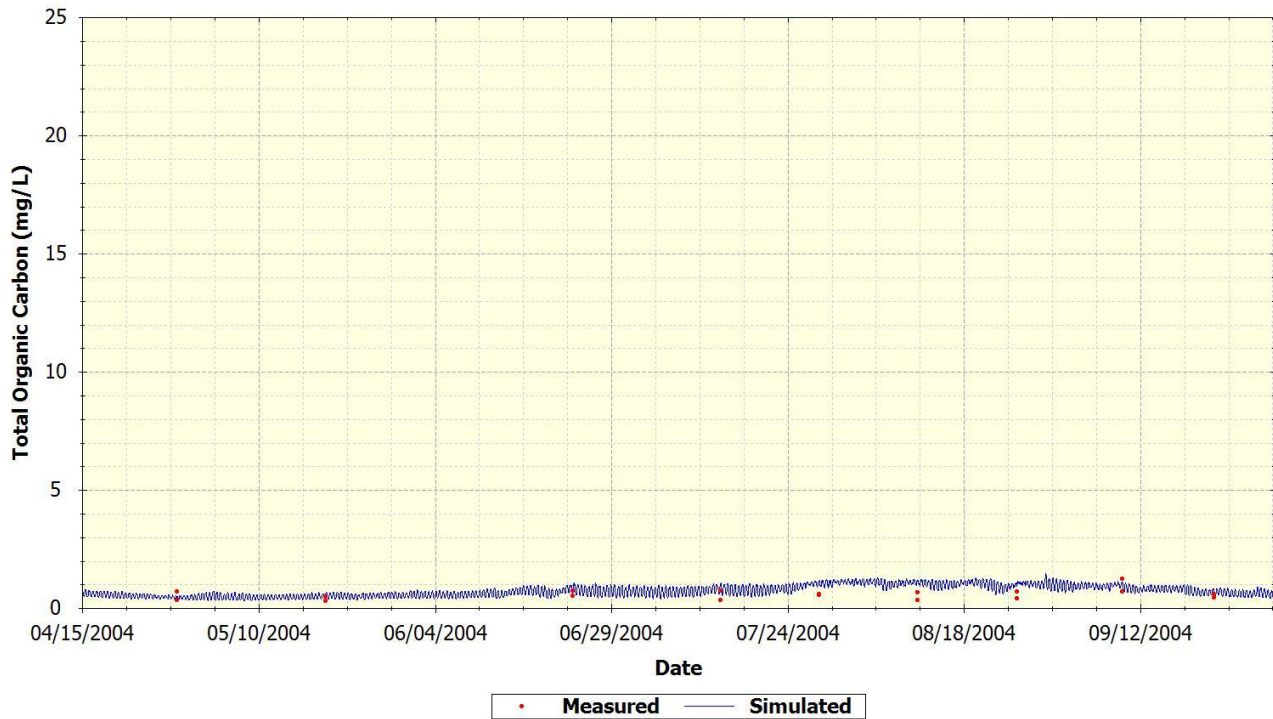


Figure D-47 2004 Measured versus Simulated Total Organic Carbon on Charleston Harbor River at Station JJG-WQ-H1

### JJG-WQ-H2 - Charleston Harbor - Channel Center

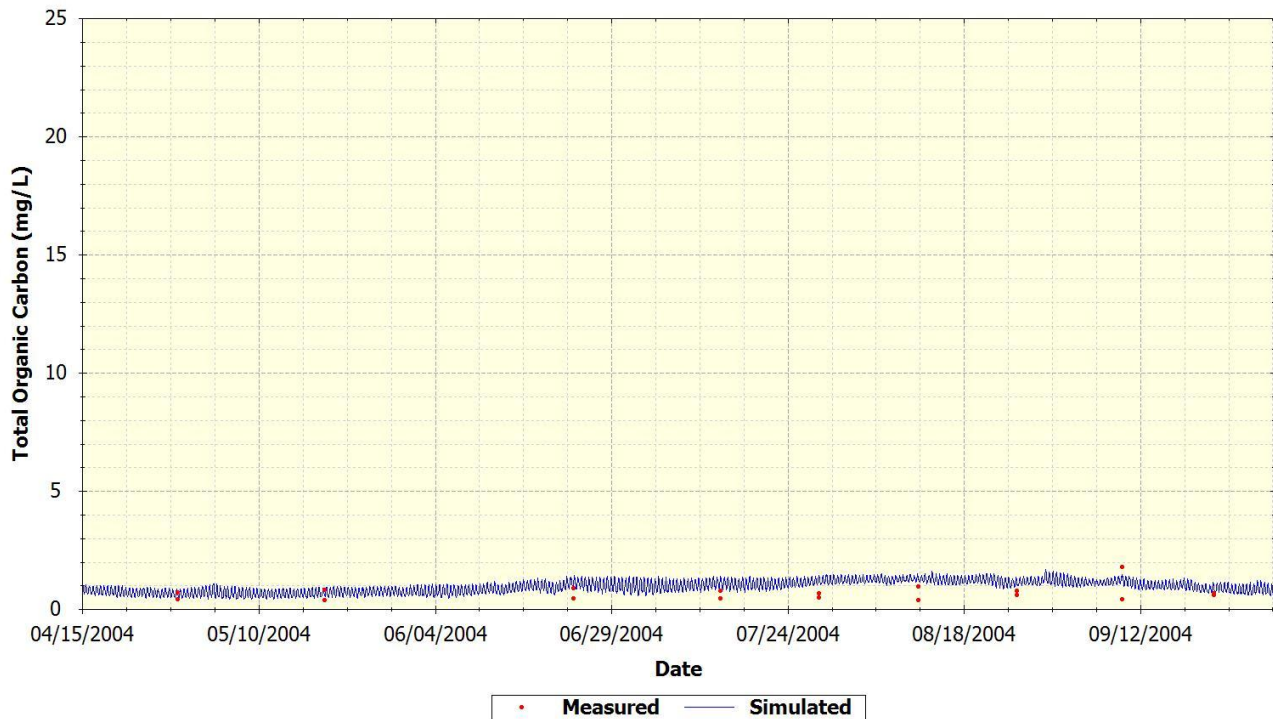


Figure D-48 2004 Measured versus Simulated Total Organic Carbon on Charleston Harbor River at Station JJG-WQ-H2



### JJG-WQ-H3 - Charleston Harbor us Hwy 17

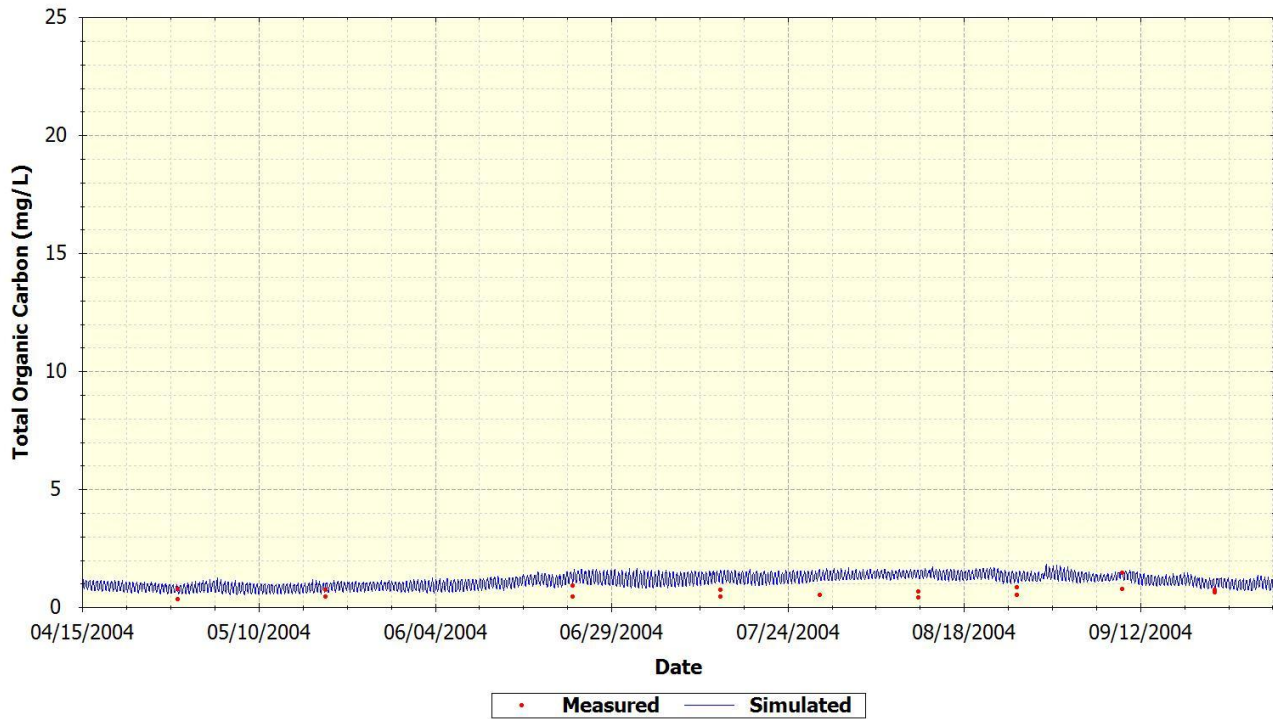


Figure D-49 2004 Measured versus Simulated Total Organic Carbon on Charleston Harbor River at Station JJG-WQ-H3

### JJG-WQ-C1 - Lower Cooper River

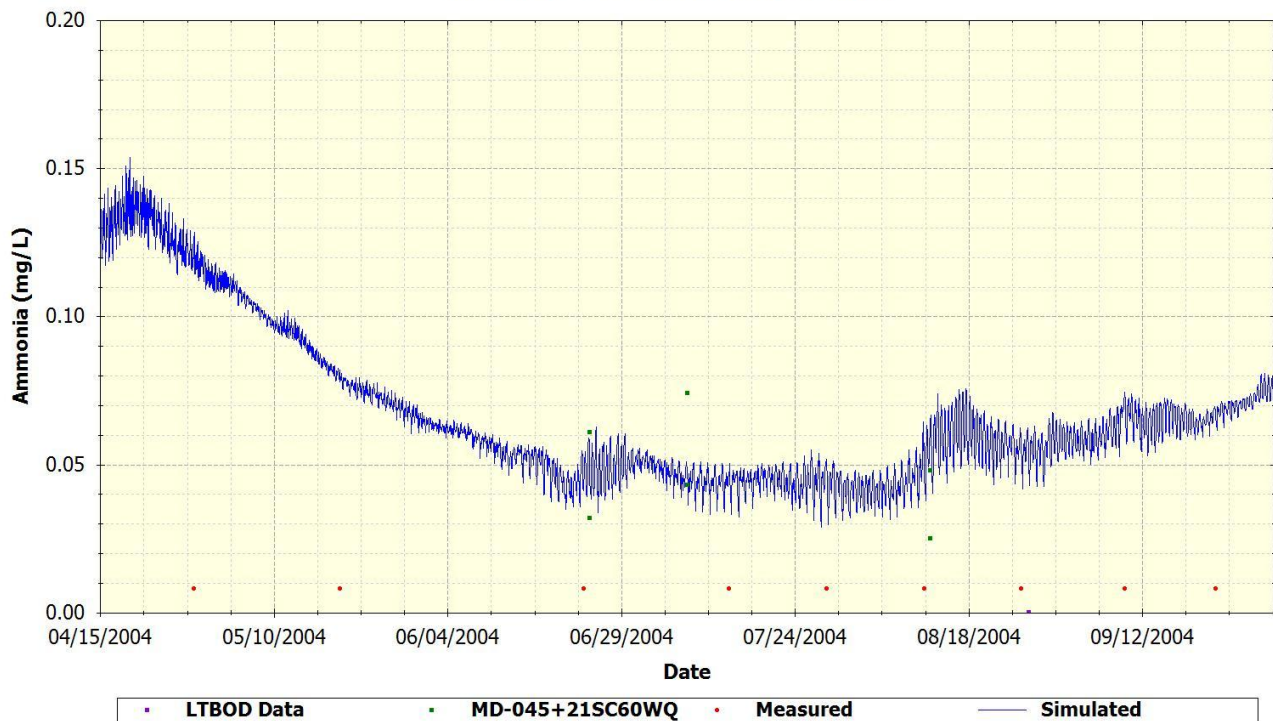


Figure D-50 2004 Measured versus Simulated Ammonia on Cooper River at Station JJG-WQ-C1 (where Measured is JJG-WQ-C1, MD-045 is a SCDHEC measured station, and LTBOD Data was a special data collection effort [Tetra Tech 2008])

### JJG-WQ-C2 - Cooper River at 526 bridge

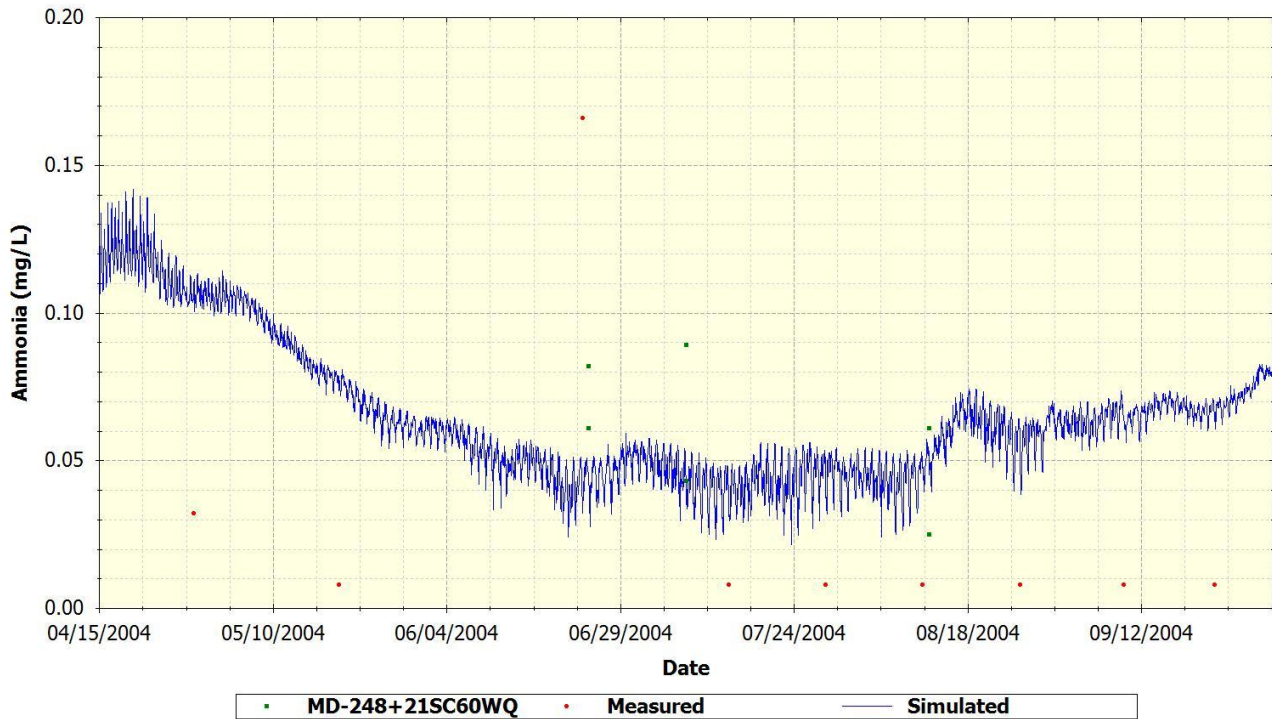


Figure D-51 2004 Measured versus Simulated Ammonia on Cooper River at Station JJG-WQ-C2 (where Measured is JJG-WQ-C2 and MD-248 is a SCDHEC measured station)

### JJG-WQ-C3 - Cooper River ds Steam Plant

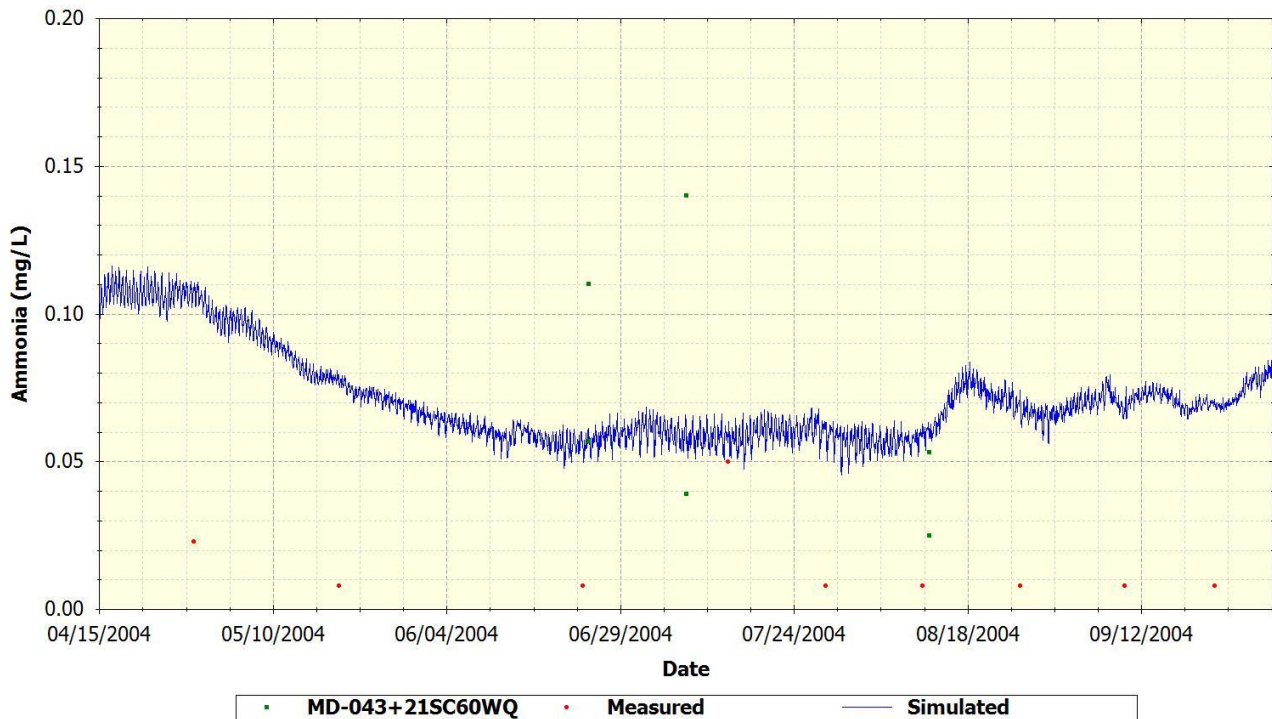


Figure D-52 2004 Measured versus Simulated Ammonia on Cooper River at Station JJG-WQ-C3 (where Measured is JJG-WQ-C3 and MD-043 is a SCDHEC measured station)

### JJG-WQ-C4 - Cooper River us of Mobay

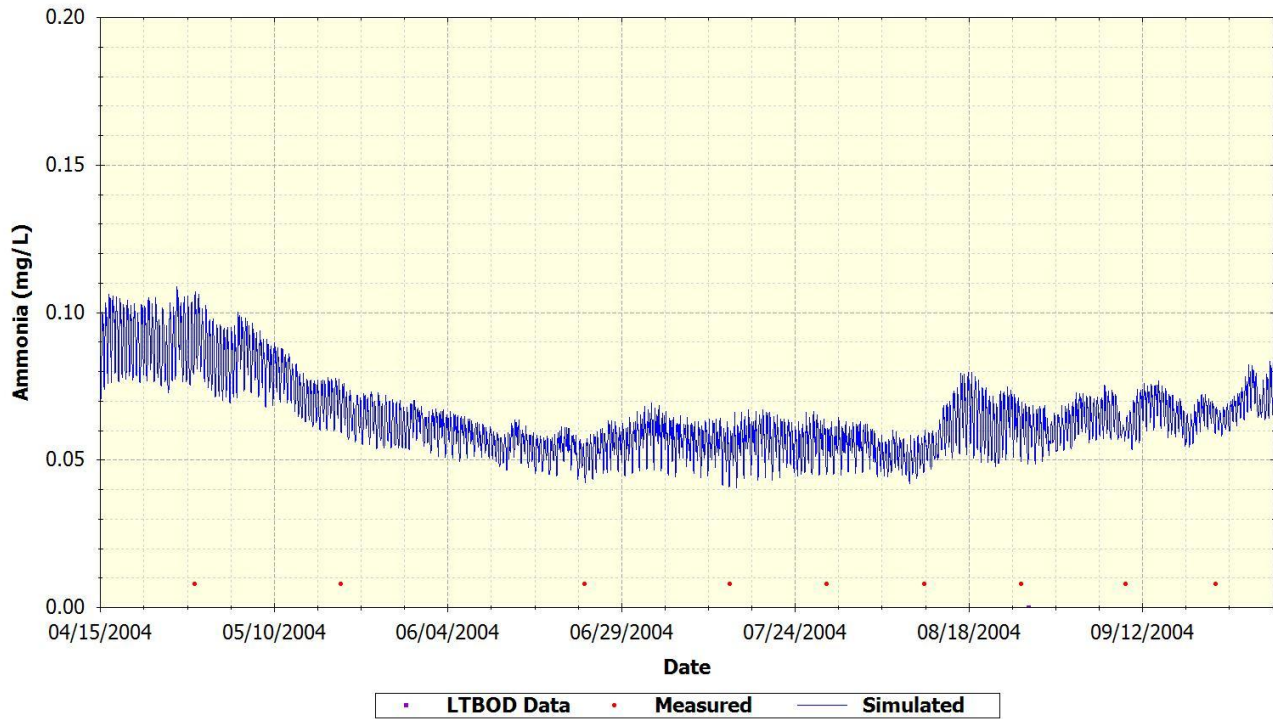


Figure D-53 2004 Measured versus Simulated Ammonia on Cooper River at Station JJG-WQ-C4 (where Measured is JJG-WQ-C4 and LTBOD Data was a special data collection effort [Tetra Tech 2008])

### JJG-WQ-C5 - Cooper River at Dean's Hall

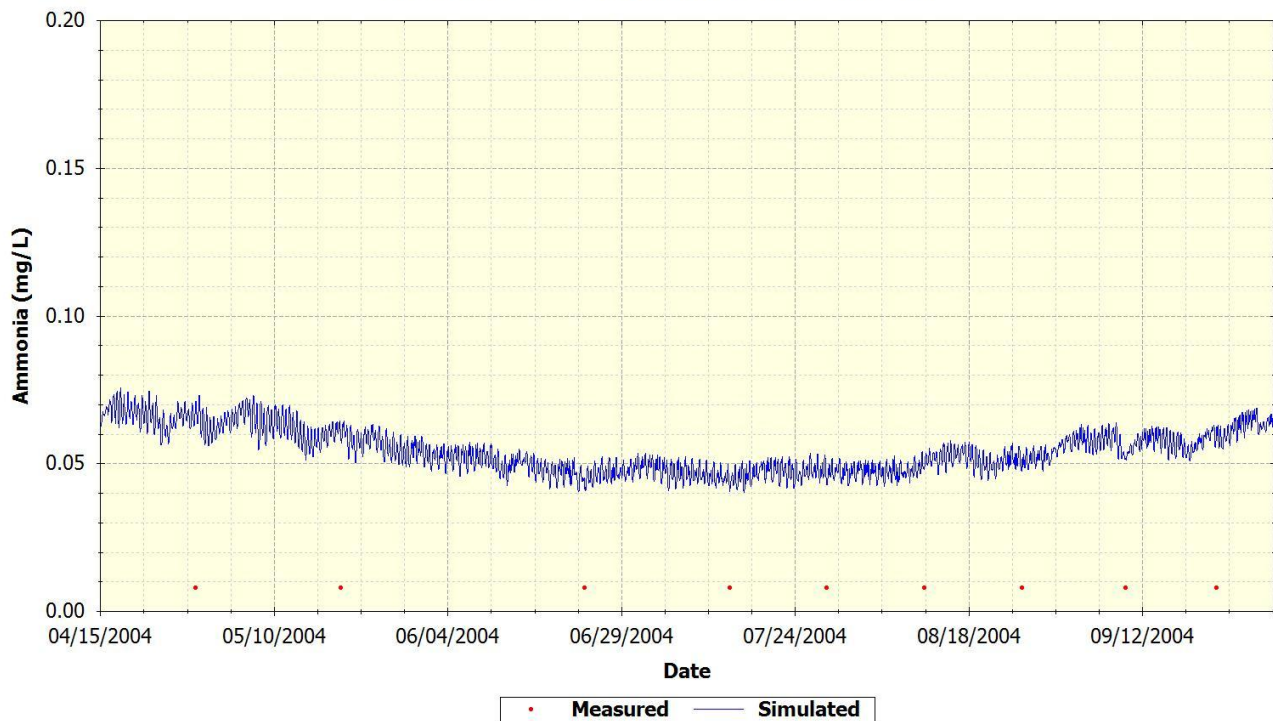


Figure D-54 2004 Measured versus Simulated Ammonia on Cooper River at Station JJG-WQ-C5

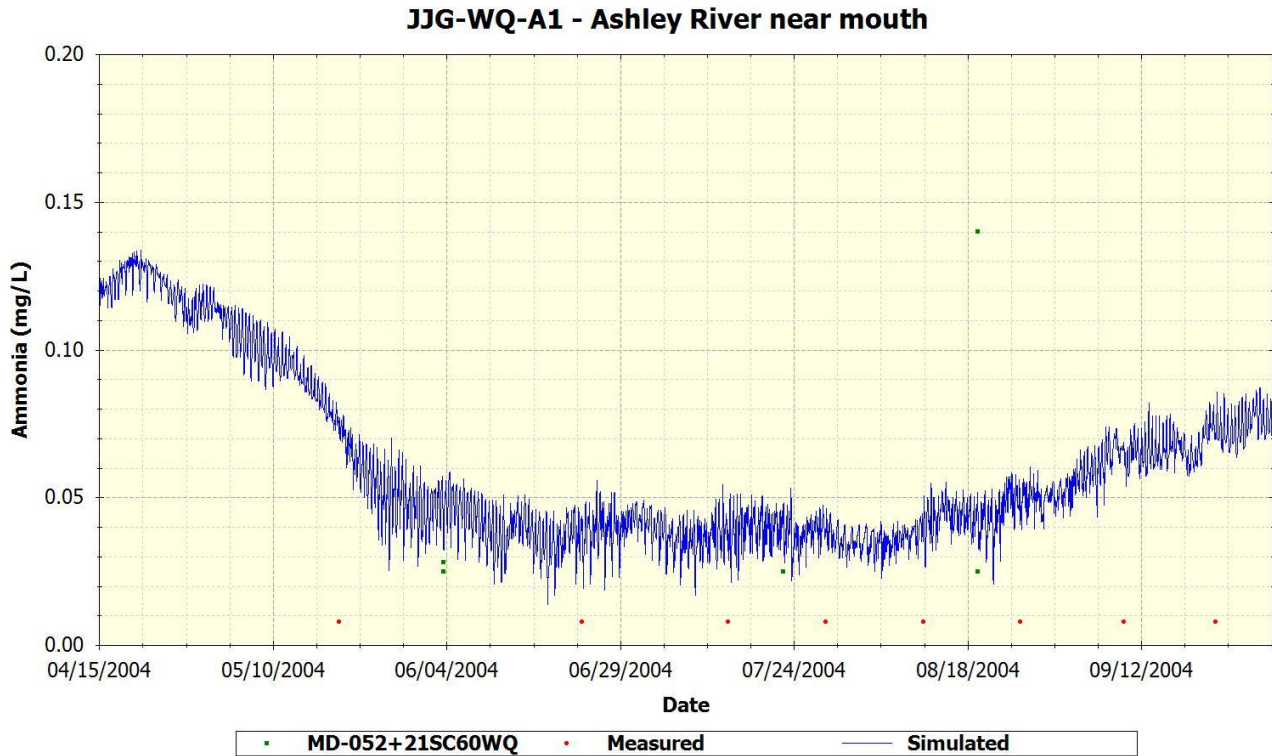


Figure D-55 2004 Measured versus Simulated Ammonia on Ashley River at Station JJG-WQ-A1 (where Measured is JJG-WQ-A1 and MD-052 is a SCDHEC measured station)

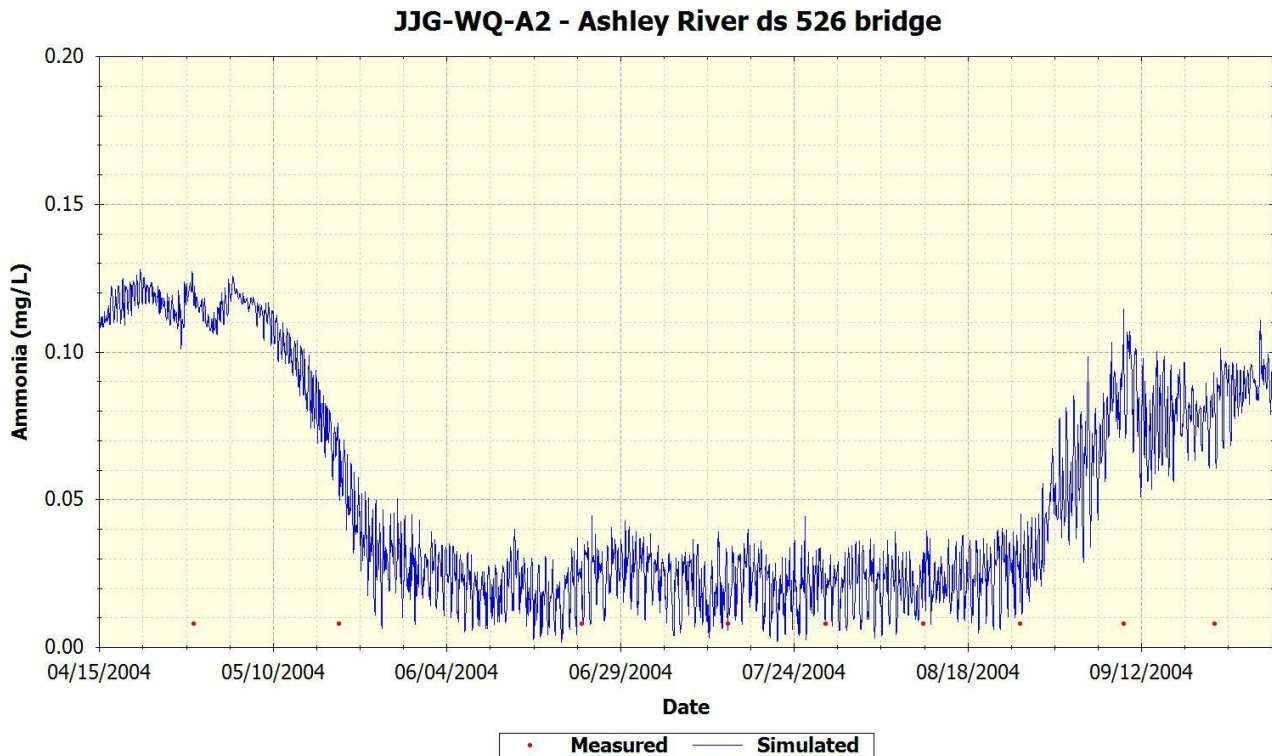


Figure D-56 2004 Measured versus Simulated Ammonia on Ashley River at Station JJG-WQ-A2

### JJG-WQ-A3 - Ashley River at Magnolia Gardens

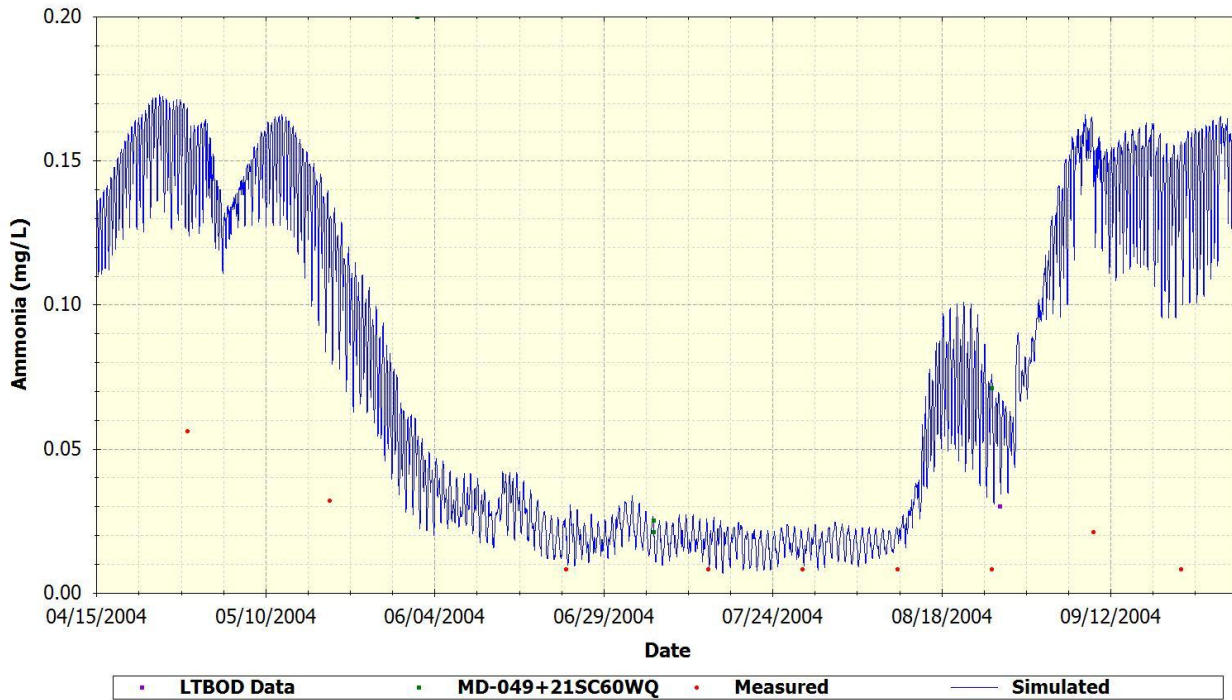


Figure D-57 2004 Measured versus Simulated Ammonia on Ashley River at Station JJG-WQ-A3 (where Measured is JJG-WQ-A3, MD-049 is a SCDHEC measured station, and LTBOD Data was a special data collection effort [Tetra Tech 2008])

### JJG-WQ-A4 - Ashley River Up Stream of Dorchester

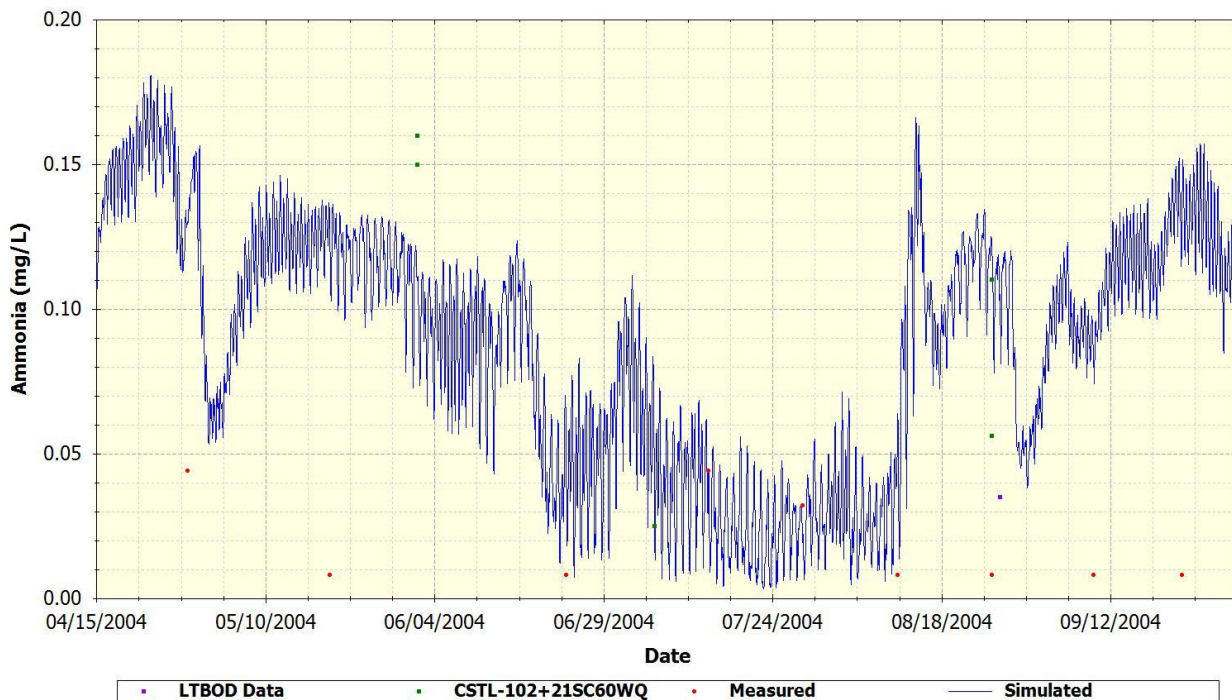


Figure D-58 2004 Measured versus Simulated Ammonia on Ashley River at Station JJG-WQ-A4 (where Measured is JJG-WQ-A4, CSTL-102 is a SCDHEC measured station, and LTBOD Data was a special data collection effort [Tetra Tech 2008])

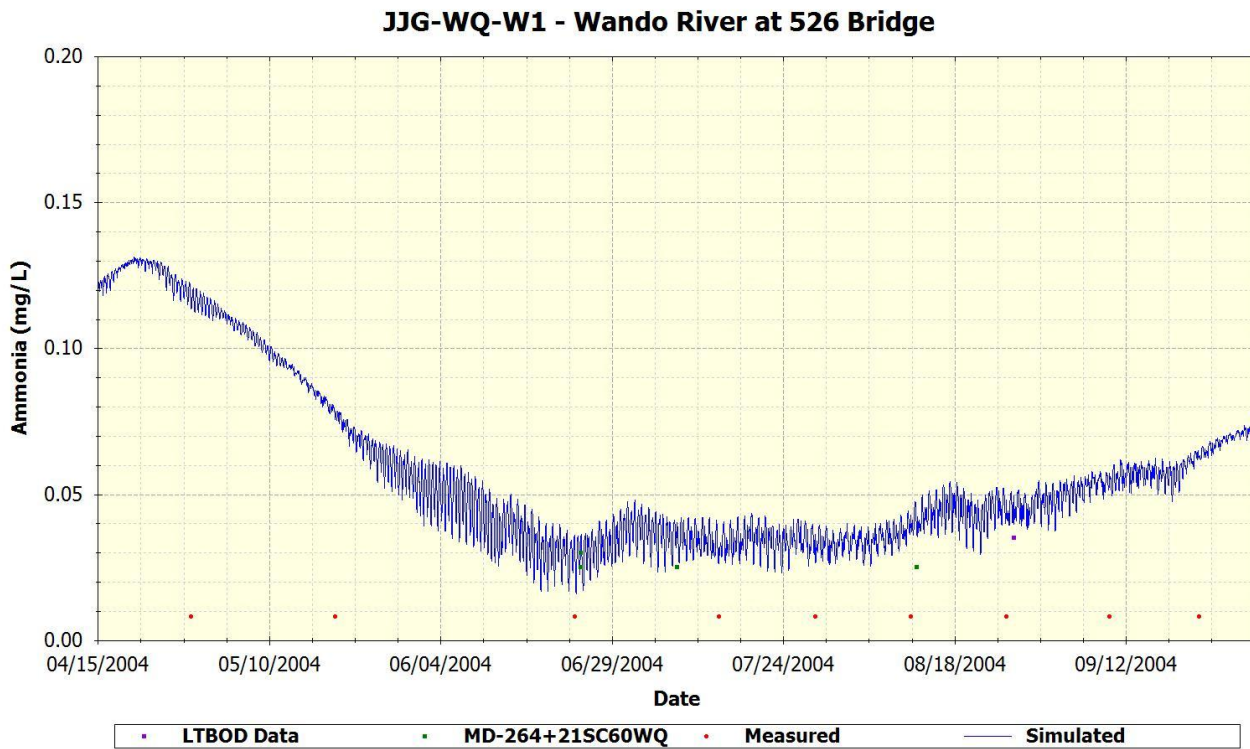


Figure D-59 2004 Measured versus Simulated Ammonia on Wando River at Station JJG-WQ-W1 (where Measured is JJG-WQ-W1, MD-264 is a SCDHEC measured station, and LTBOD Data was a special data collection effort [Tetra Tech 2008])

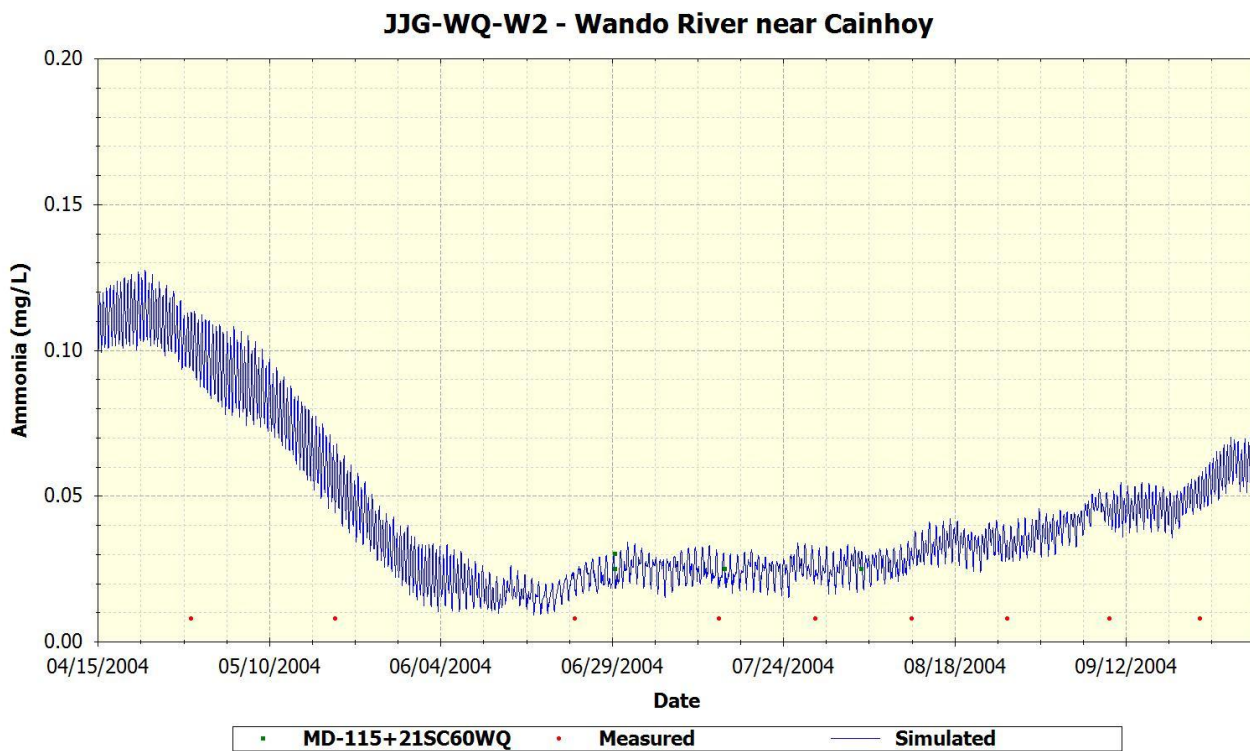


Figure D-60 2004 Measured versus Simulated Ammonia on Wando River at Station JJG-WQ-W2 (where Measured is JJG-WQ-W2 and MD-115 is a SCDHEC measured station)

### JJG-WQ-H1 - Charleston Harbor at the mouth

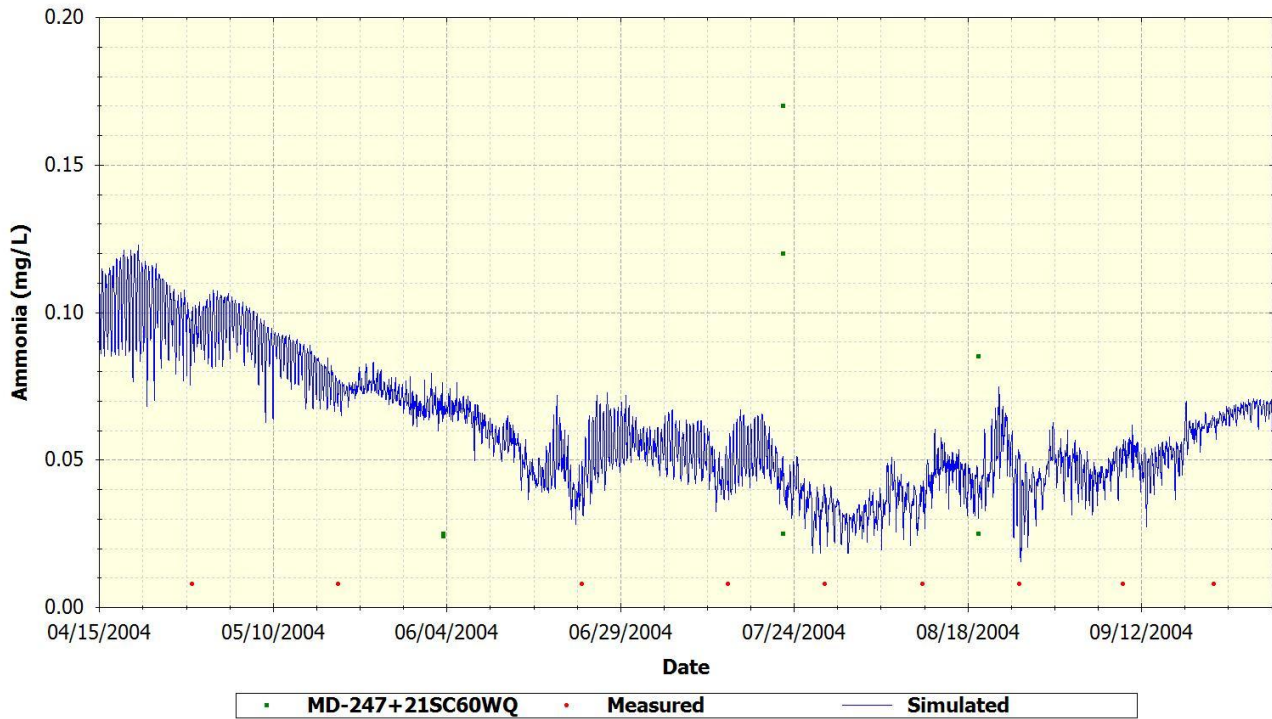


Figure D-61 2004 Measured versus Simulated Ammonia on Charleston Harbor at Station JJG-WQ-H1 (where Measured is JJG-WQ-H1 and MD-247 is a SCDHEC measured station)

### JJG-WQ-H2 - Charleston Harbor - Channel Center

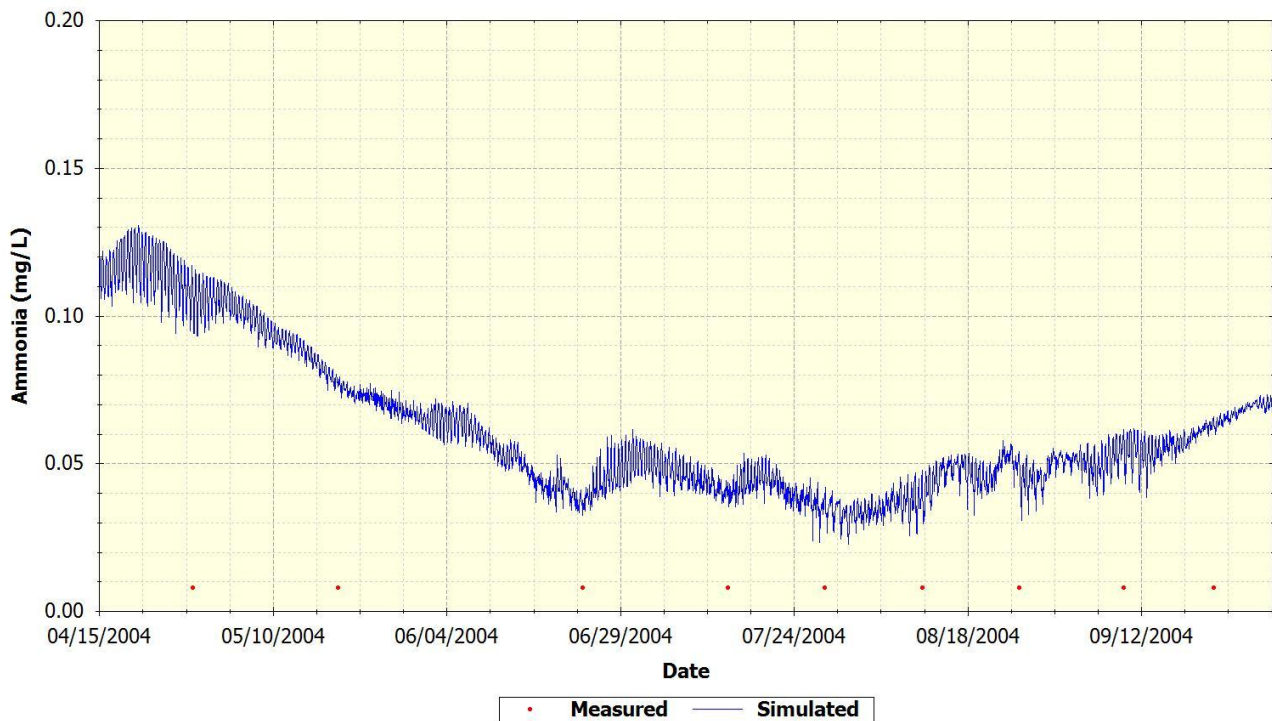


Figure D-62 2004 Measured versus Simulated Ammonia on Charleston Harbor at Station JJG-WQ-H2

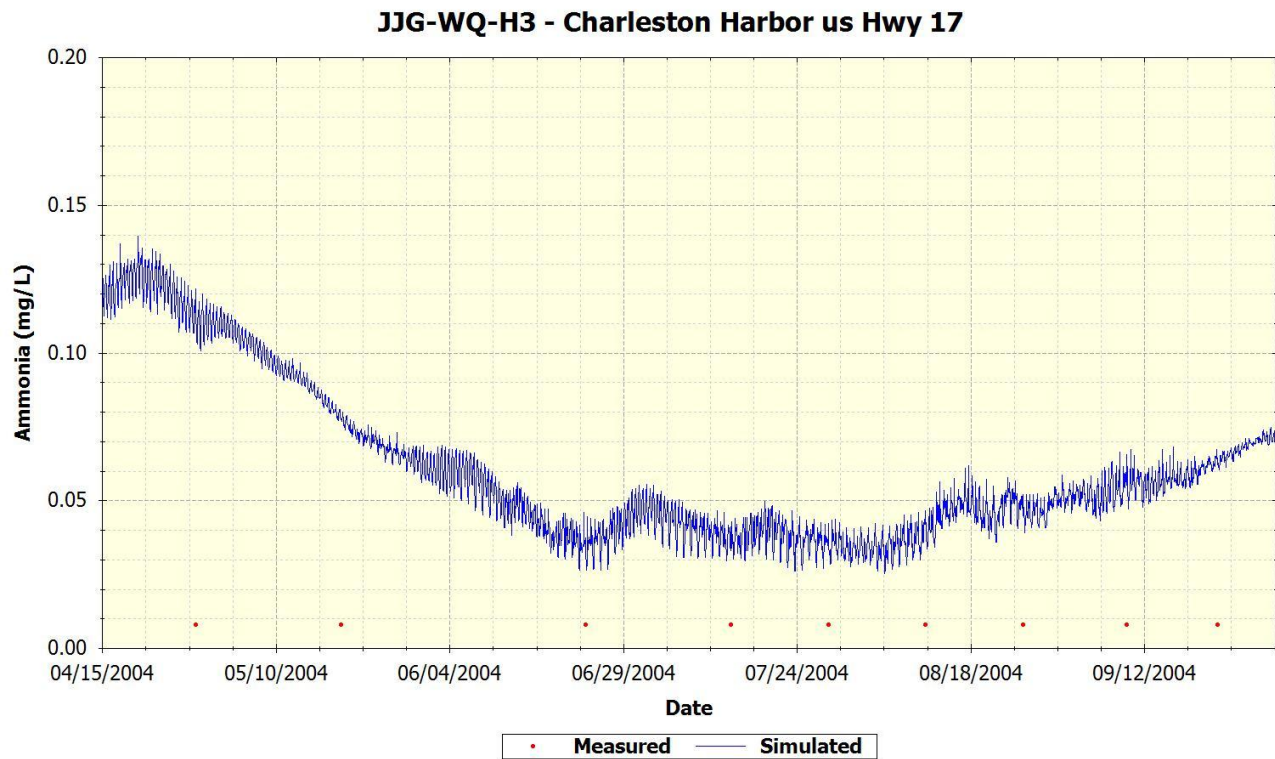


Figure D-63 2004 Measured versus Simulated Ammonia on Charleston Harbor at Station JJG-WQ-H3

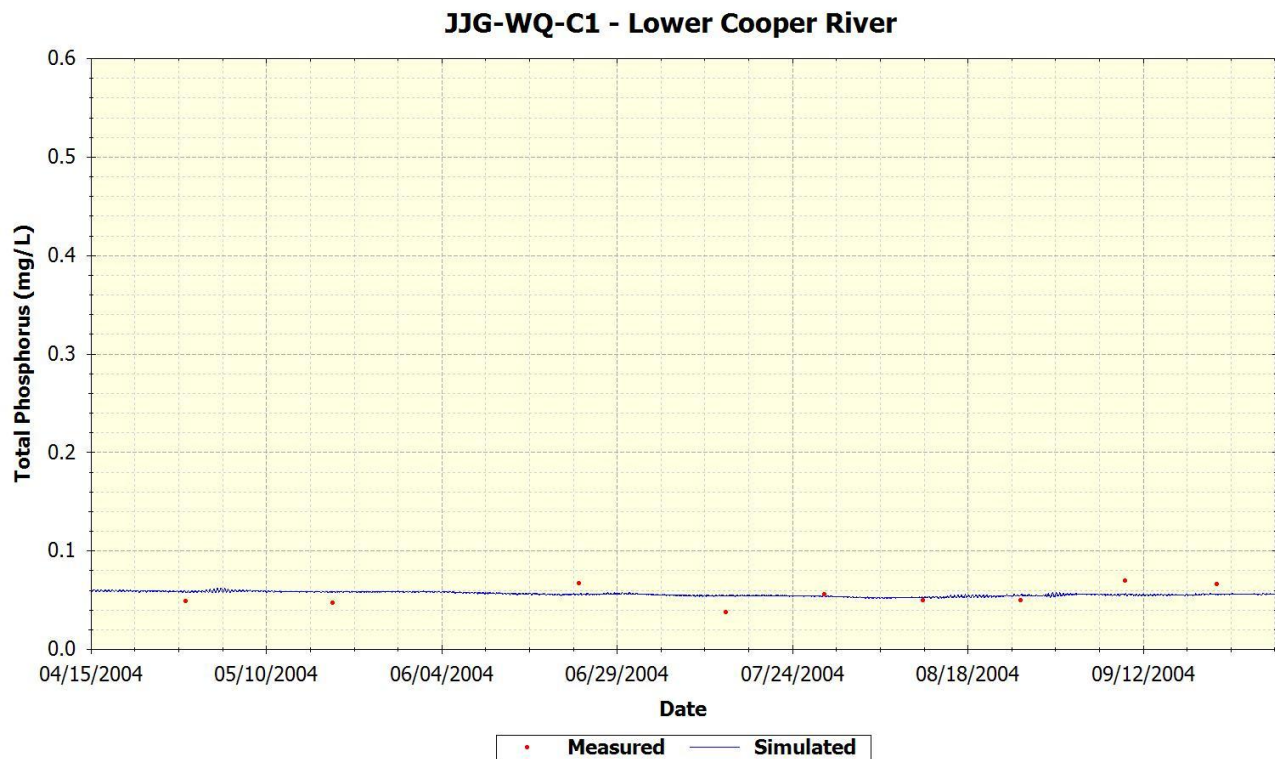


Figure D-64 2004 Measured versus Simulated Total Phosphorous on Cooper River at Station JJG-WQ-C1



**JJG-WQ-C2 - Cooper River at 526 bridge**

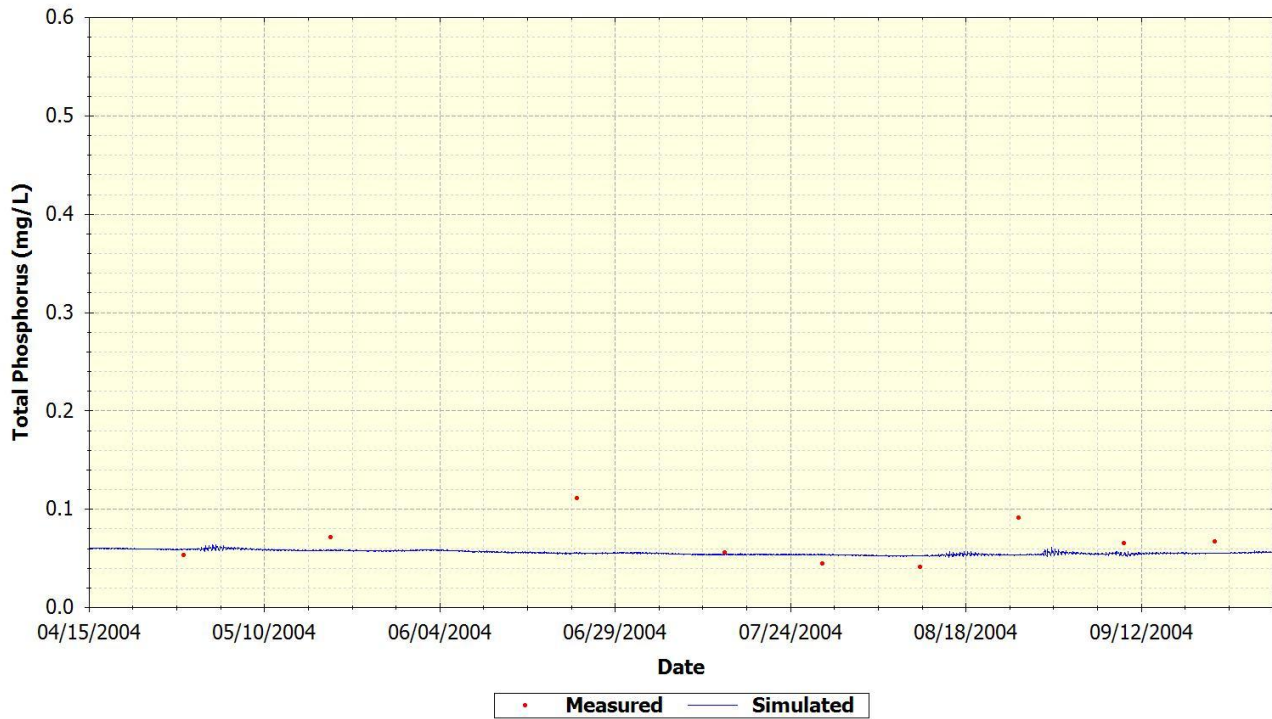


Figure D-65 2004 Measured versus Simulated Total Phosphorous on Cooper River at Station JJG-WQ-C2

**JJG-WQ-C3 - Cooper River ds Steam Plant**

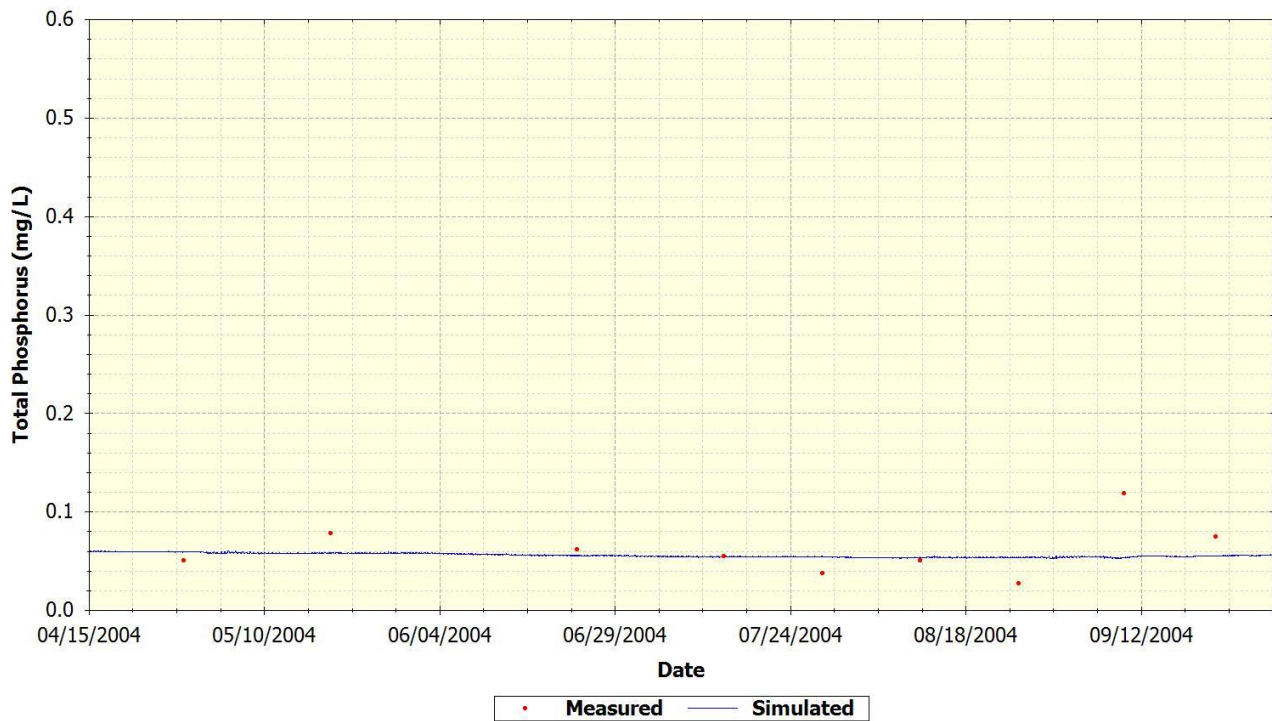


Figure D-66 2004 Measured versus Simulated Total Phosphorous on Cooper River at Station JJG-WQ-C3

### JJG-WQ-C4 - Cooper River us of Mobay

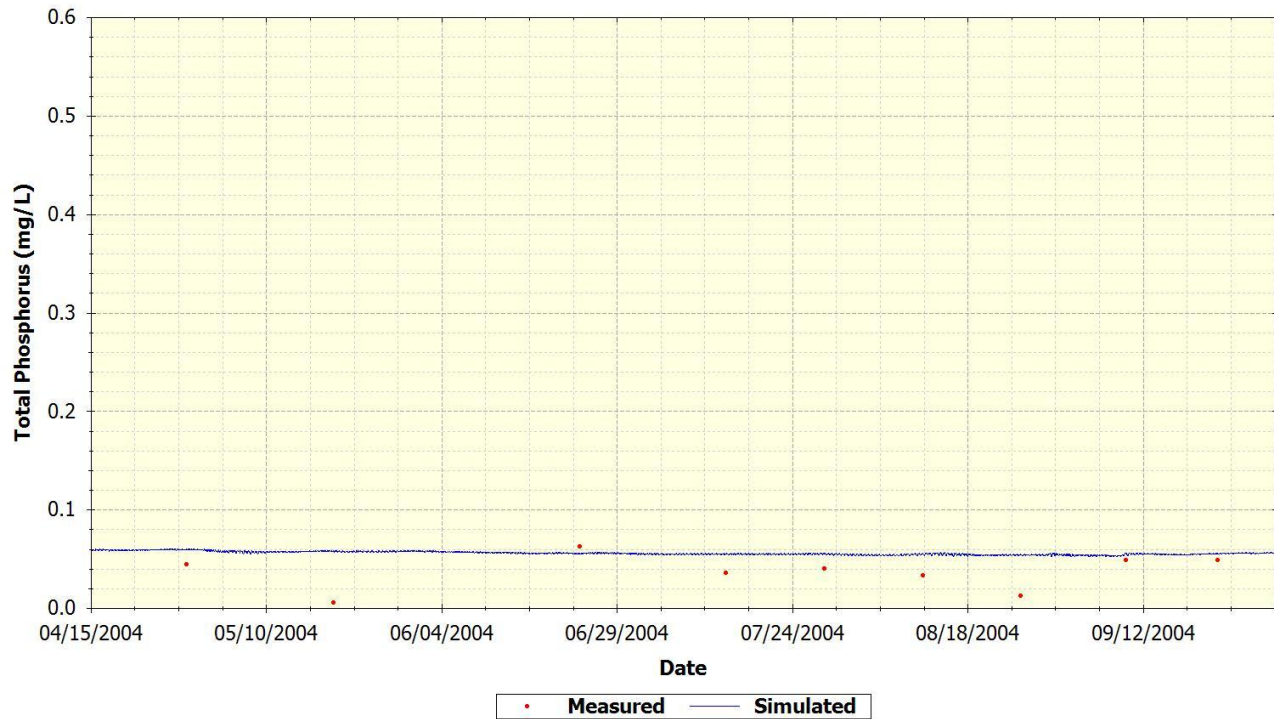


Figure D-67 2004 Measured versus Simulated Total Phosphorous on Cooper River at Station JJG-WQ-C4

### JJG-WQ-C5 - Cooper River at Dean's Hall

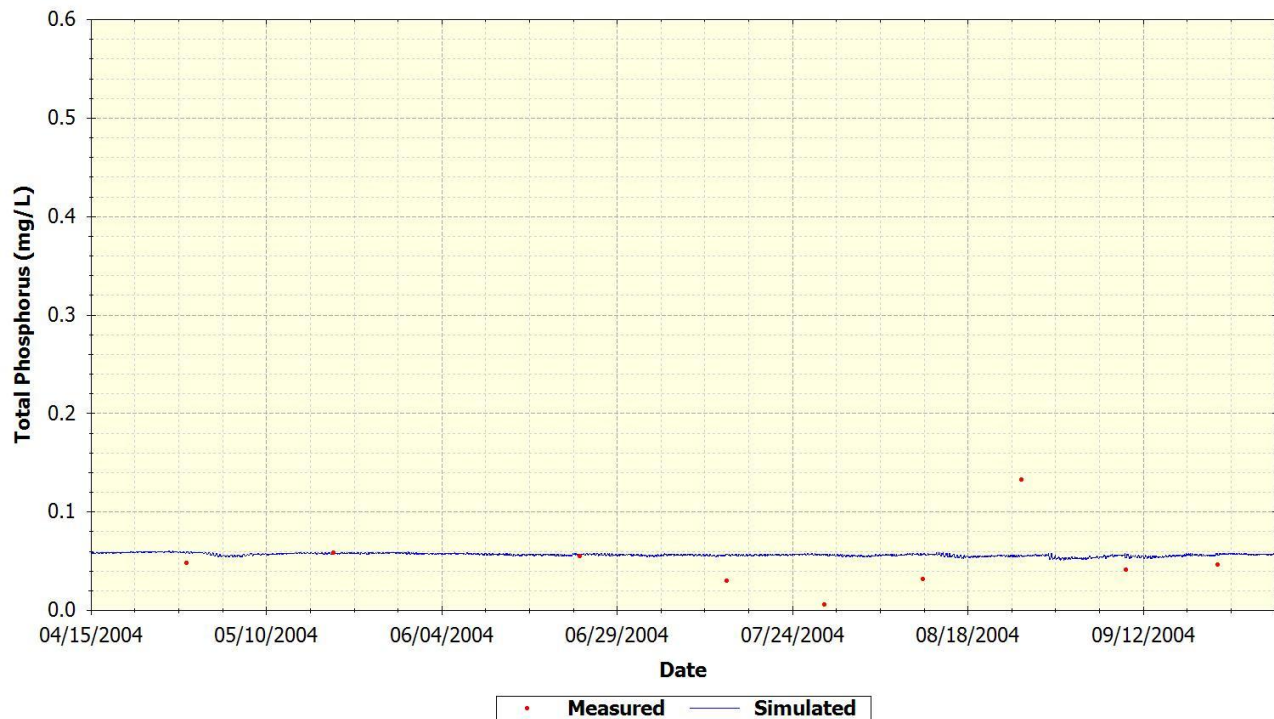


Figure D-68 2004 Measured versus Simulated Total Phosphorous on Cooper River at Station JJG-WQ-C5

### JJG-WQ-A1 - Ashley River near mouth

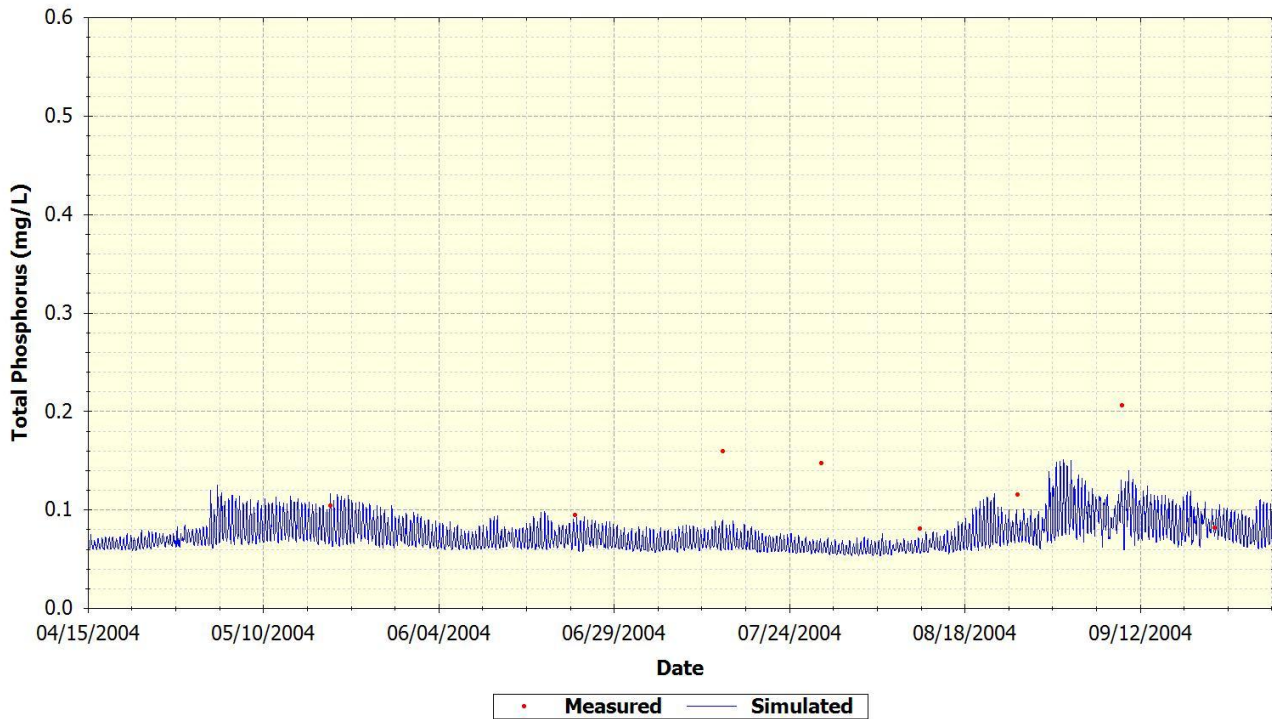


Figure D-69 2004 Measured versus Simulated Total Phosphorous on Ashley River at Station JJG-WQ-A1

### JJG-WQ-A2 - Ashley River ds 526 bridge

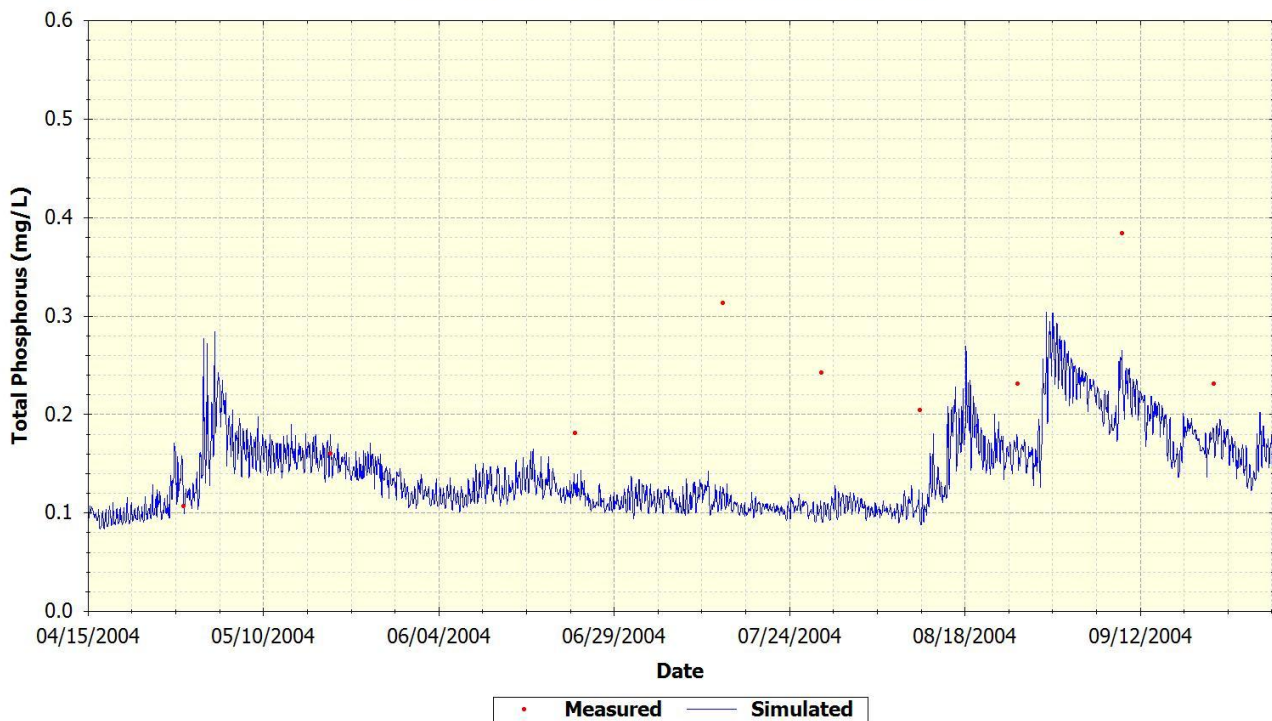


Figure D-70 2004 Measured versus Simulated Total Phosphorous on Ashley River at Station JJG-WQ-A2

### JJG-WQ-A3 - Ashley River at Magnolia Gardens

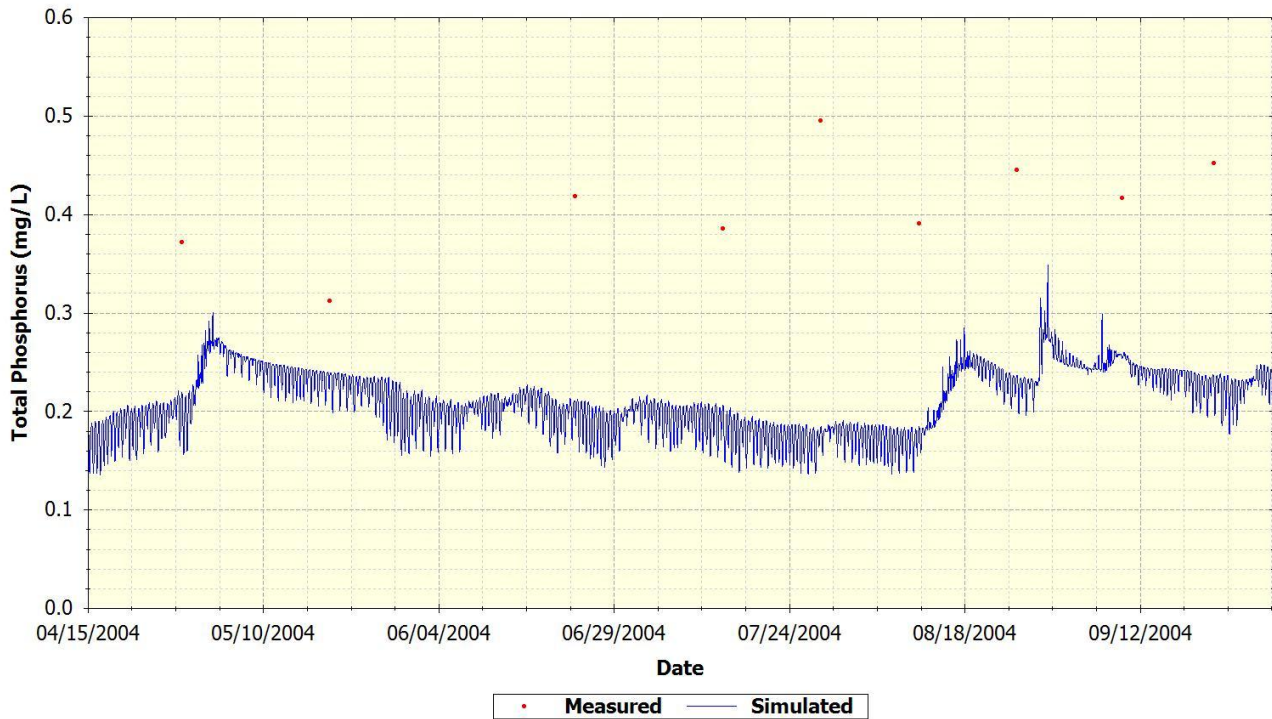


Figure D-71 2004 Measured versus Simulated Total Phosphorous on Ashley River at Station JJG-WQ-A3

### JJG-WQ-A4 - Ashley River Up Stream of Dorchester

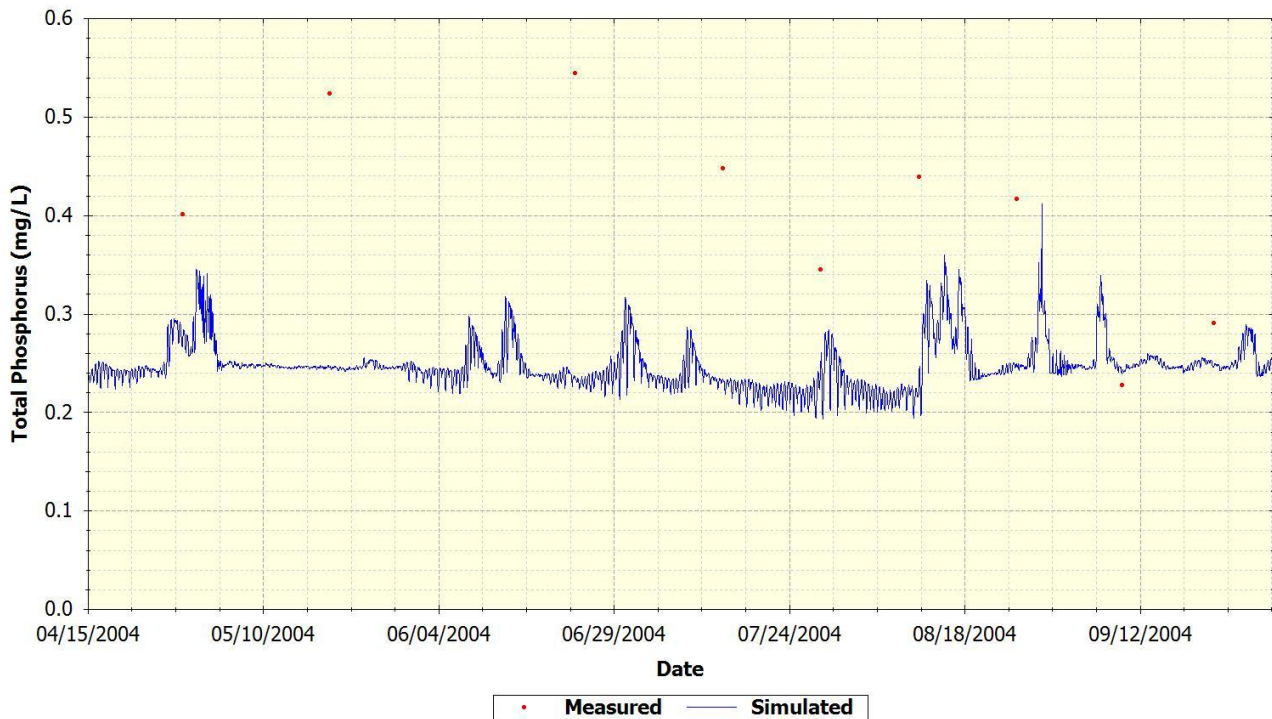


Figure D-72 2004 Measured versus Simulated Total Phosphorous on Ashley River at Station JJG-WQ-A4

### JJG-WQ-W1 - Wando River at 526 Bridge

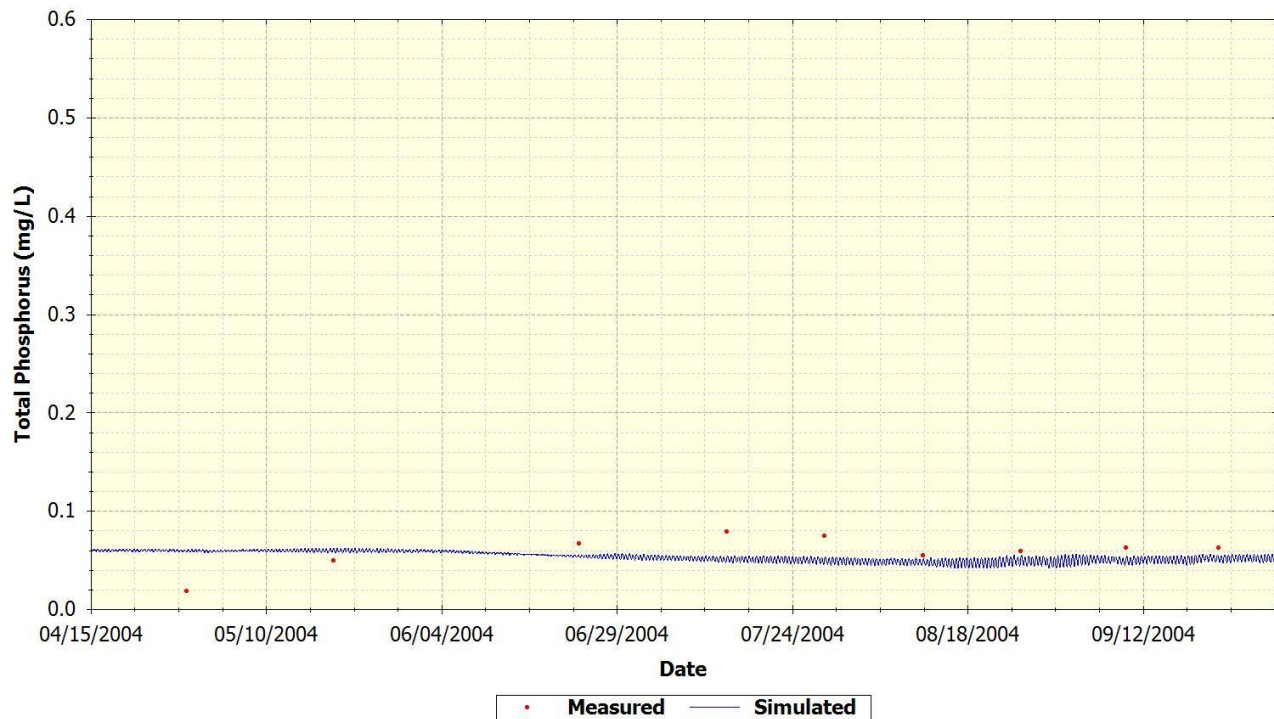


Figure D-73 2004 Measured versus Simulated Total Phosphorous on Wando River at Station JJG-WQ-W1

### JJG-WQ-W2 - Wando River near Cainhoy

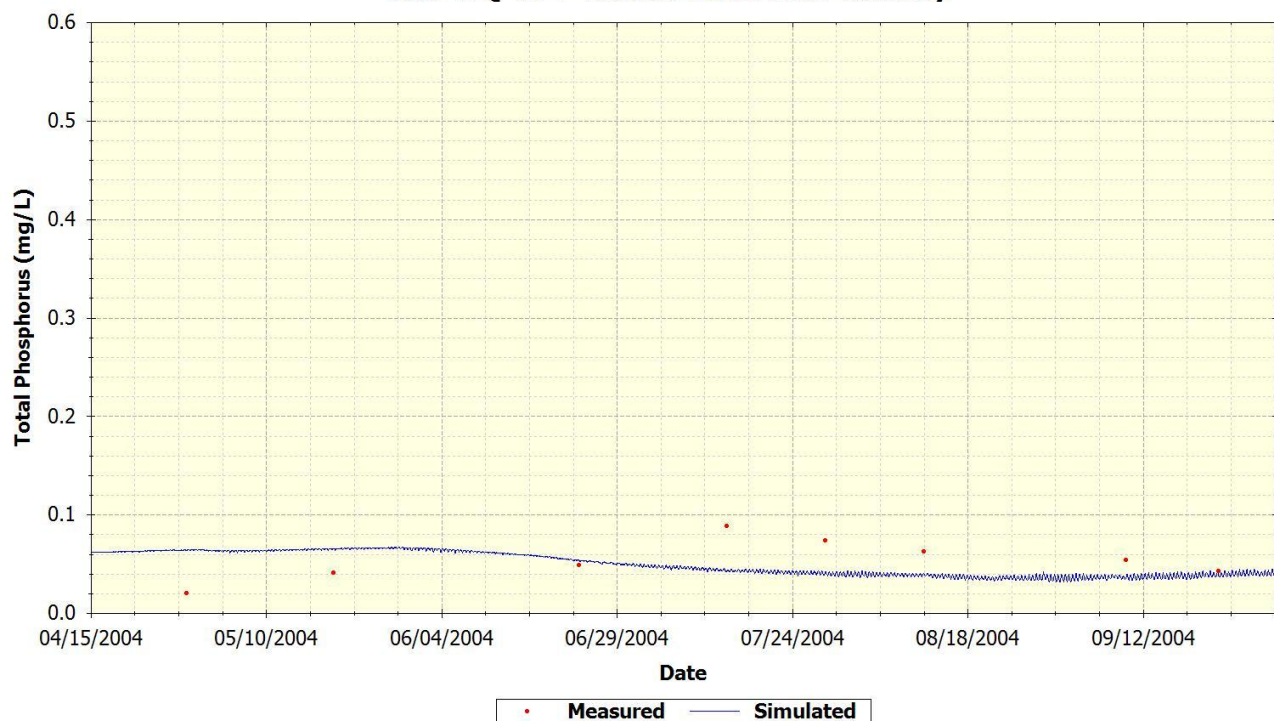


Figure D-74 2004 Measured versus Simulated Total Phosphorous on Wando River at Station JJG-WQ-W2

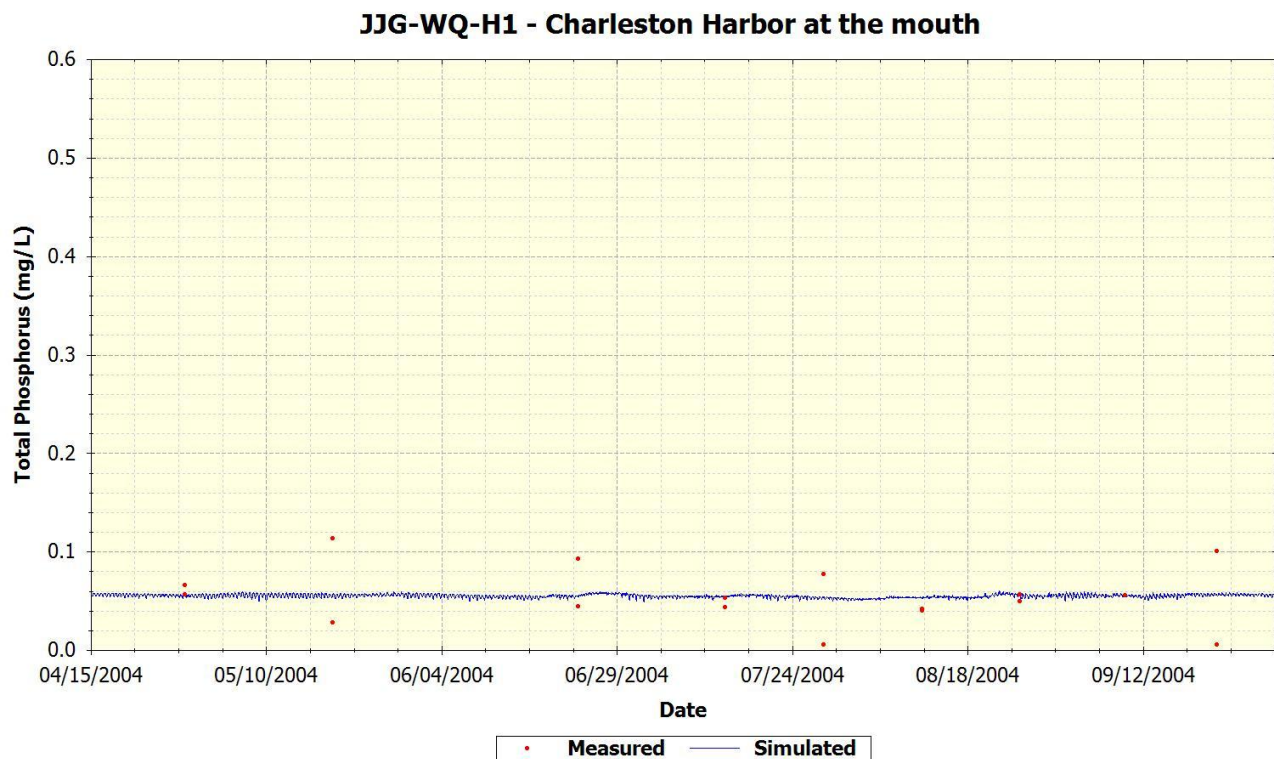


Figure D-75 2004 Measured versus Simulated Total Phosphorous on Charleston Harbor at Station JJG-WQ-H1

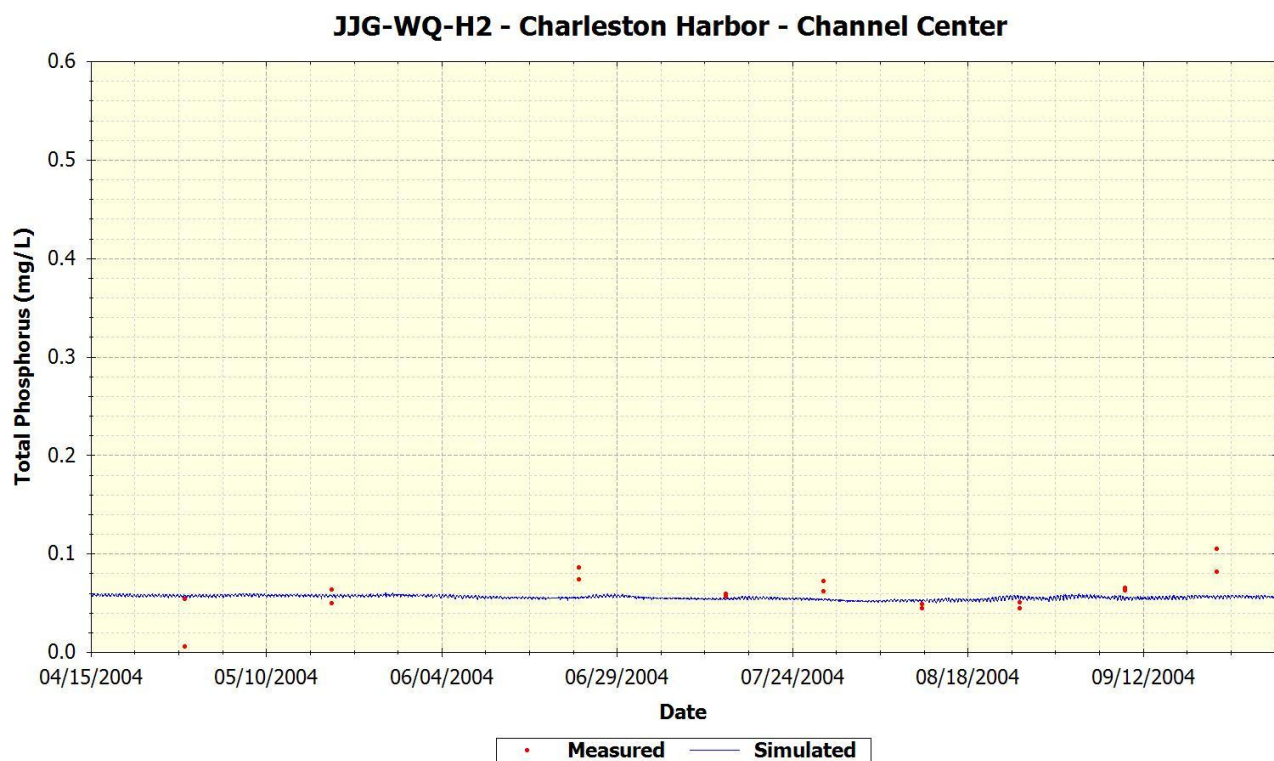


Figure D-76 2004 Measured versus Simulated Total Phosphorous on Charleston Harbor at Station JJG-WQ-H2

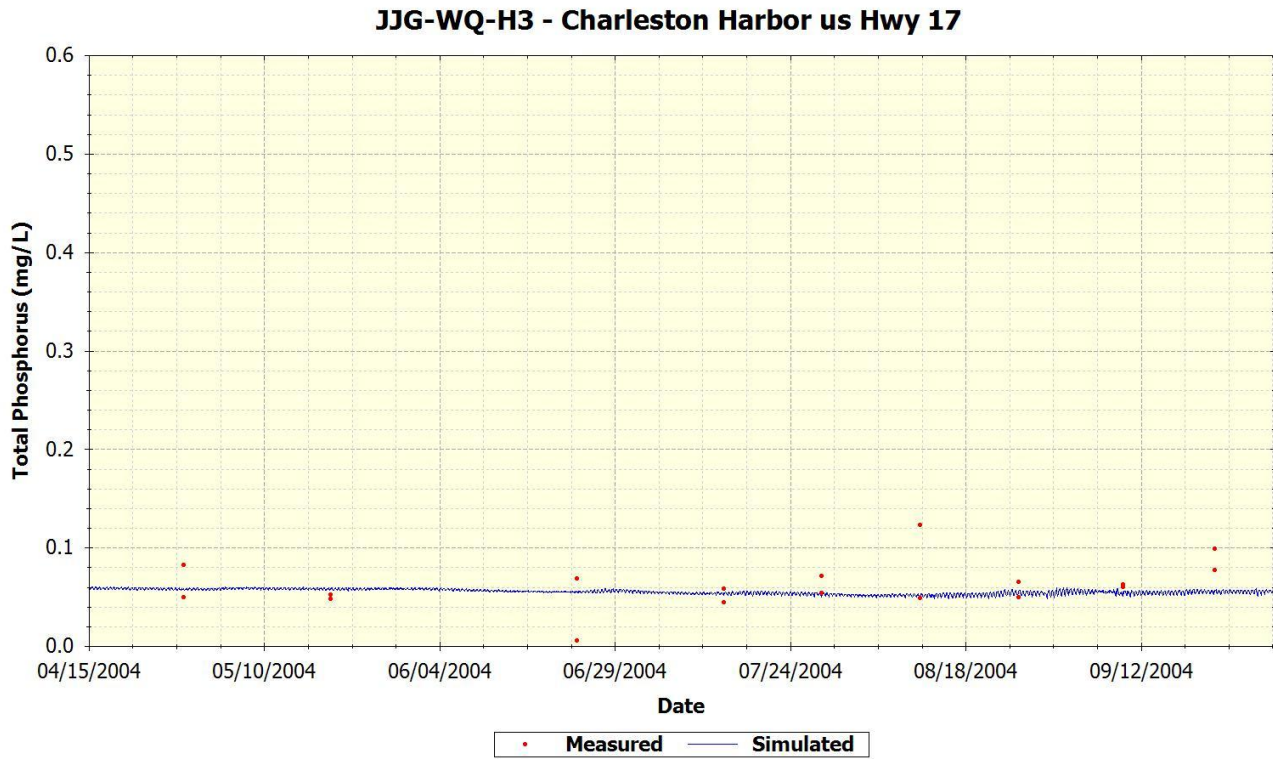


Figure D-77 2004 Measured versus Simulated Total Phosphorous on Charleston Harbor at Station JJG-WQ-H3

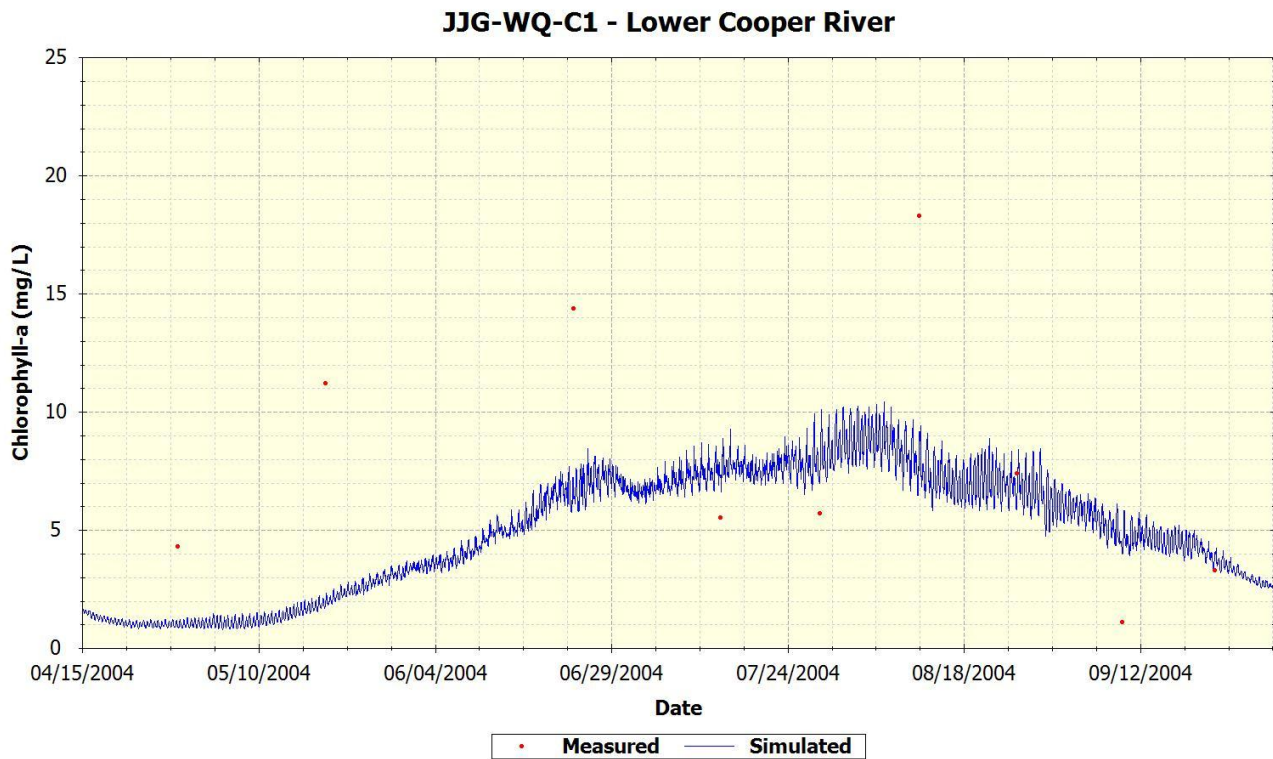


Figure D-78 2004 Measured versus Simulated Chlorophyll\_a on Cooper River at Station JJGWQ-C1

### JJG-WQ-C2 - Cooper River at 526 bridge

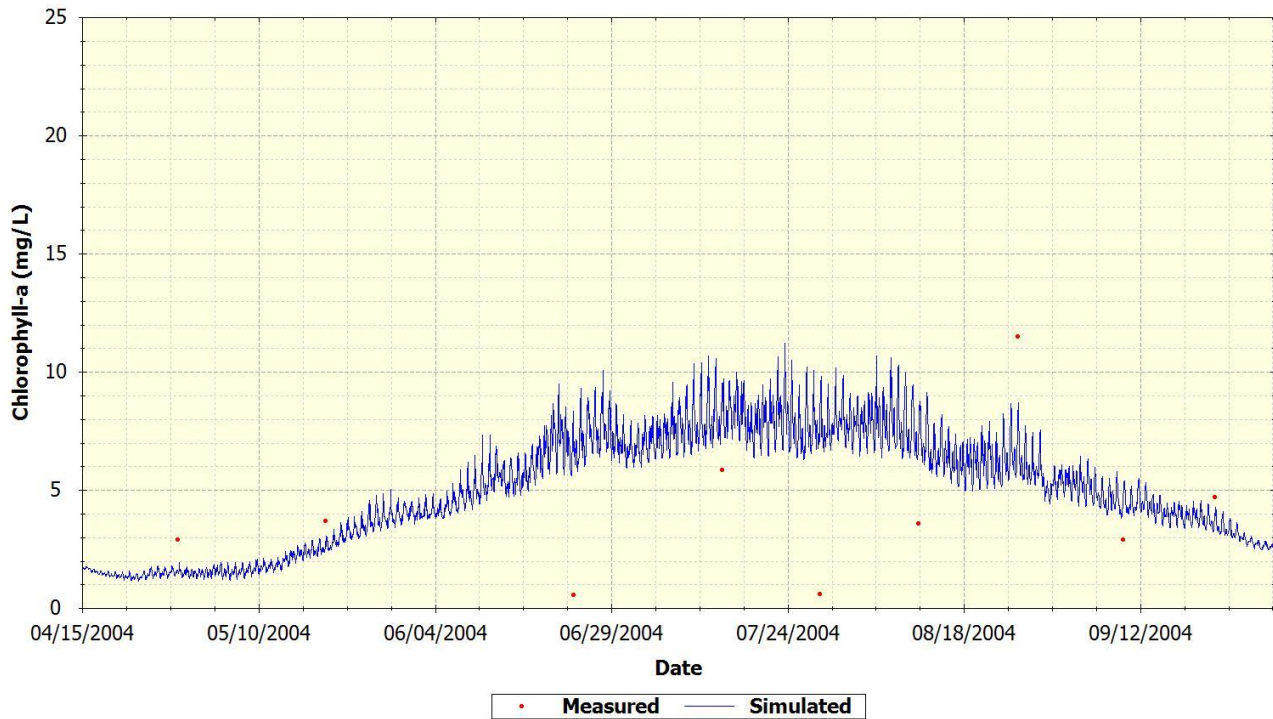


Figure D-79 2004 Measured versus Simulated Chlorophyll\_a on Cooper River at Station JJGWQ-C2

### JJG-WQ-C3 - Cooper River ds Steam Plant

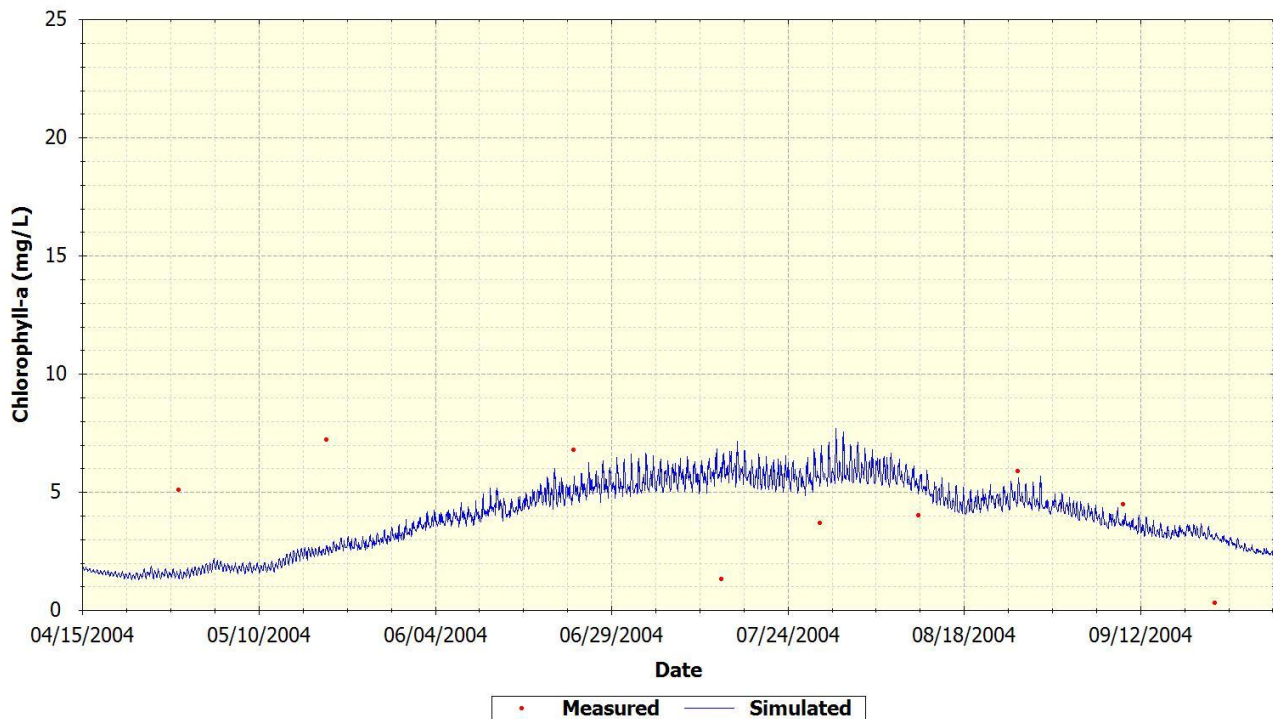


Figure D-80 2004 Measured versus Simulated Chlorophyll\_a on Cooper River at Station JJGWQ-C3



JJG-WQ-C4 - Cooper River us of Mobay

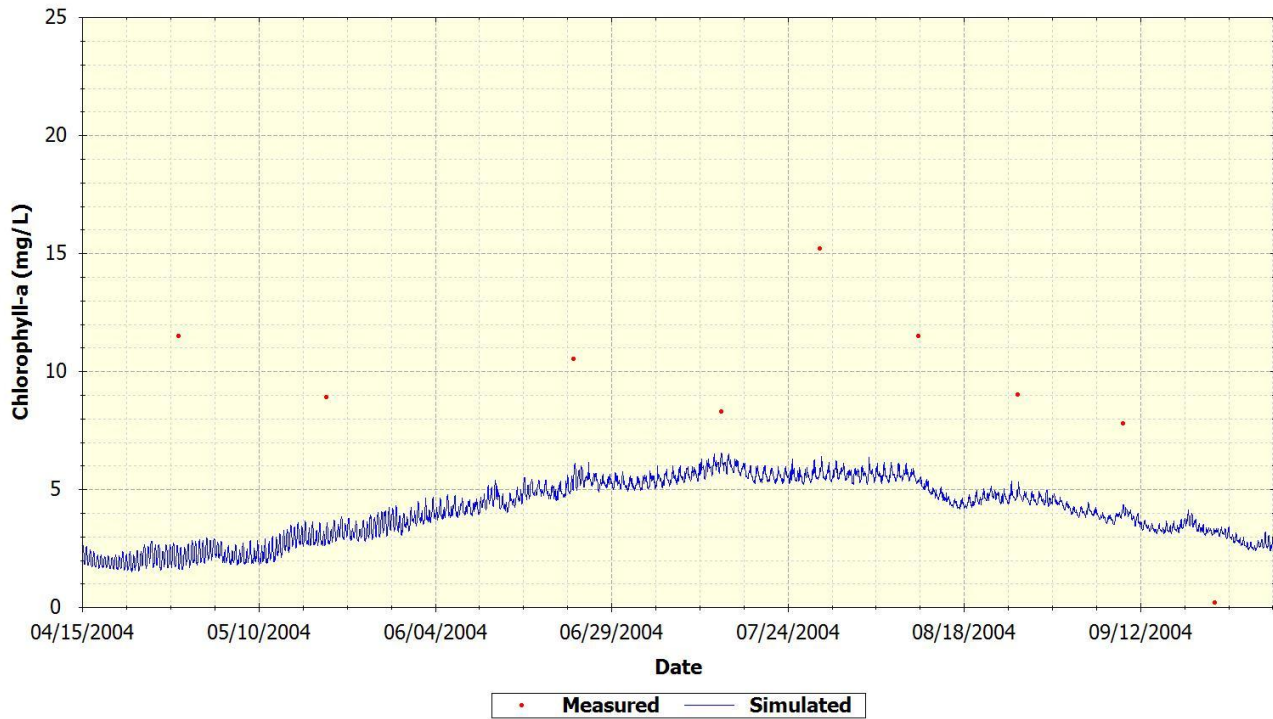


Figure D-81 2004 Measured versus Simulated Chlorophyll\_a on Cooper River at Station JJGWQ-C4

JJG-WQ-C5 - Cooper River at Dean's Hall

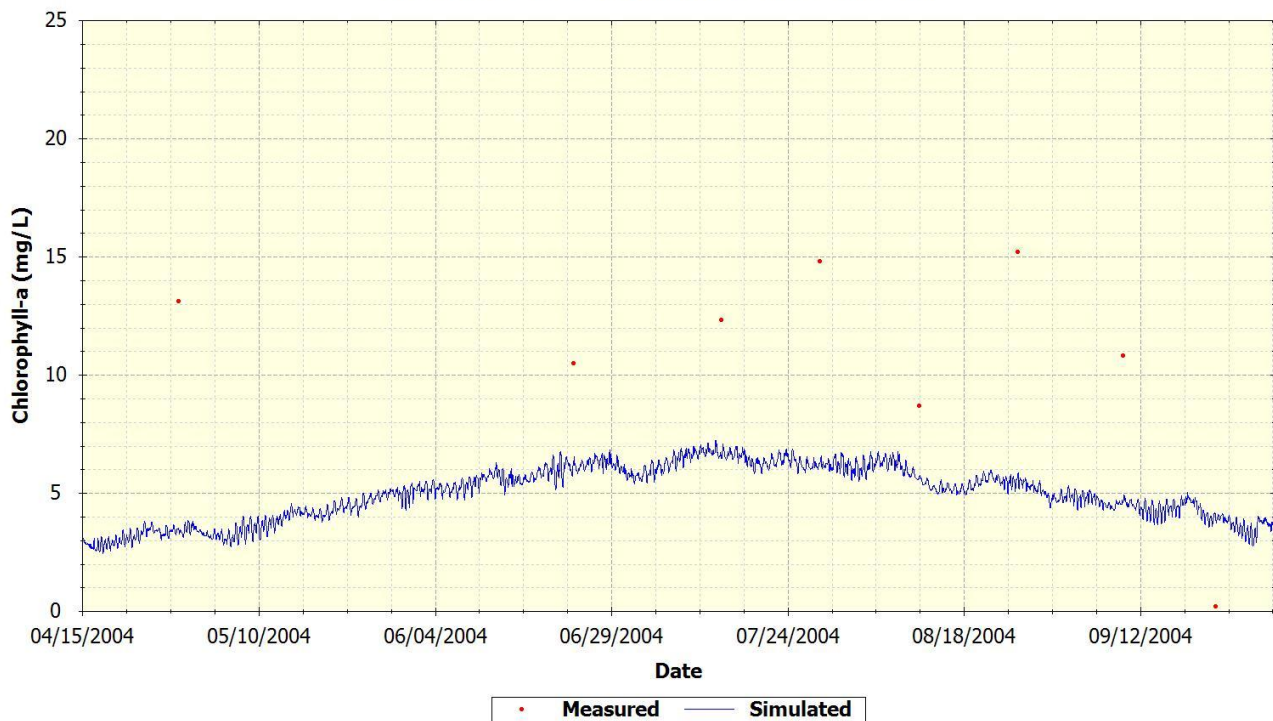


Figure D-82 2004 Measured versus Simulated Chlorophyll\_a on Cooper River at Station JJGWQ-C5

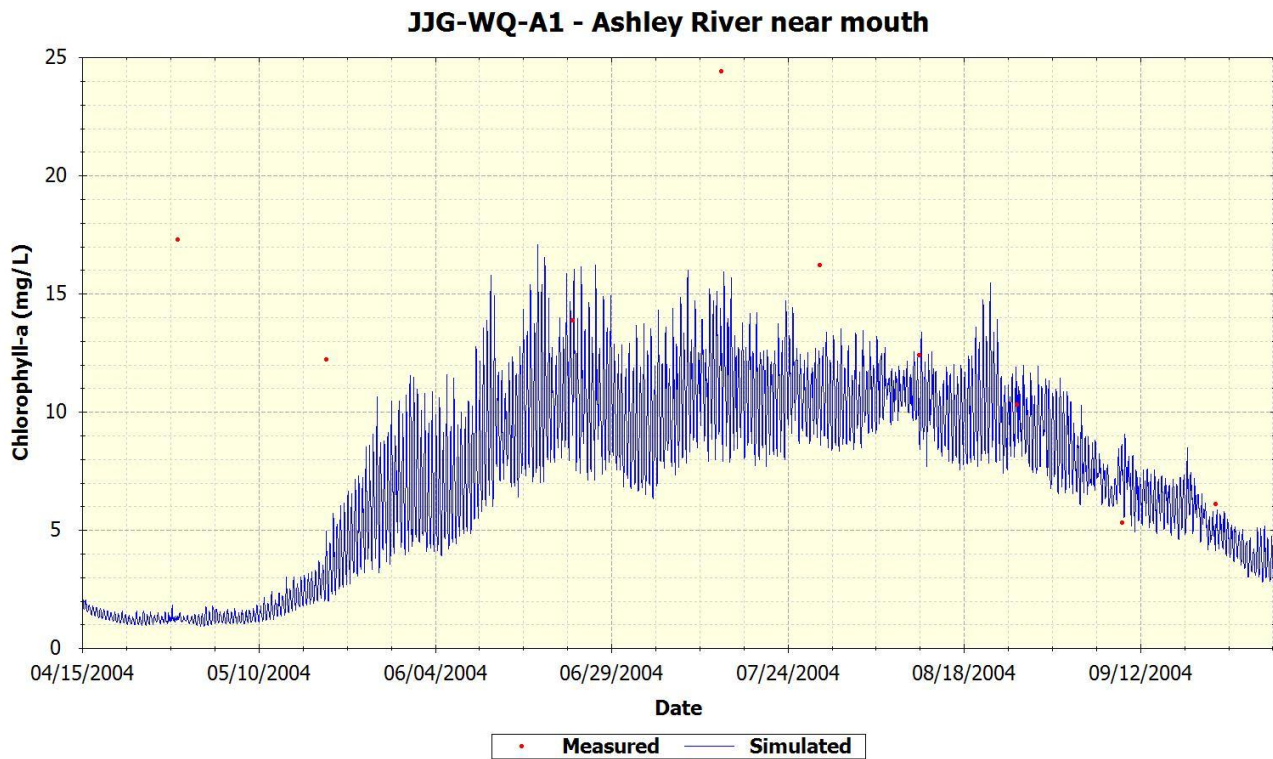


Figure D-83 2004 Measured versus Simulated Chlorophyll\_a on Ashley River at Station JJGWQ-A1

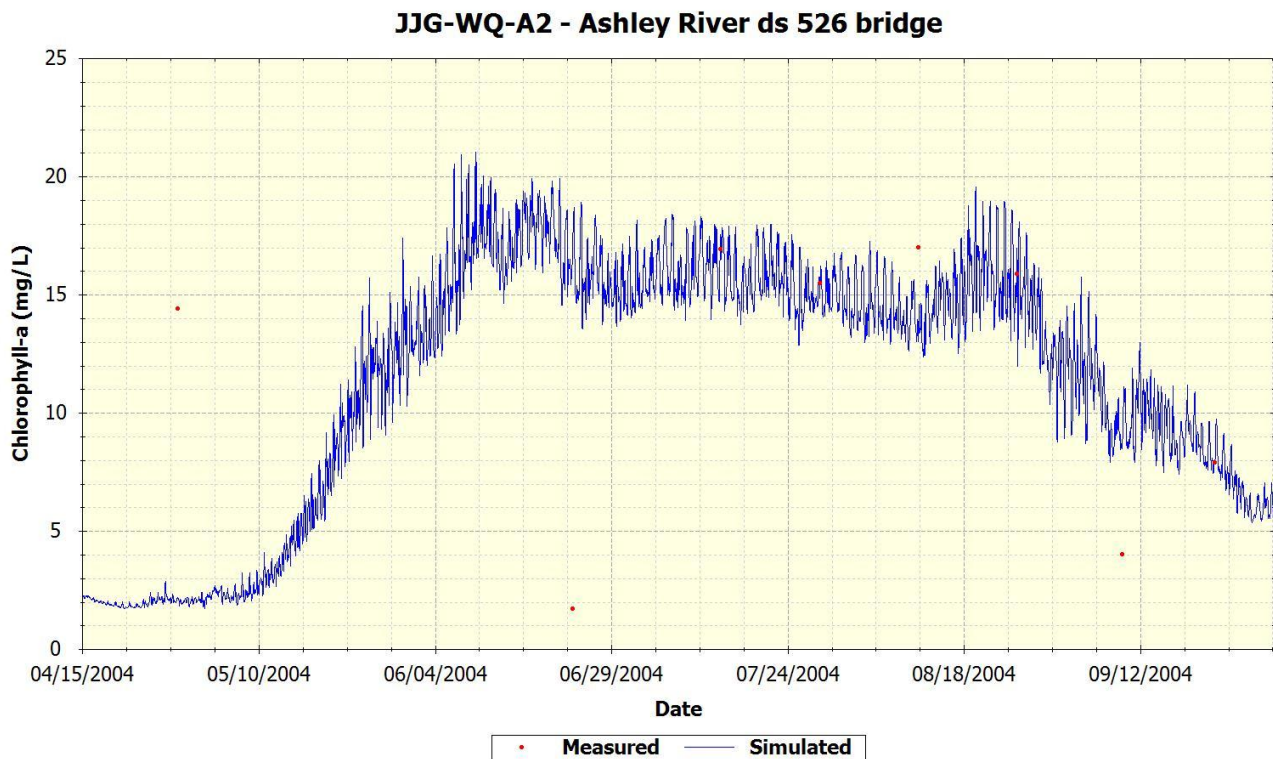


Figure D-84 2004 Measured versus Simulated Chlorophyll\_a on Ashley River at Station JJGWQ-A2

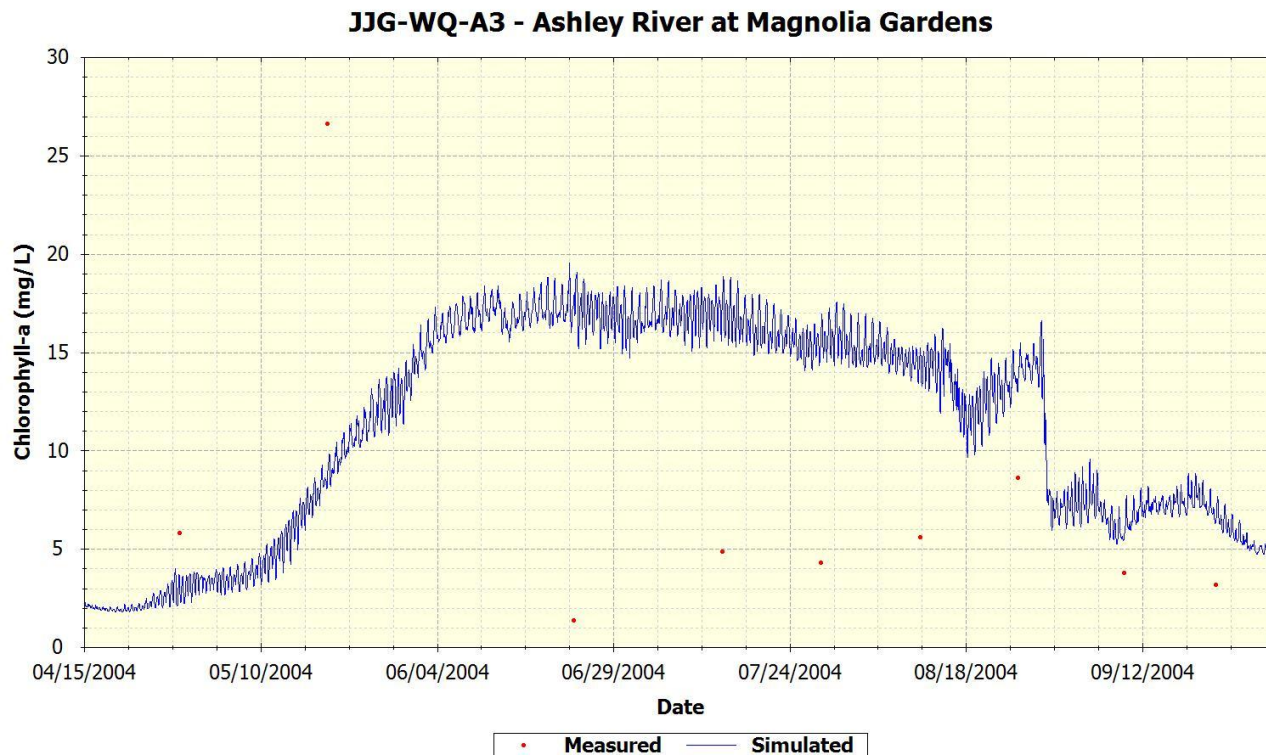


Figure D-85 2004 Measured versus Simulated Chlorophyll\_a on Ashley River at Station JJGWQ-A3

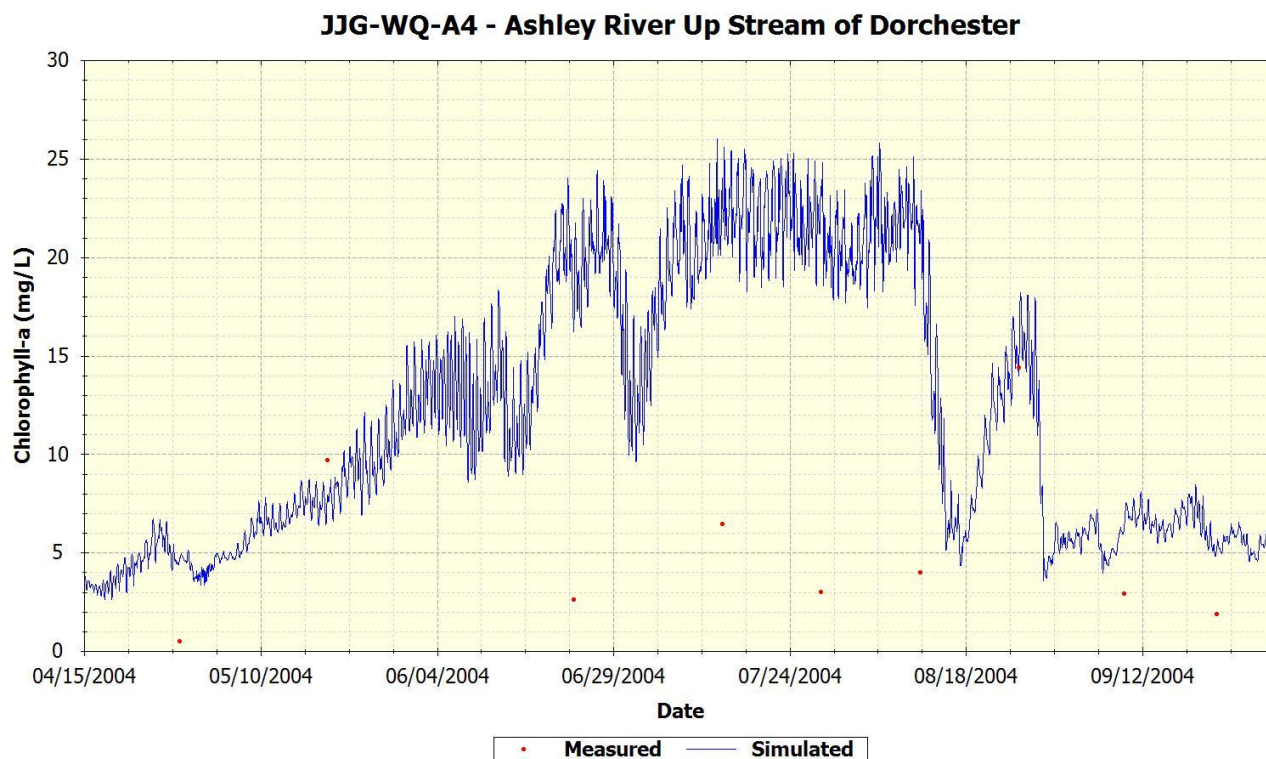


Figure D-86 2004 Measured versus Simulated Chlorophyll\_a on Ashley River at Station JJGWQ- A4

### JJG-WQ-W1 - Wando River at 526 Bridge

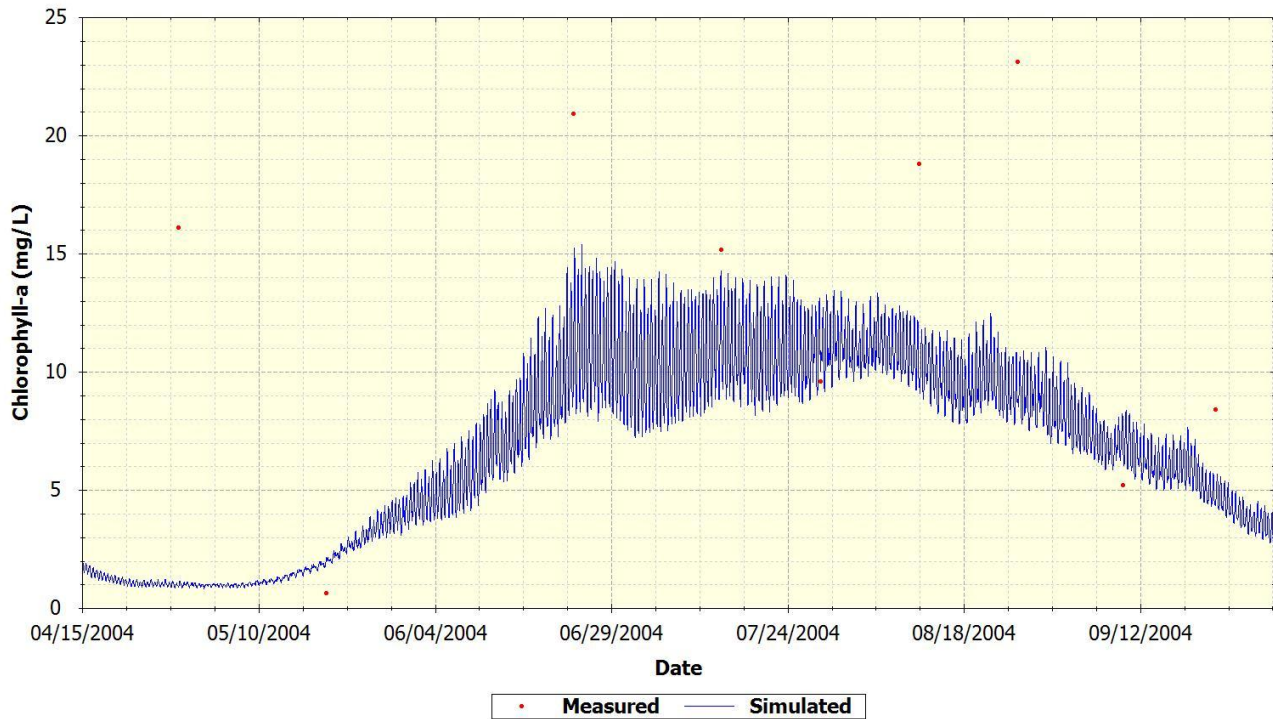


Figure D-87 2004 Measured versus Simulated Chlorophyll\_a on Wando River at Station JJGWQ-W1

### JJG-WQ-W2 - Wando River near Cainhoy

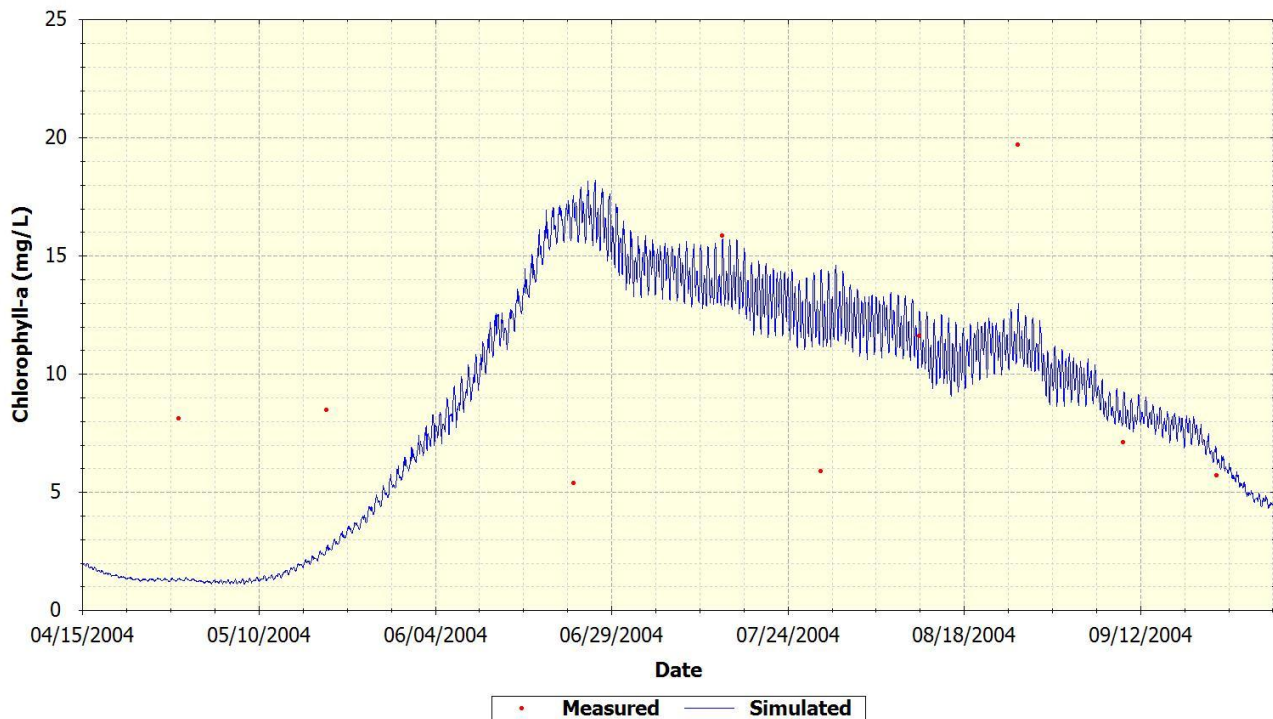


Figure D-88 2004 Measured versus Simulated Chlorophyll\_a on Wando River at Station JJGWQ-W2

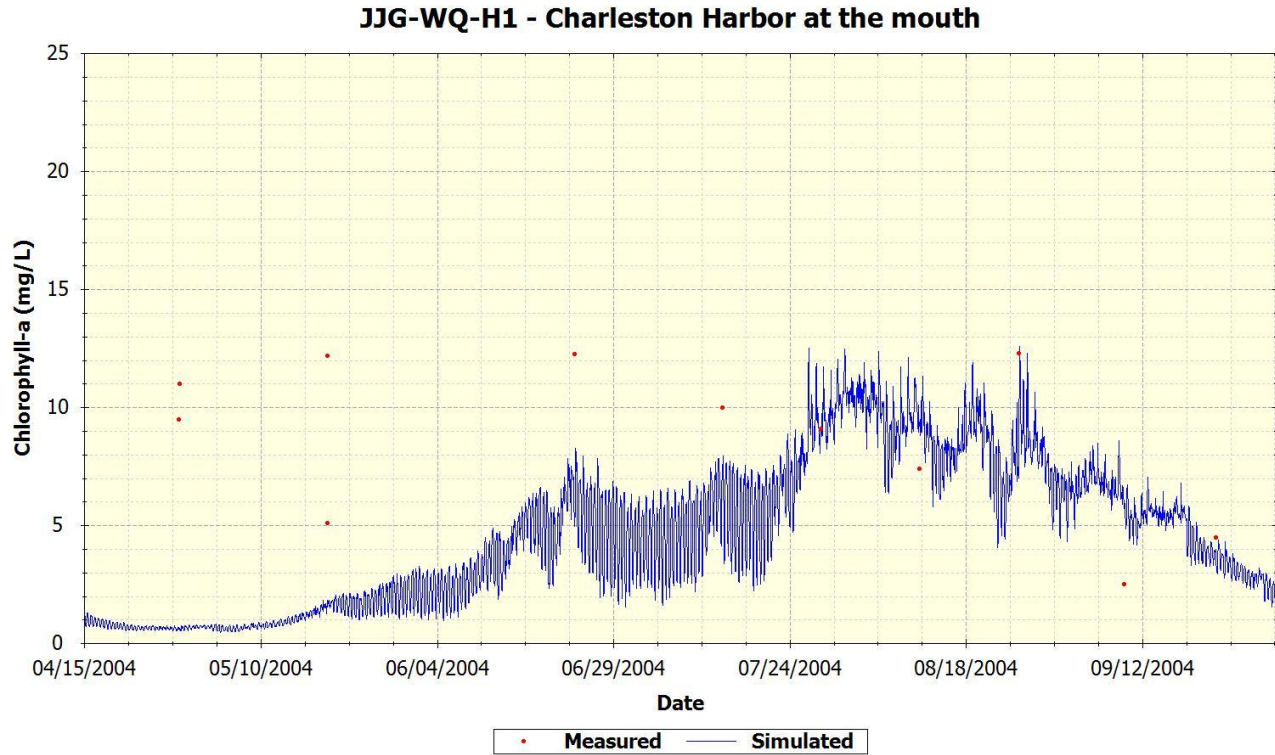


Figure D-89 2004 Measured versus Simulated Chlorophyll\_a on Charleston Harbor at Station JJG-WQ-H1

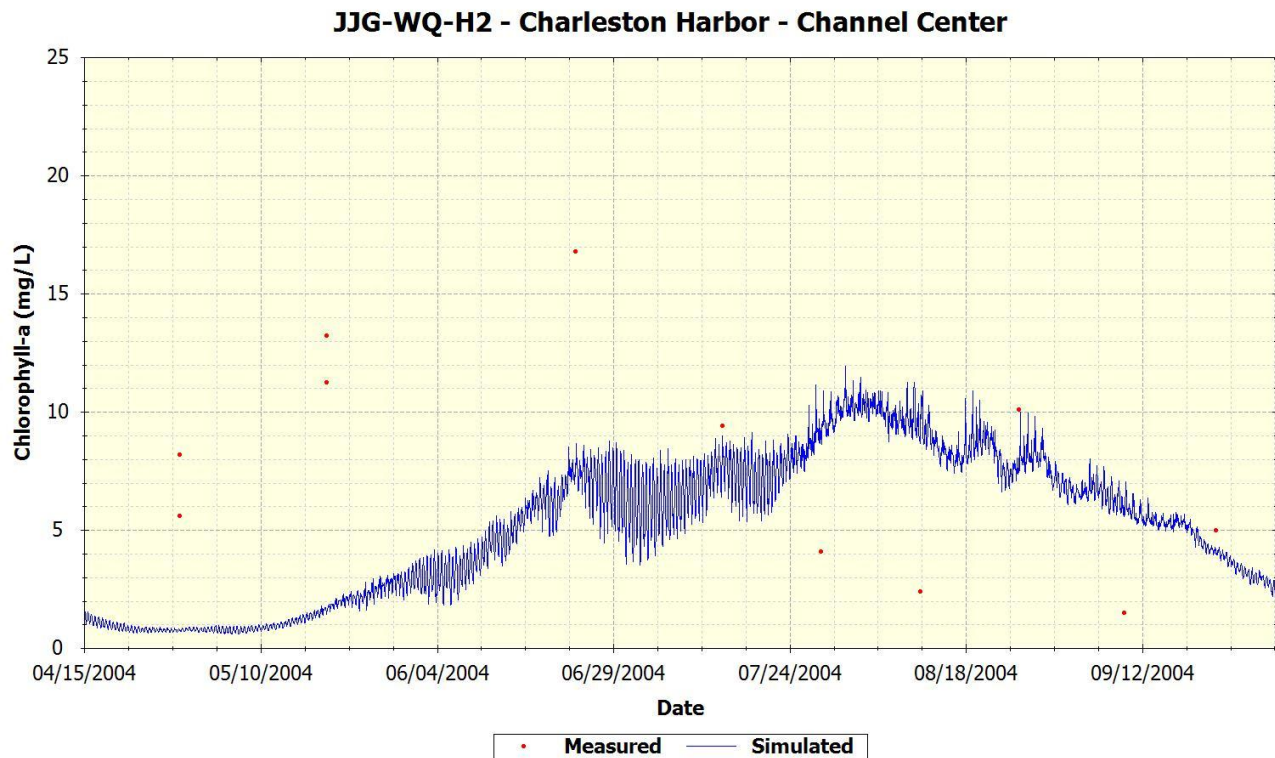


Figure D-90 2004 Measured versus Simulated Chlorophyll\_a on Charleston Harbor at Station JJG-WQ-H2

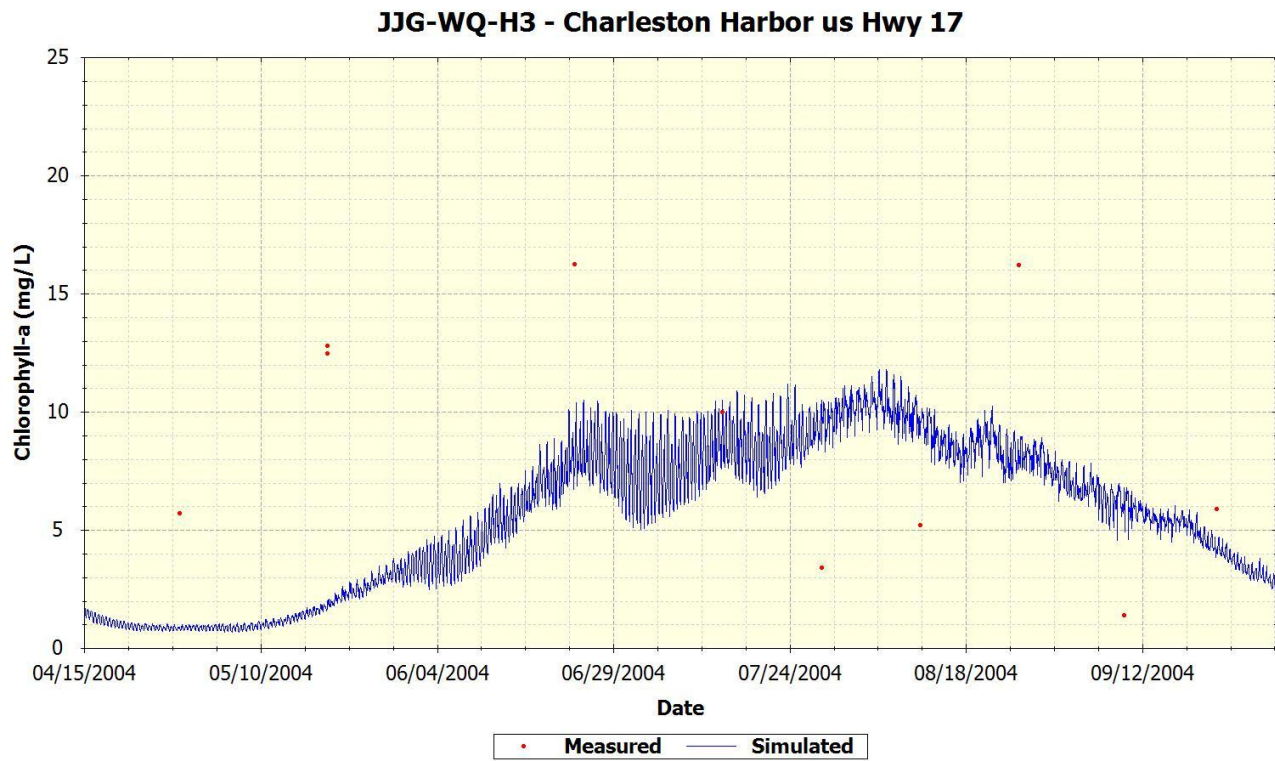


Figure D-91 2004 Measured versus Simulated Chlorophyll\_a on Charleston Harbor at Station JJG-WQ-H3

