

| Summary of Model Prediction Runs | | | | | | | |
|----------------------------------|--------------------------------------|------------------------------|------------------------|----------|--------------------------------|---------------------|---------------------|
| Model Run | Point Source Conditions | | Oxygen Injection (ppd) | | % of Pond Volume < DO Criteria | | Maximum Chl a (ppb) |
| | | | Existing Loc. | New Loc. | Minimum DO < 5 ppm | Mo Ave DO < 6.5 ppm | |
| | BOD/TSS | TP | GIPOP 1* | GIPOP 2* | | | |
| 0A | 0 | 0 | 92000 | 0 | 0% | 1% | 2.4 |
| 0B | | | 0 | 0 | 10% | 29% | |
| 0D | Paper Mills =0 Municipal = Actual | | 92000 | 0 | 1% | | 7 |
| 1A | License | Lic. Flow Actual Conc. | 92000 | 0 | 55% | 72% | 18.6 |
| 1B | | | 0 | 0 | 64% | 86% | |
| 2A | Actual (98-00) | Actual Flow 98-00 | 92000 | 0 | 11% | 20% | 16.6 |
| 2B | | | 0 | 0 | 40% | 54% | |
| 3A | Actual (98-00) | 67% Point Source TP | 92000 | 0 | 7% | 15% | 12.4 |
| 3B | | | 0 | 0 | 40% | 54% | |
| 4A | Actual (98-00) | 40% Point Source TP | 92000 | 0 | 6% | 7% | 7.6 |
| 4B | | | 0 | 0 | 37% | 54% | |
| 5A | 10% Actual | 40% Point Source TP | 92000 | 0 | 1% | 4% | 7.6 |
| 5B | 25% Actual | | | | 2% | 4% | |
| 5C | 50% Actual | | | | 4% | 6% | |
| 6A | Actual (98-00) | 67% Point Source TP | 45000 | 90000 | 1% | 1% | 12.4 |
| 6B | | 40% Point Source TP | 35000 | 70000 | 1% | 1% | 7.6 |

*Current Location of GIPOP is at Upper Narrows, approximately 5 miles upstream from dam. A new location for a second oxygen injection system was investigated at Lower Narrows at a depth of 50' and approximately 3 miles upstream from the dam.

Figure 1
Percentage of Gulf Island Pond
Not Meeting Minimum Class C Dissolved Oxygen Criteria

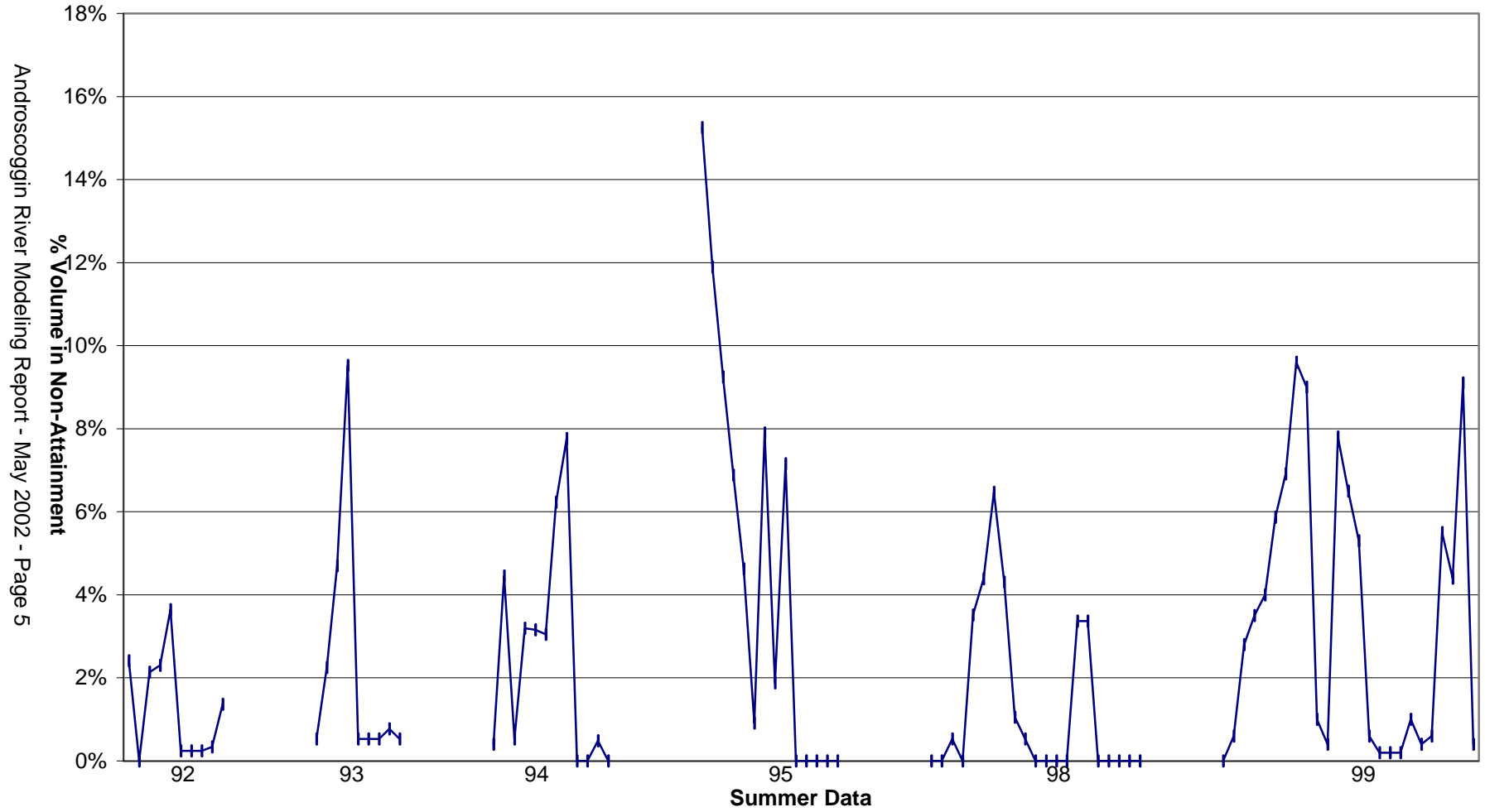


Figure 2
Summary of Gulf Island Pond Chlorophyll A Data 1998 - 2000

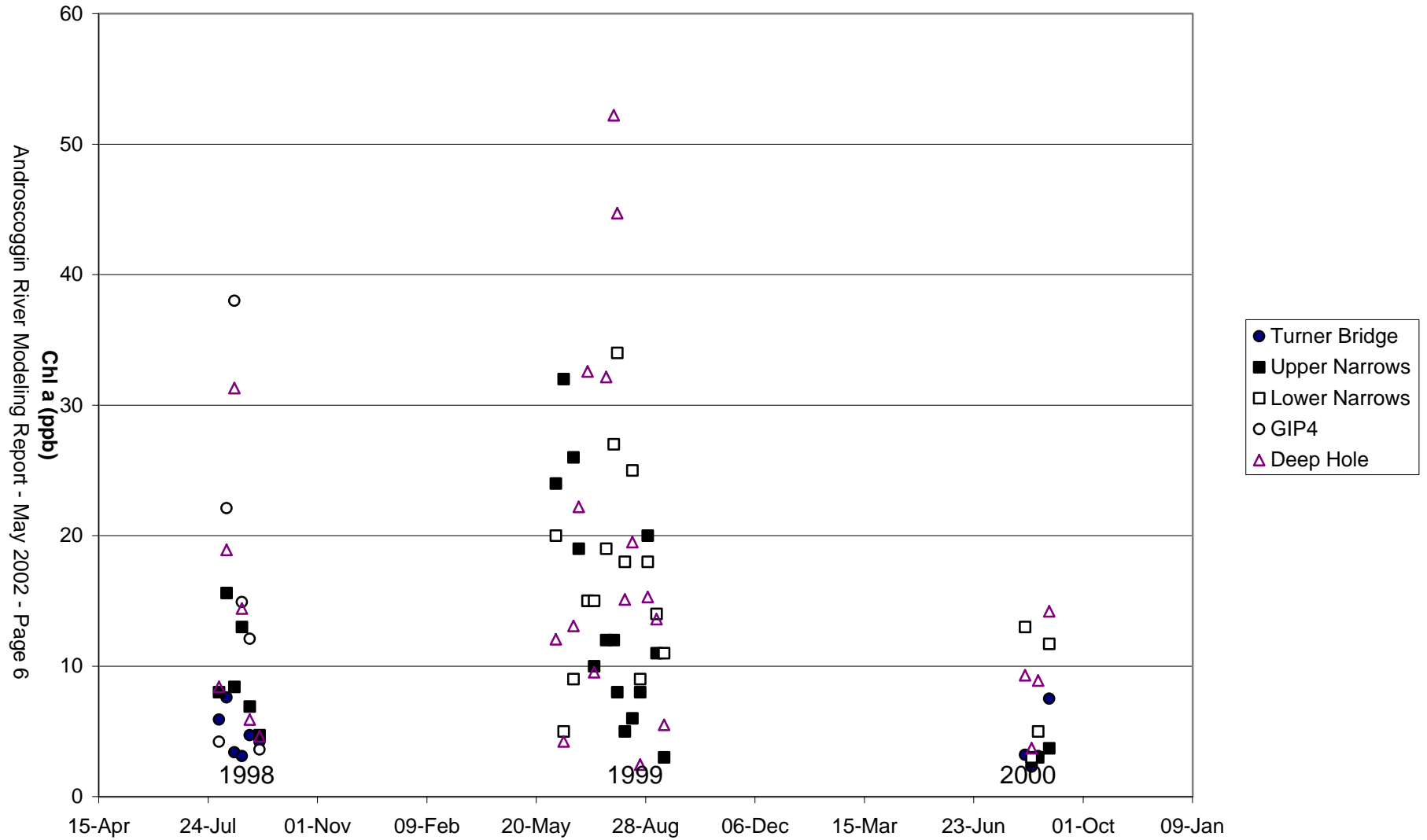


Figure 3
Time of Travel Androscoggin River

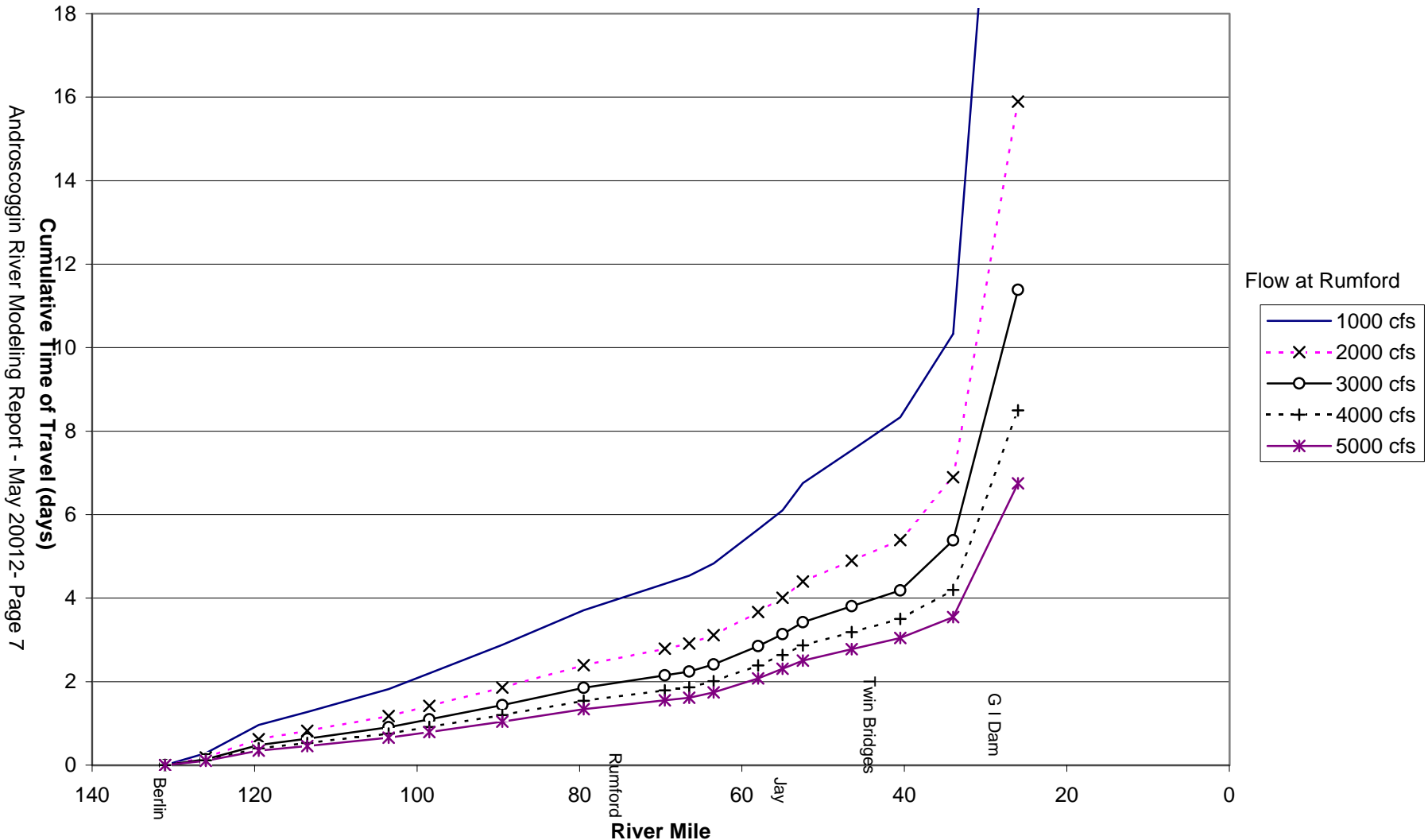


Figure 4
Gulf Island Pond Summer 1999
% Volume of Dissolved Oxygen Non-Attainment Vs Chlorophyll a

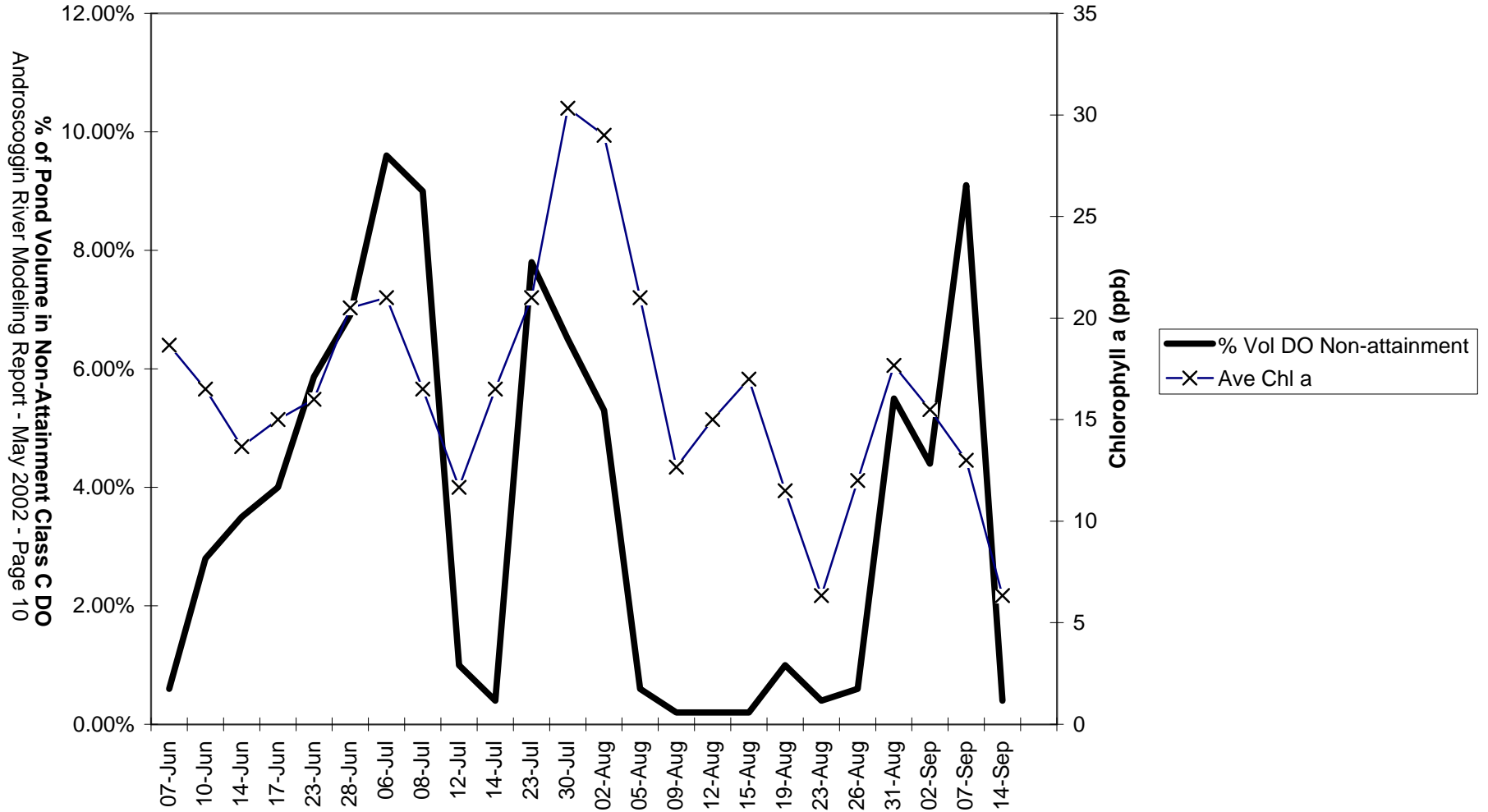


Figure 5
Gulf Island Pond Summer 1999
% Volume of Dissolved Oxygen Non-Attainment Vs Temperature

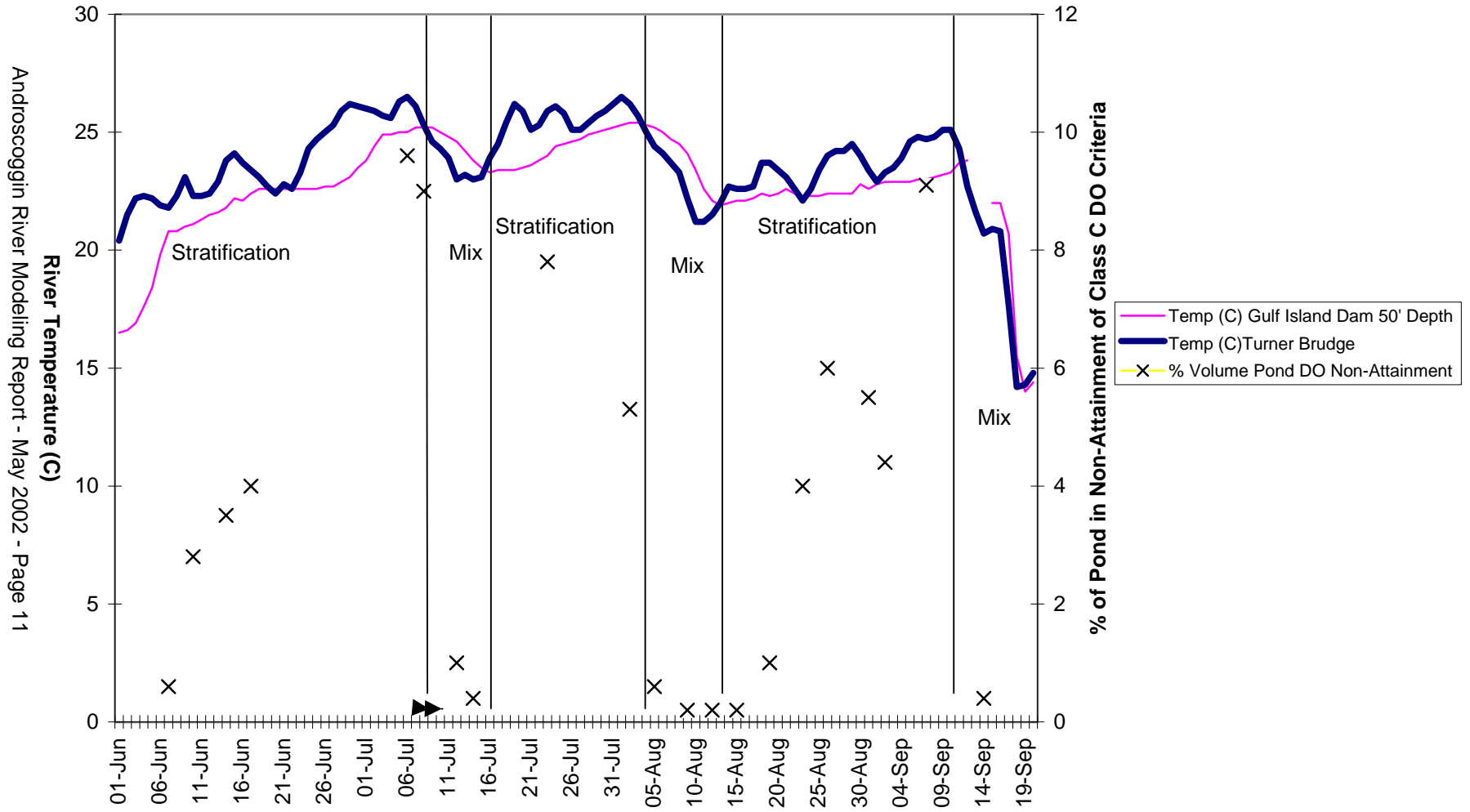
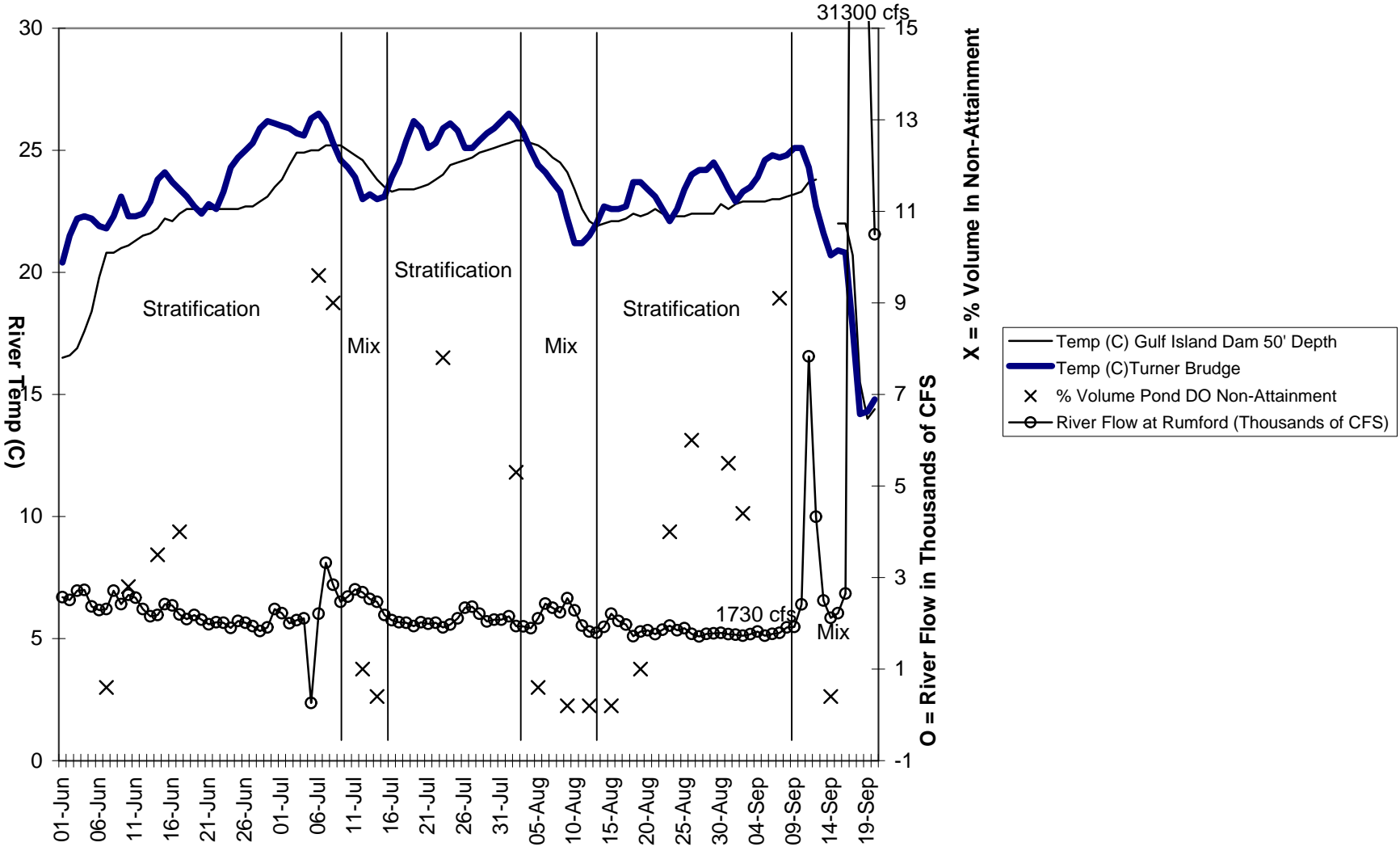


Figure 6
Gulf Island Pond Summer 1999
% Volume of Dissolved Oxygen Non-Attainment Vs Temperature Vs Flow



— Temp (C) Gulf Island Dam 50' Depth
— Temp (C) Turner Bridge
X = % Volume Pond DO Non-Attainment
○ = River Flow at Rumford (Thousands of CFS)

Figure 7
Gulf Island Pond Summer 1999
% Volume of Dissolved Oxygen Non-Attainment Vs Temperature Vs Chlorophyll A

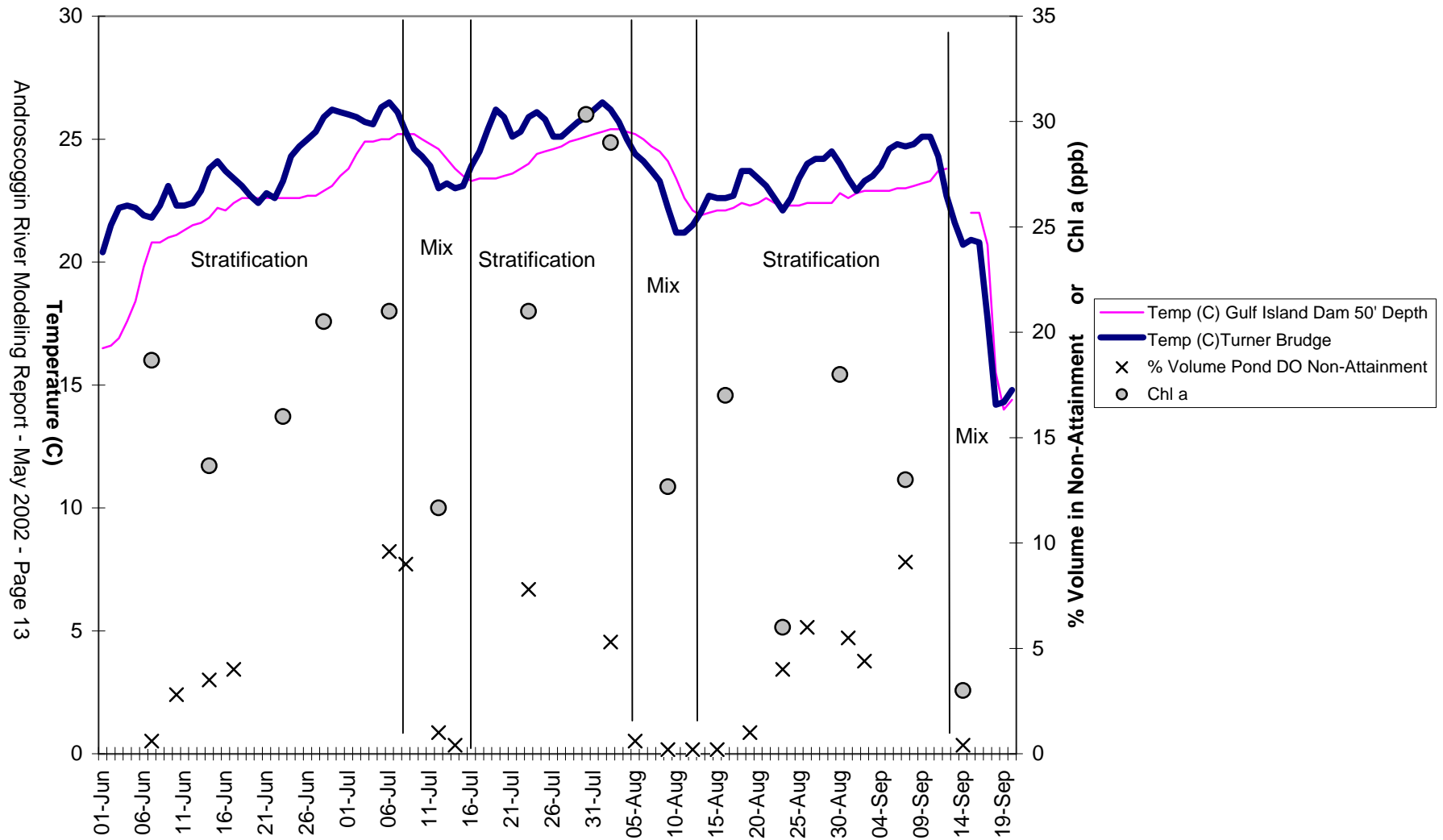


Figure 7a WASP Model Schematic

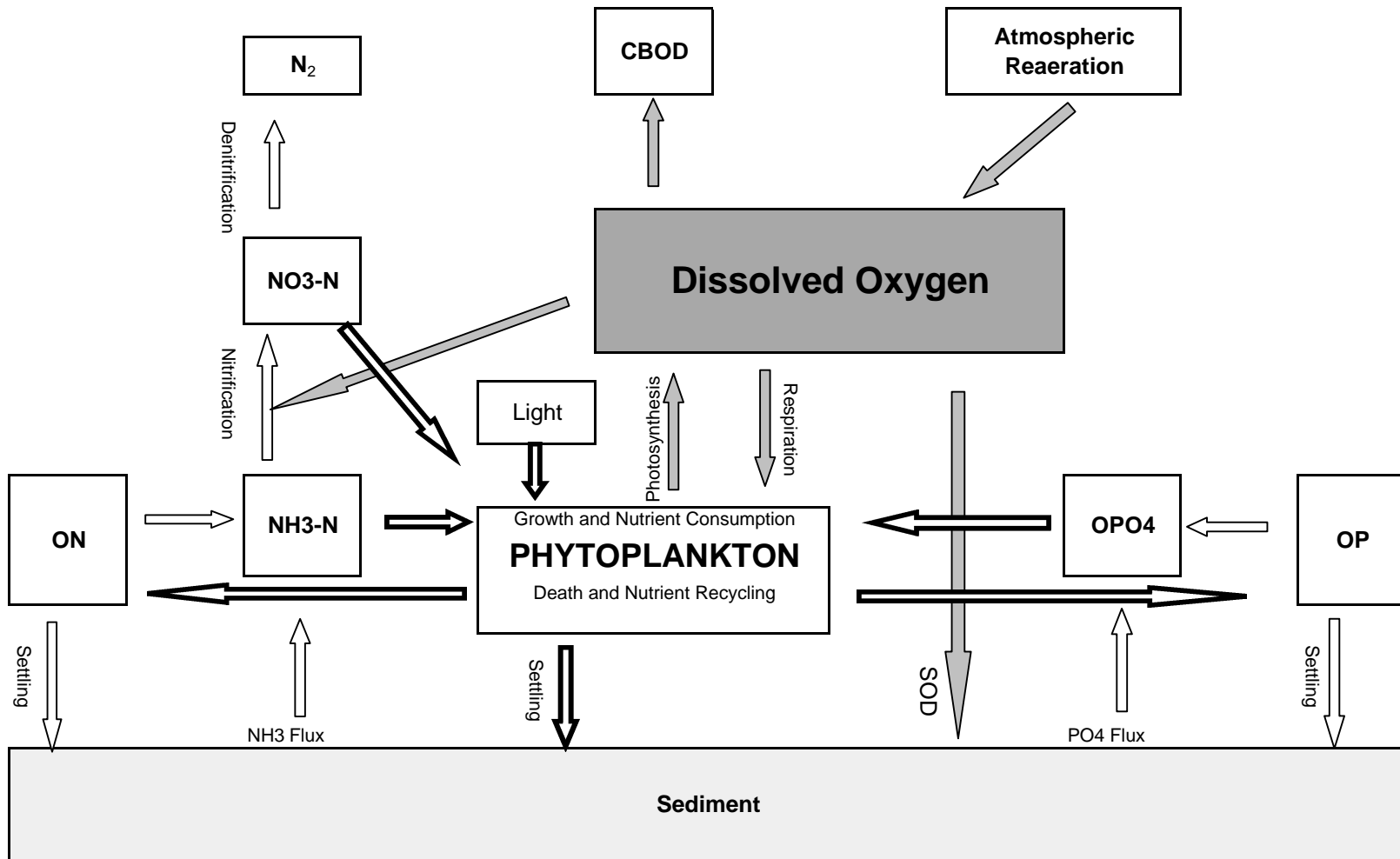


Figure 8
Qual2EU Model Setup for Upper Androscoggin River

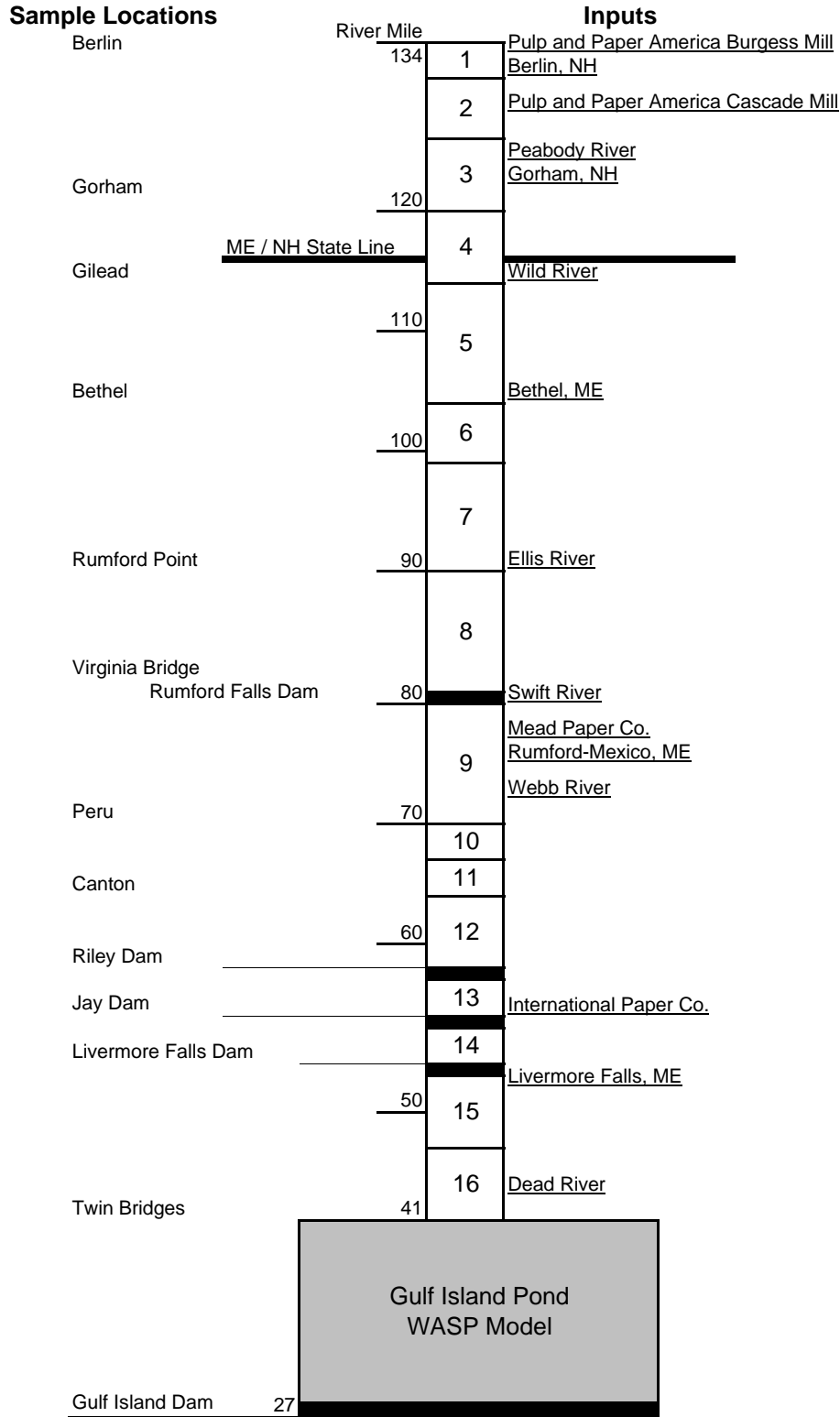


Figure 9 WASP Model Segmentation for Gulf Island Pond

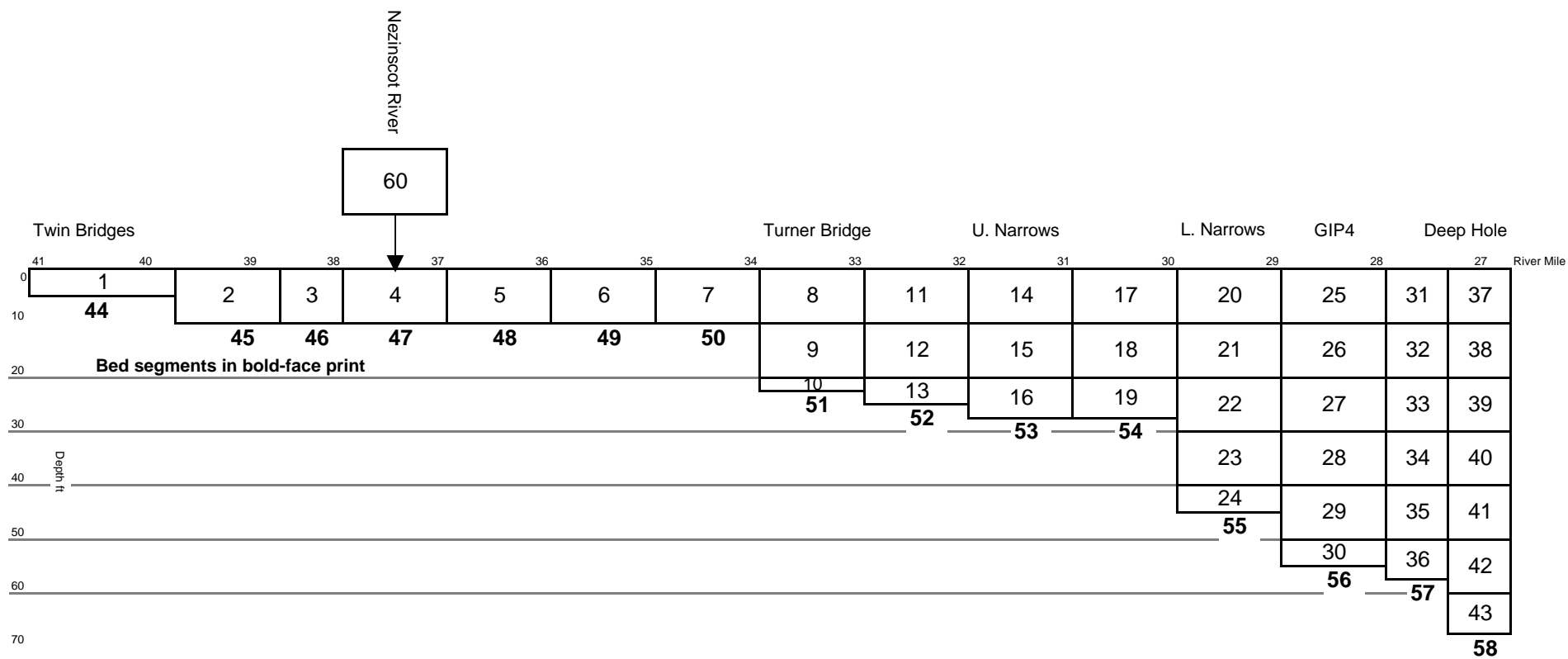
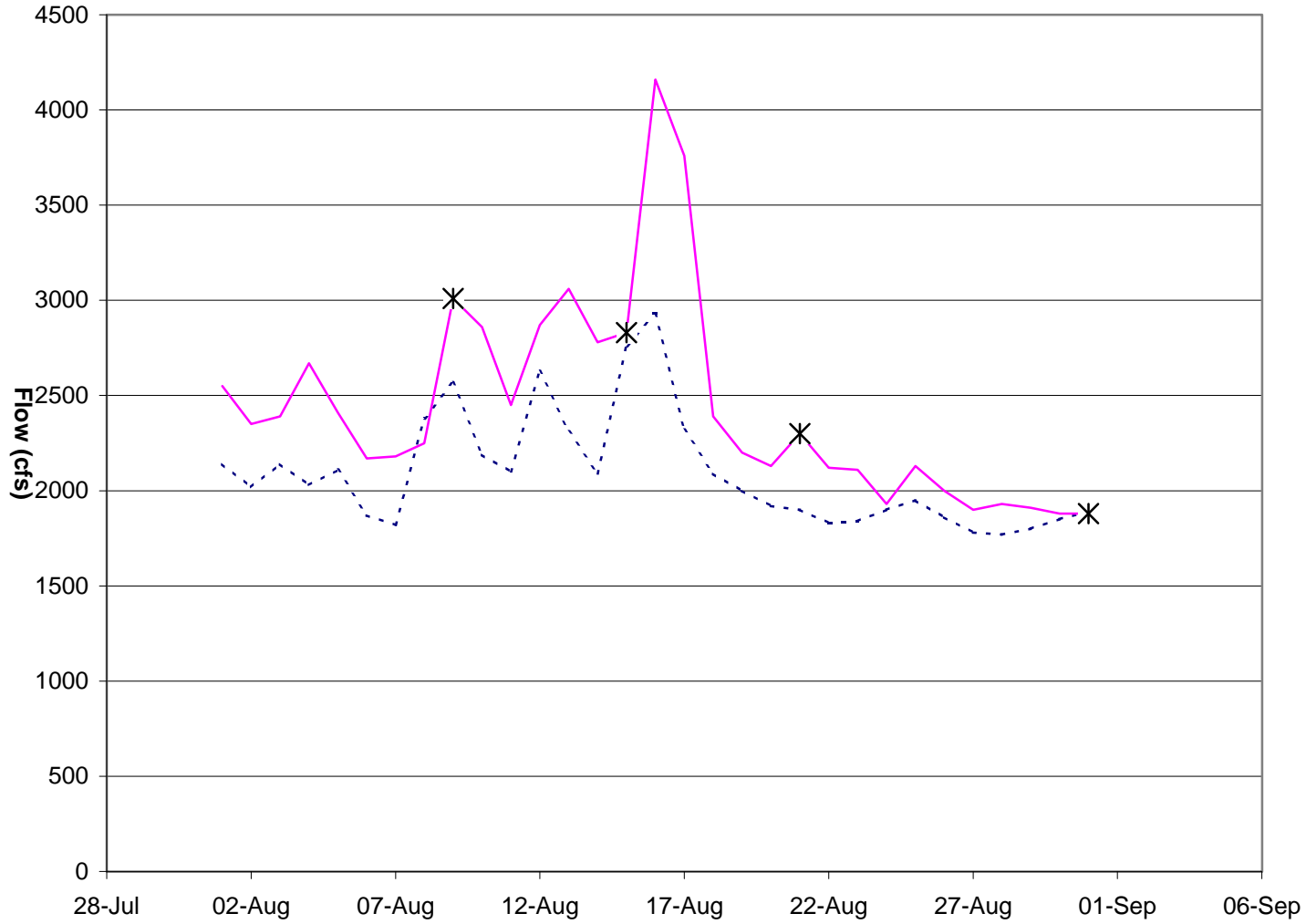


Figure 10
Androscoggin River Flow
August 2000



--- Rumford
— Turner
—*— Sampling Dates

Figure 11 - Model Calibration of Ultimate BOD - August 2000 Data

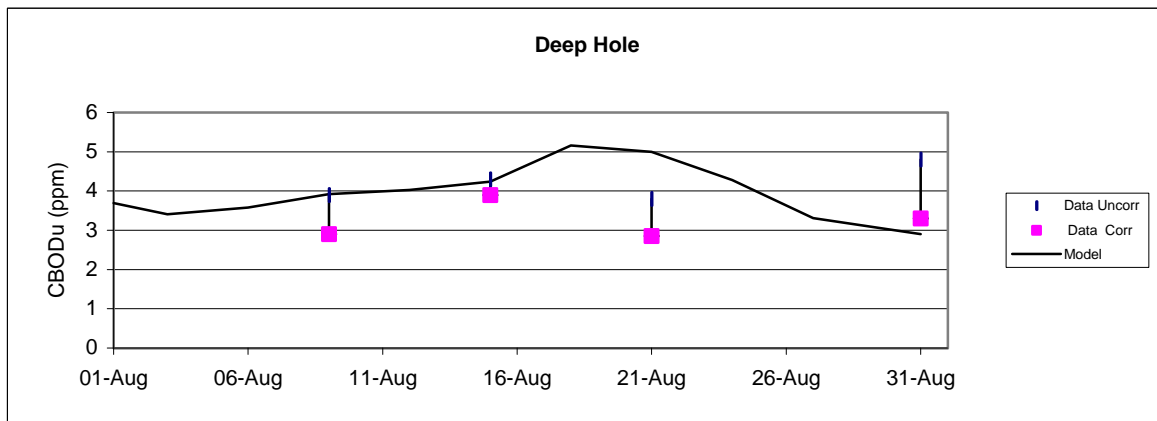
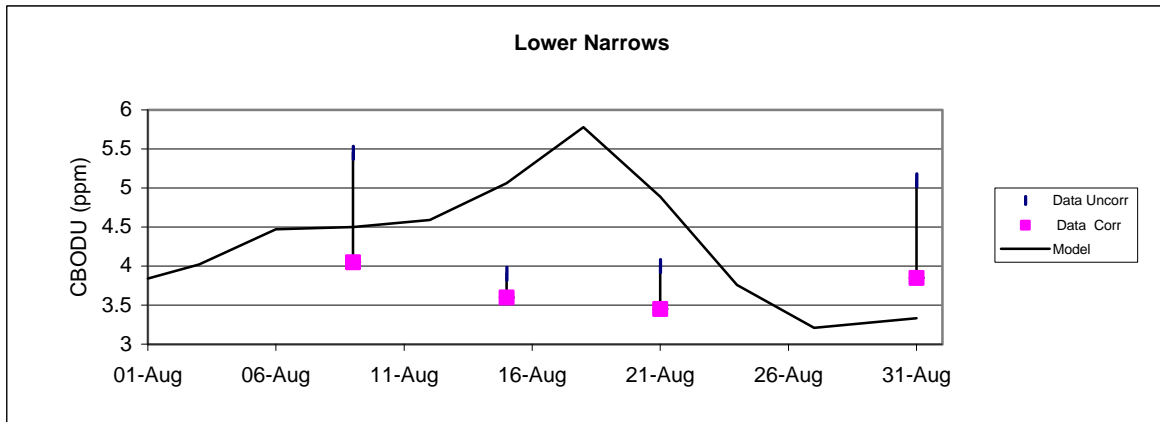
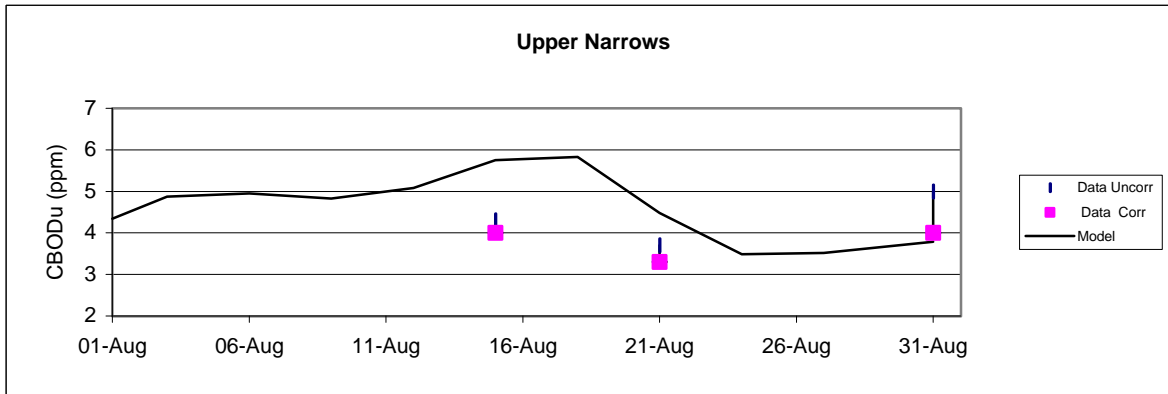
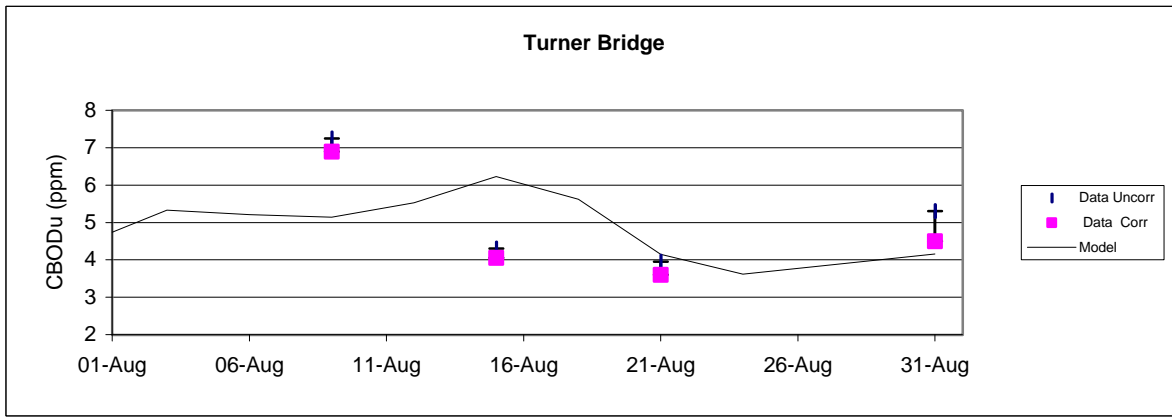


Figure 12
Model Solar Radiation

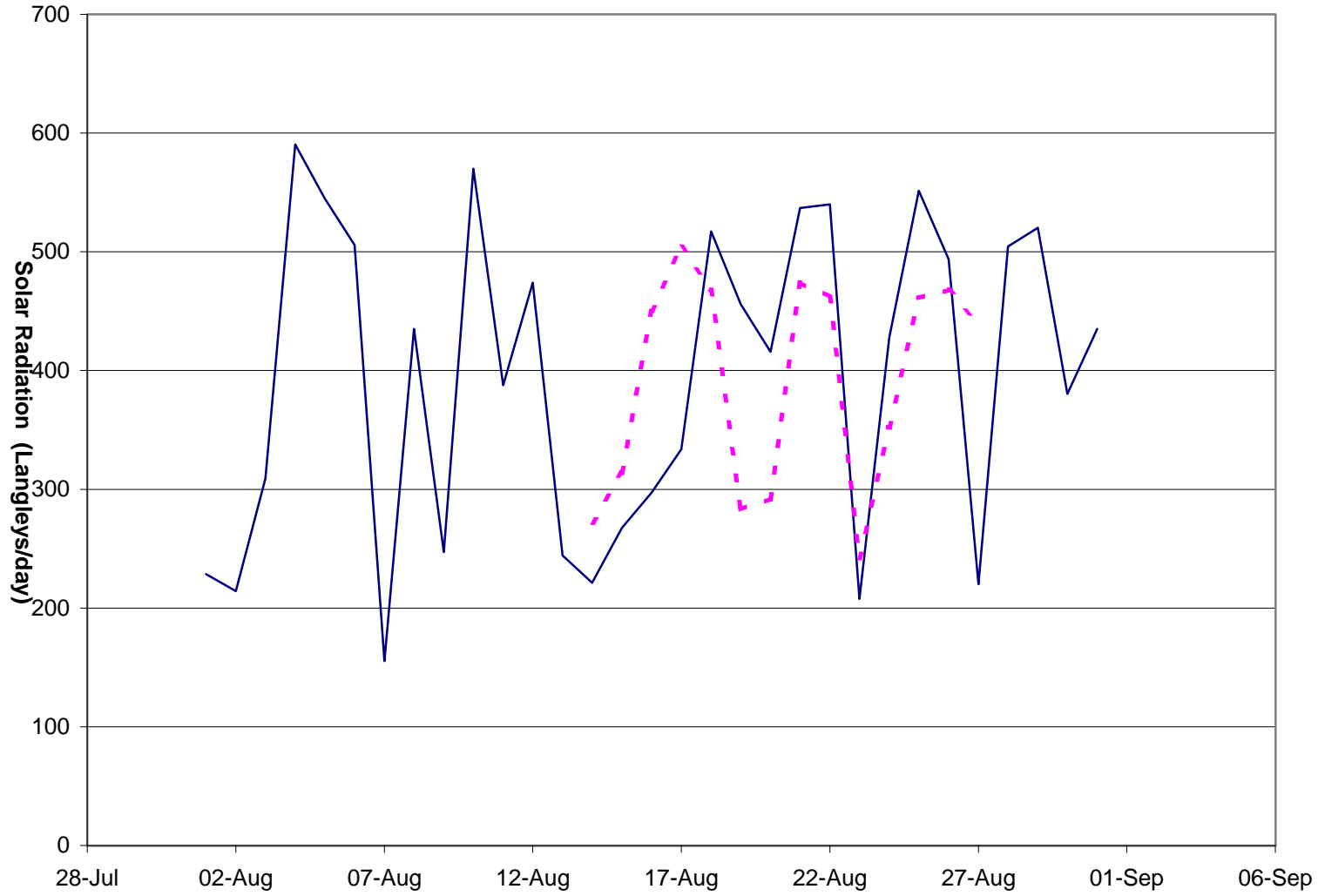


Figure 13 - Model Calibration of Chlorophyll a - August 2000 Data

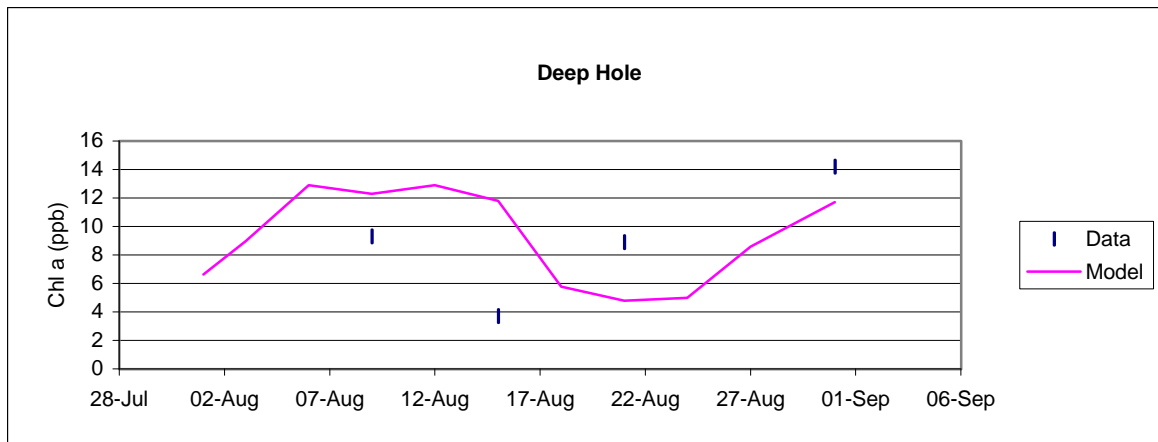
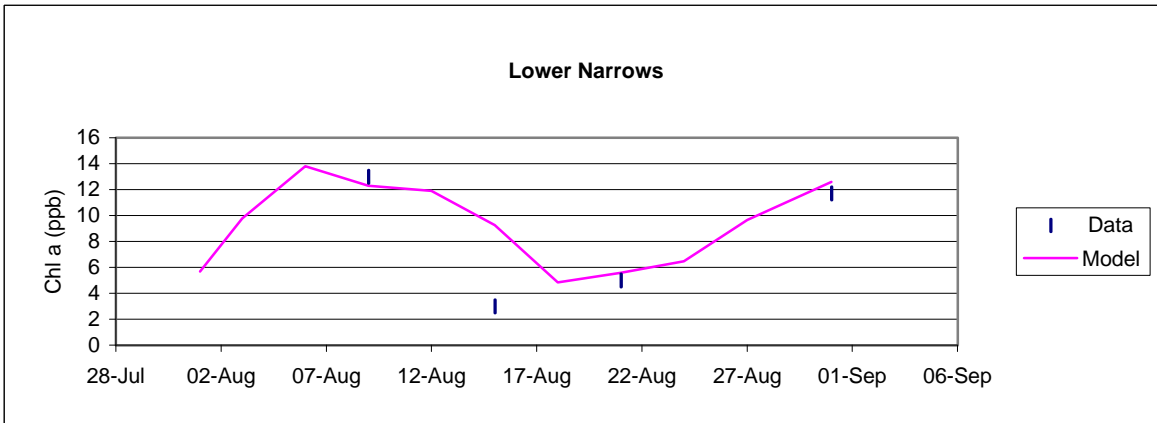
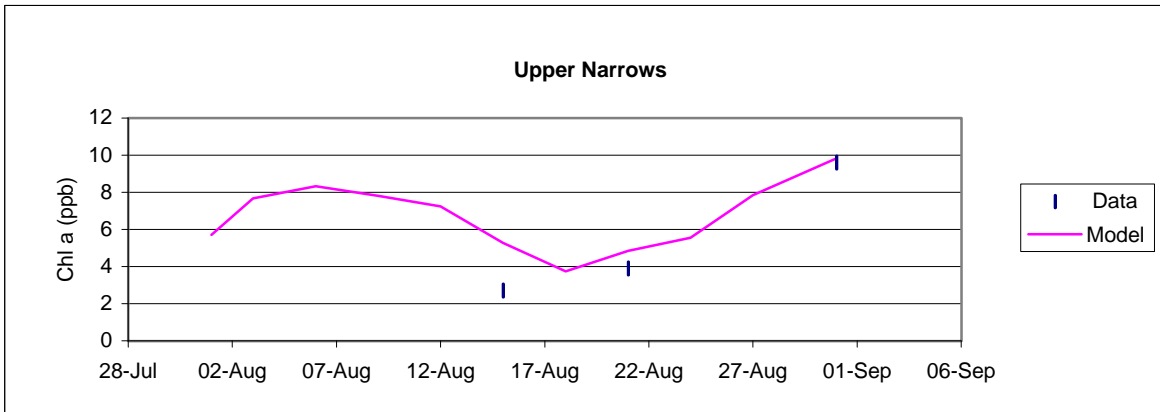
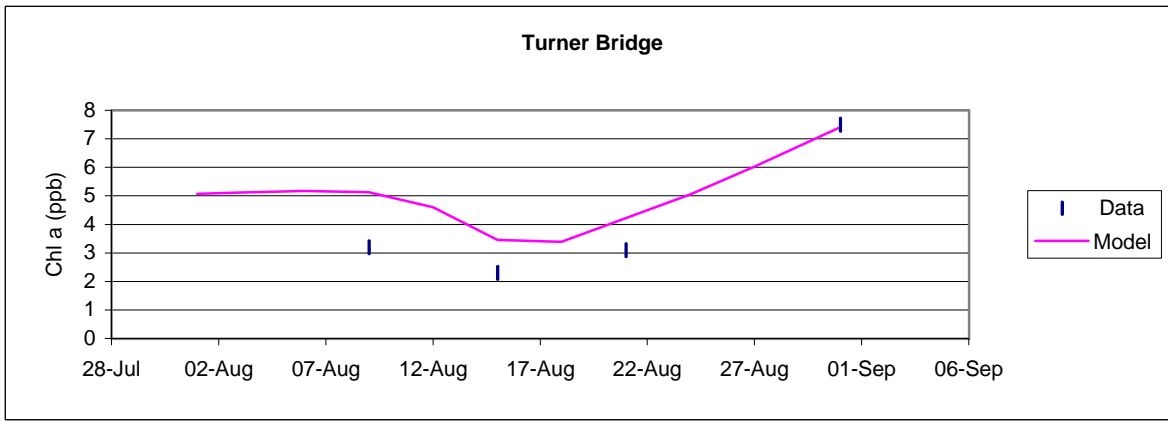


Figure 14 - Model Calibration of Total Nitrogen - August 2000 Data

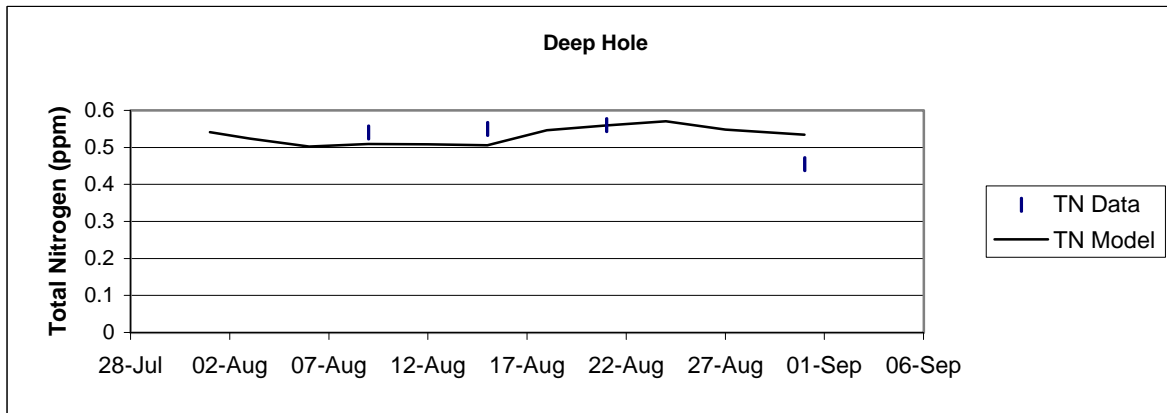
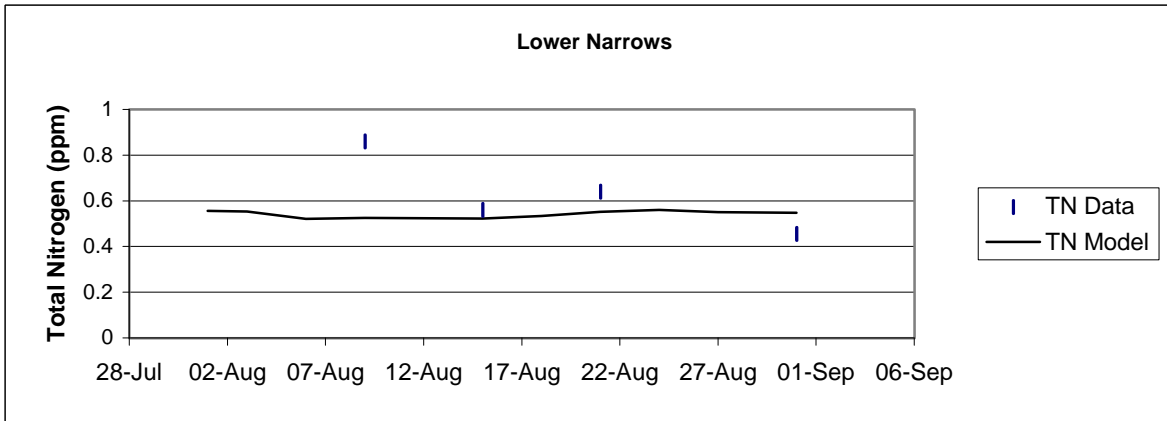
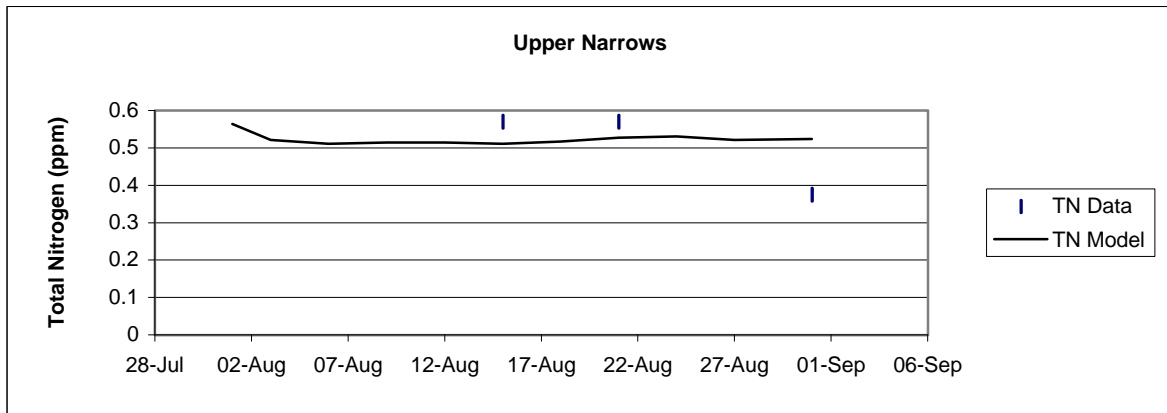
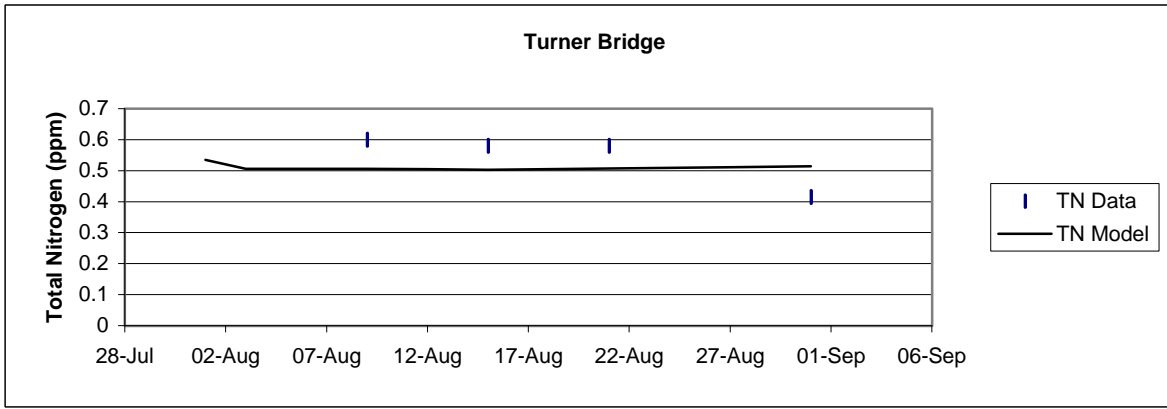


Figure 15 - Model Calibration of Total Phosphorus - August 2000

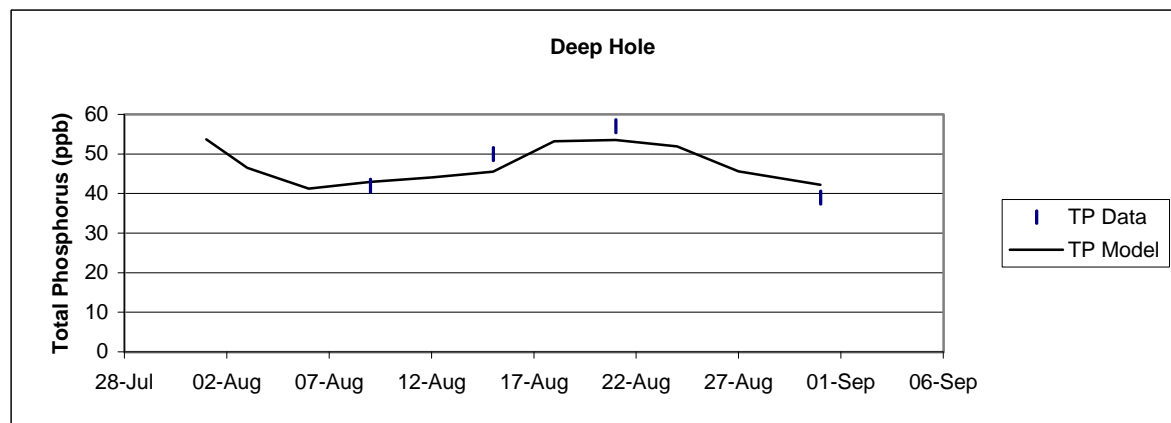
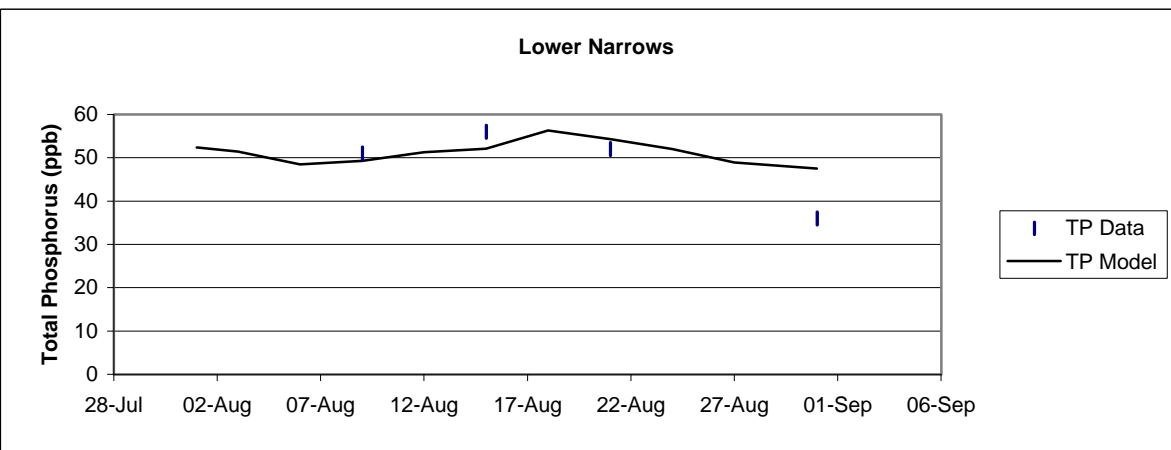
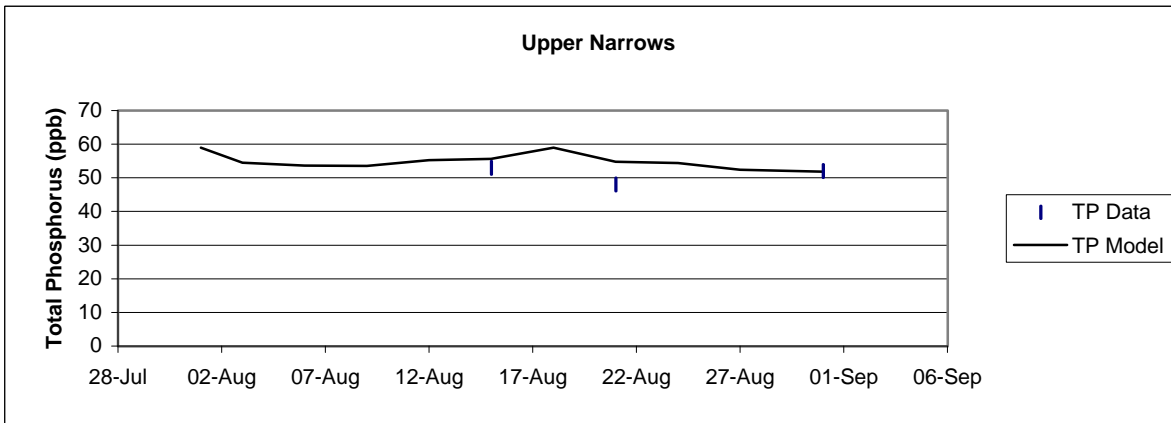
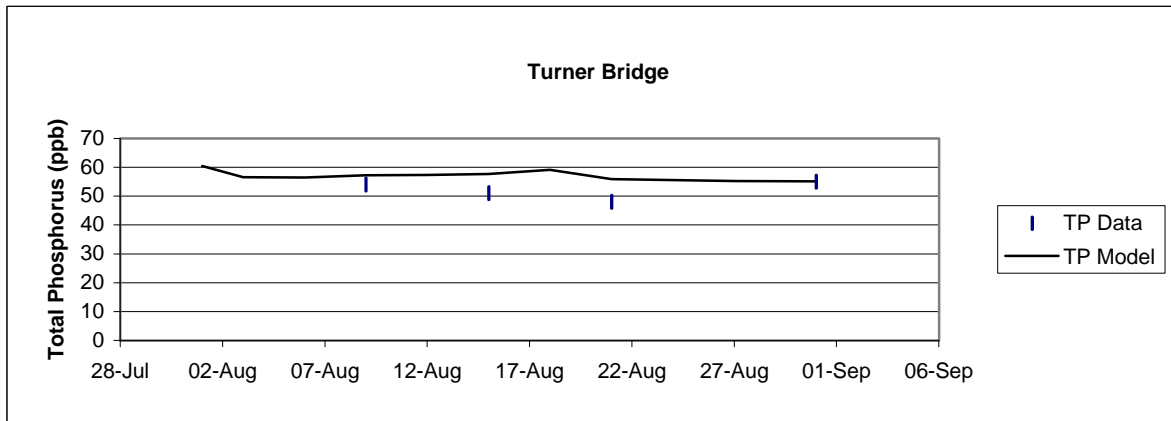


Figure 16 - Model Verticle Dispersion Rate

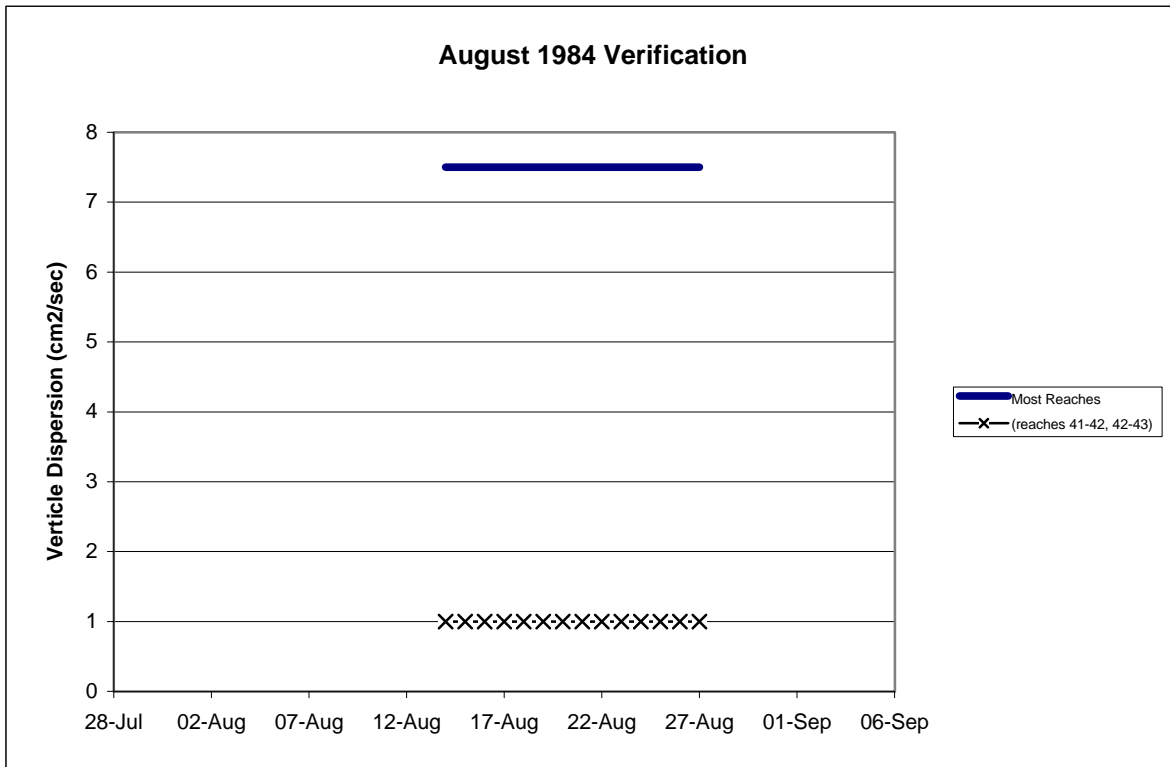
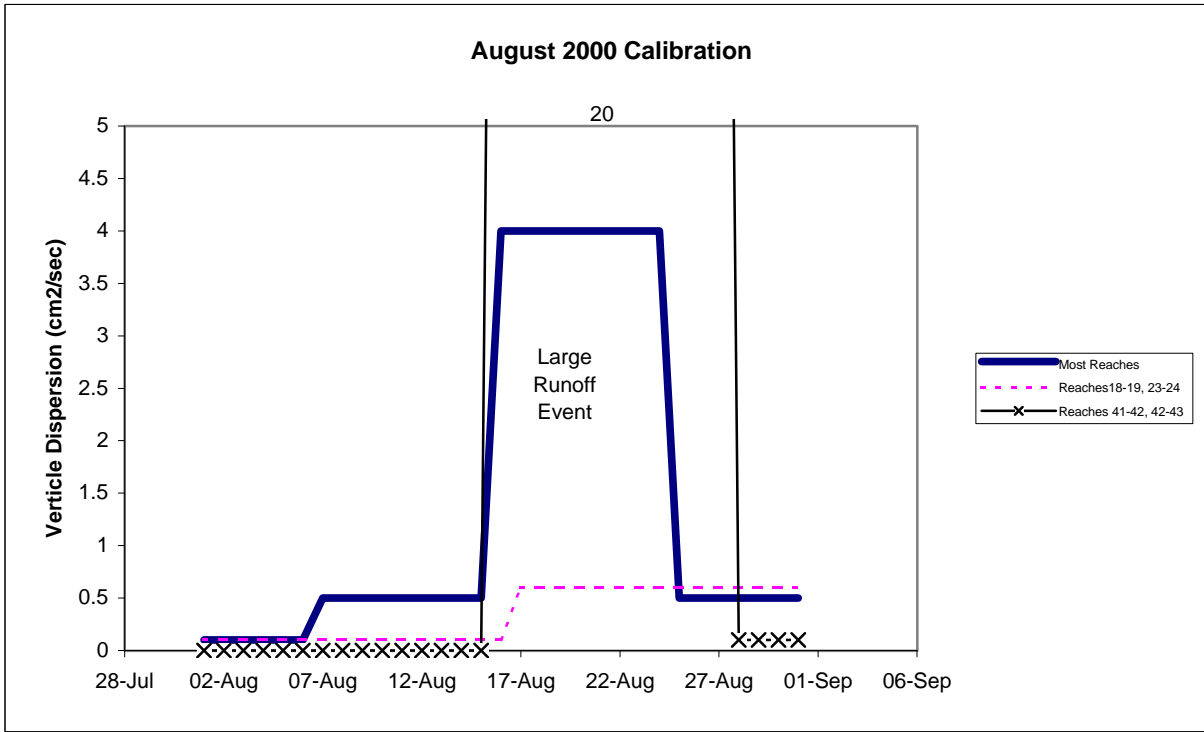


Figure 17
Continuous Model Calibration of Dissolved Oxygen
Turner Bridge Monitor August 2000

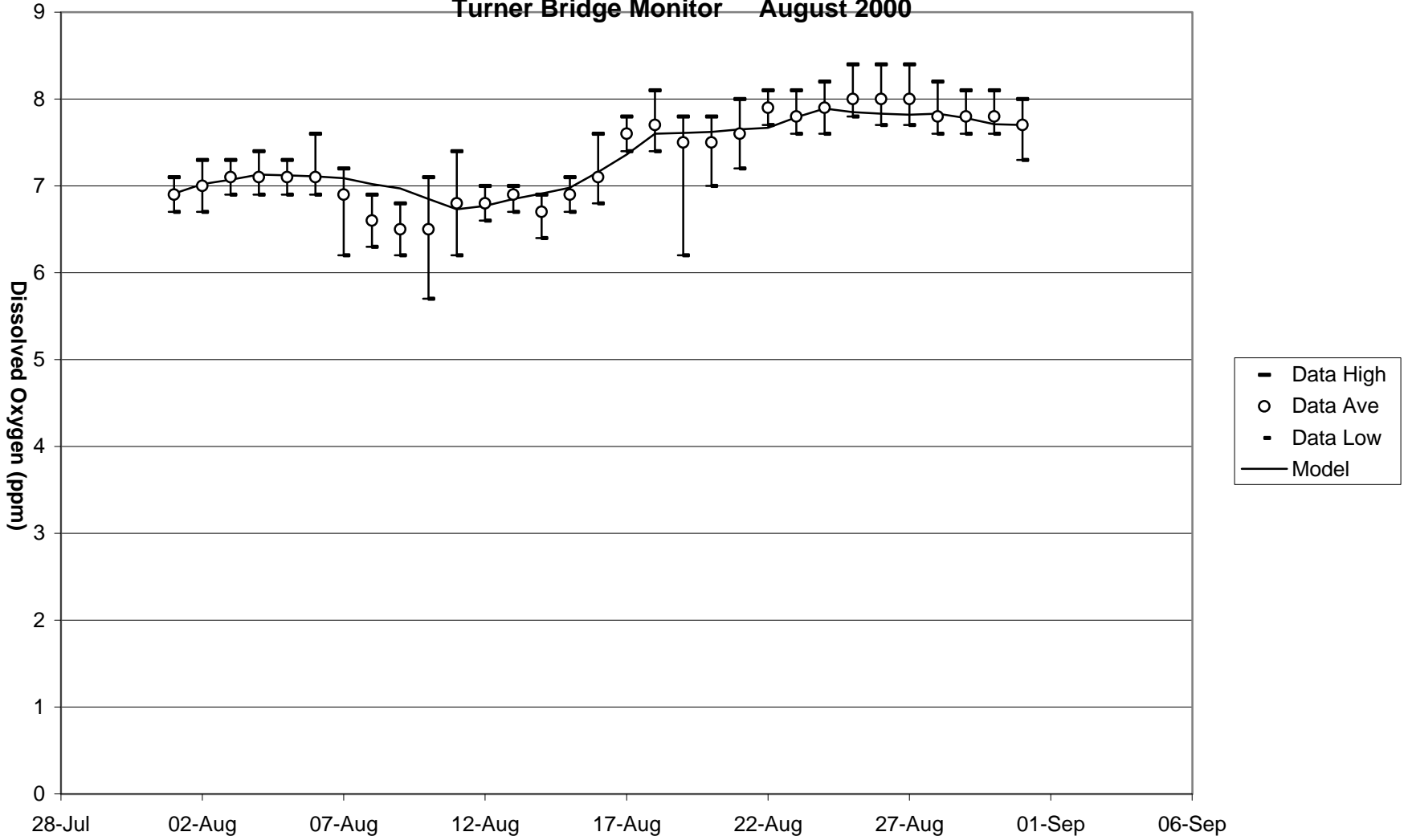


Figure 18 - Continuous Model Calibration of Dissolved Oxygen - Gulf Island Dam - August 2000

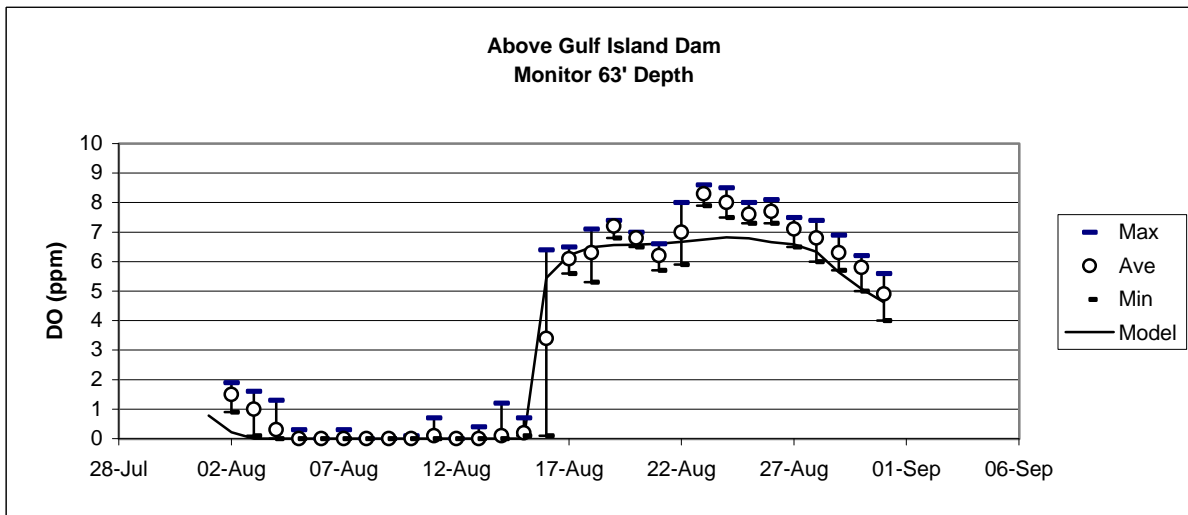
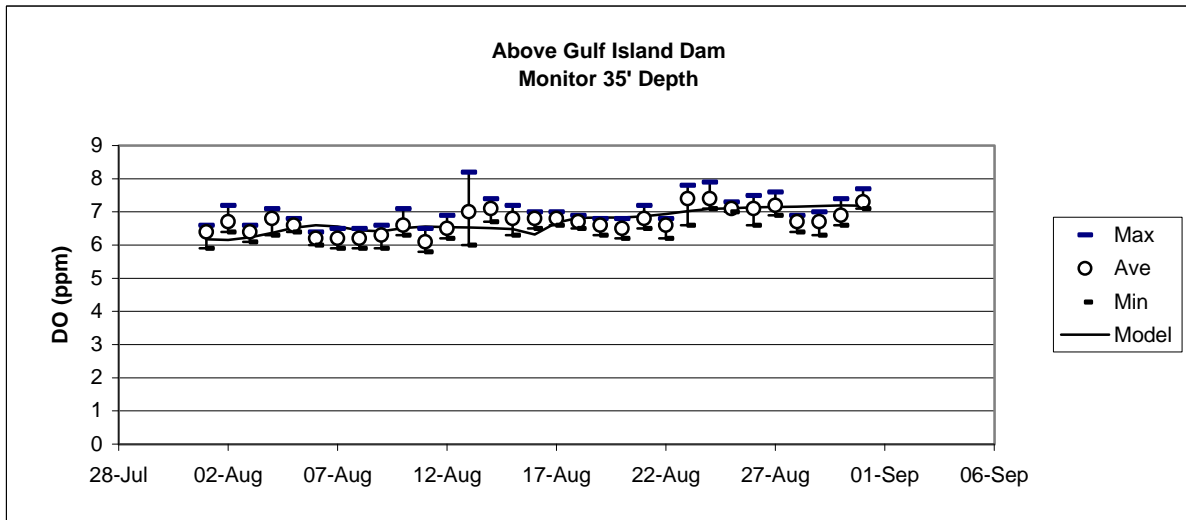
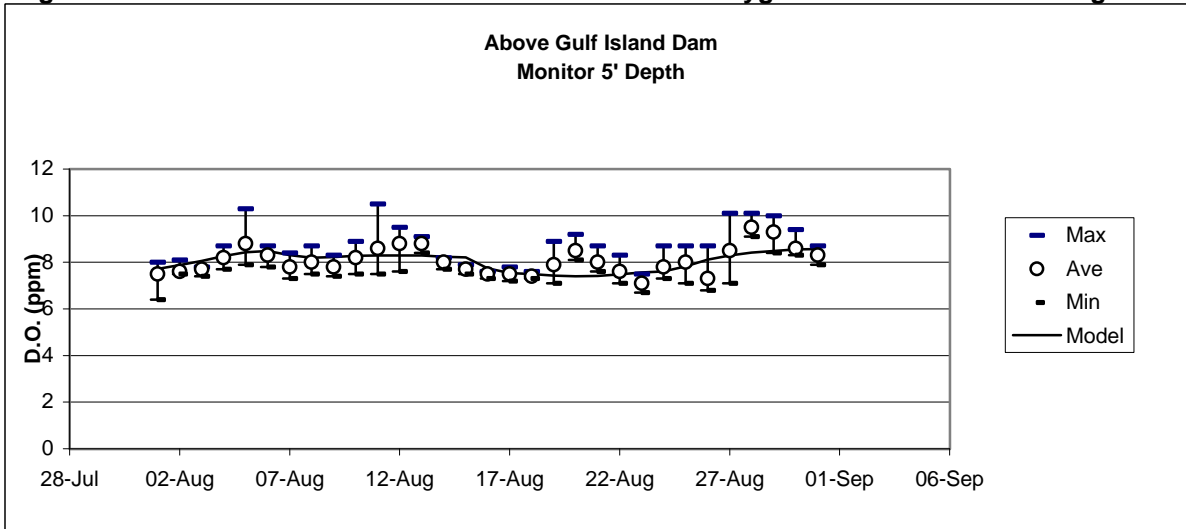


Figure 19a - Calibration of Dissolved Oxygen by River Mile - August 9, 2000

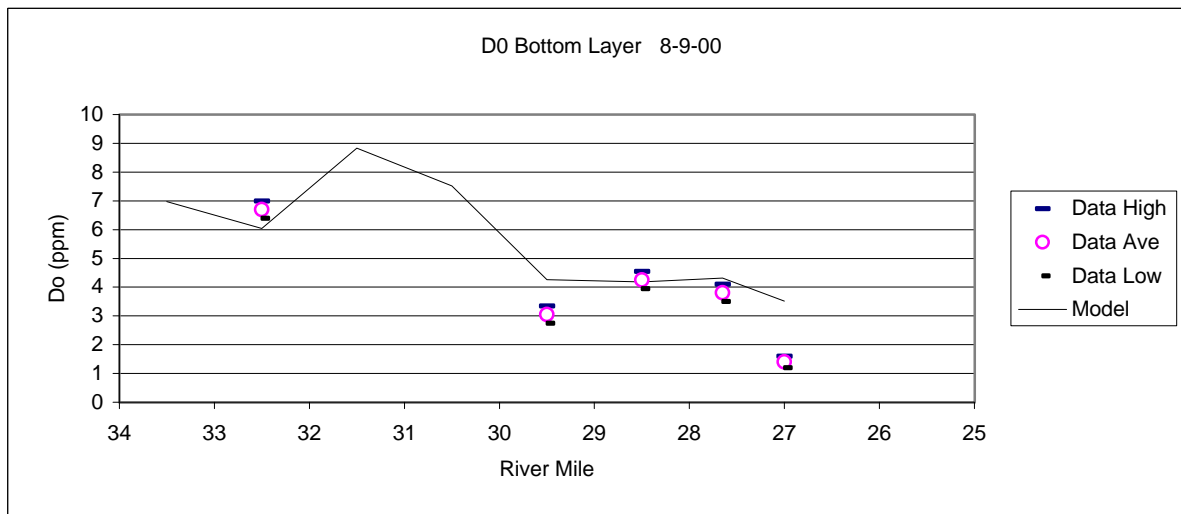
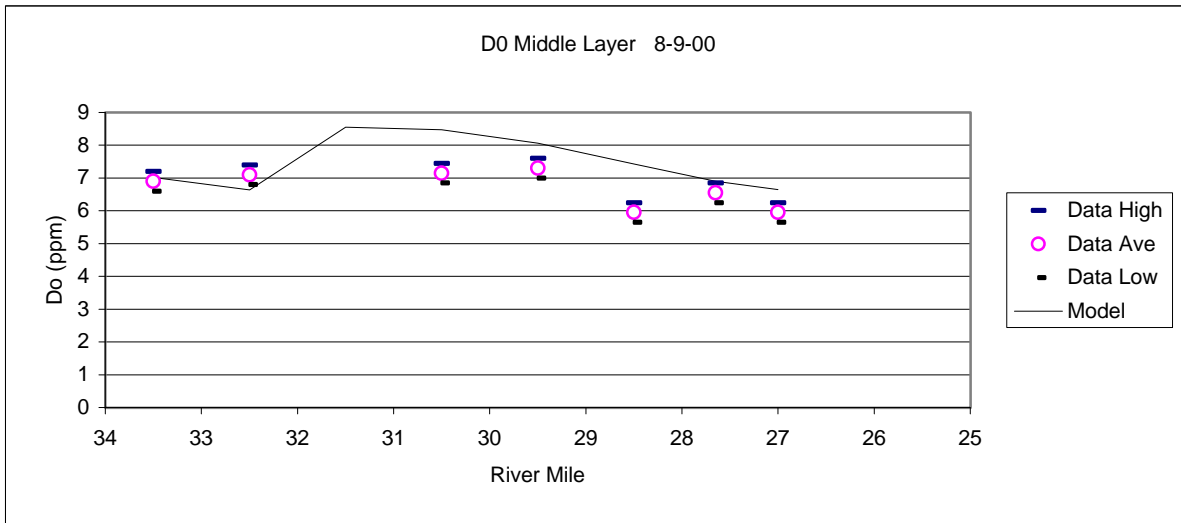
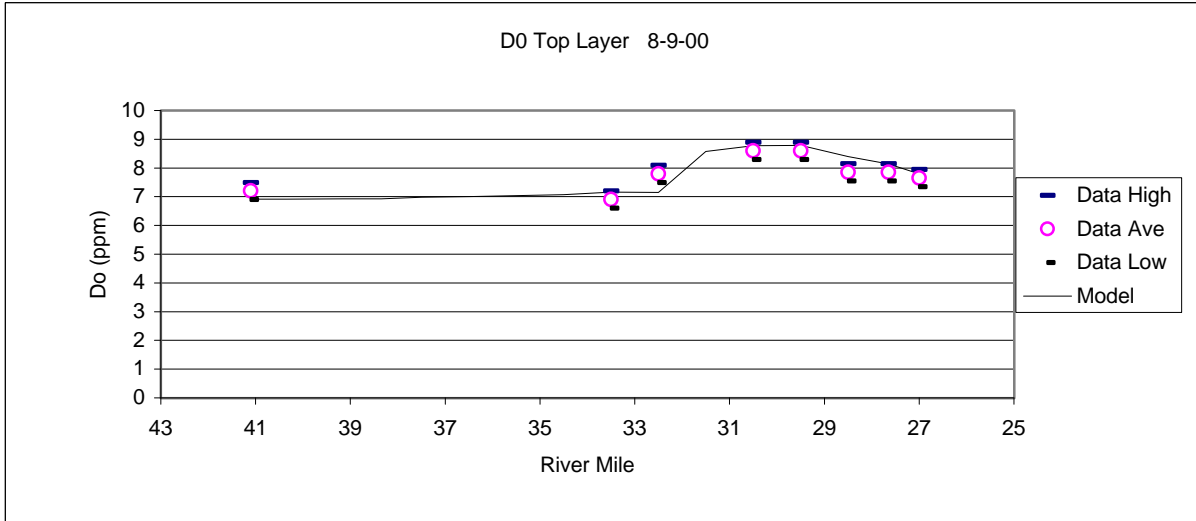


Figure 19b - Calibration of Dissolved Oxygen by River Mile - August 15, 2000

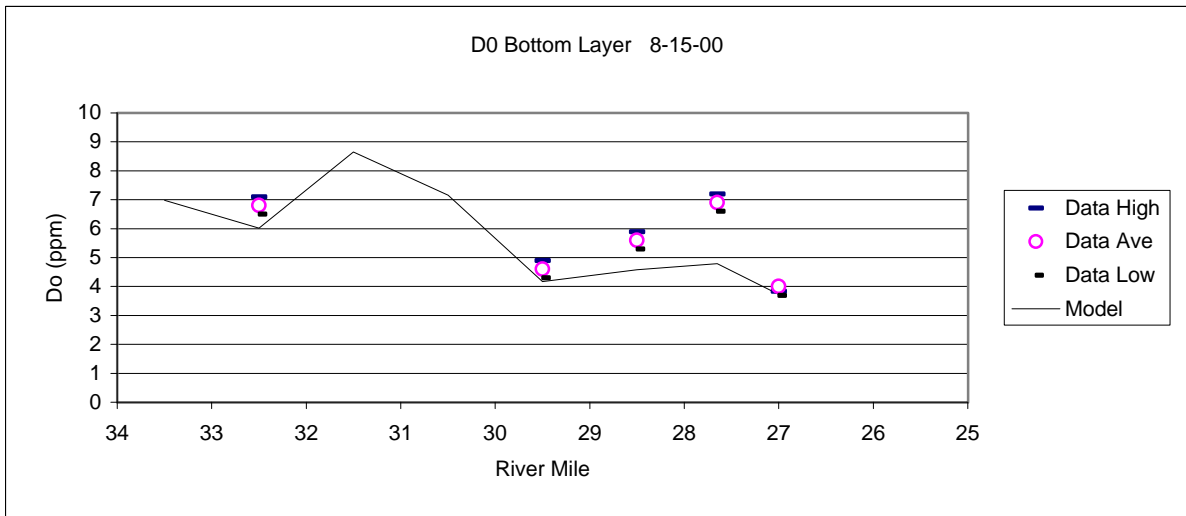
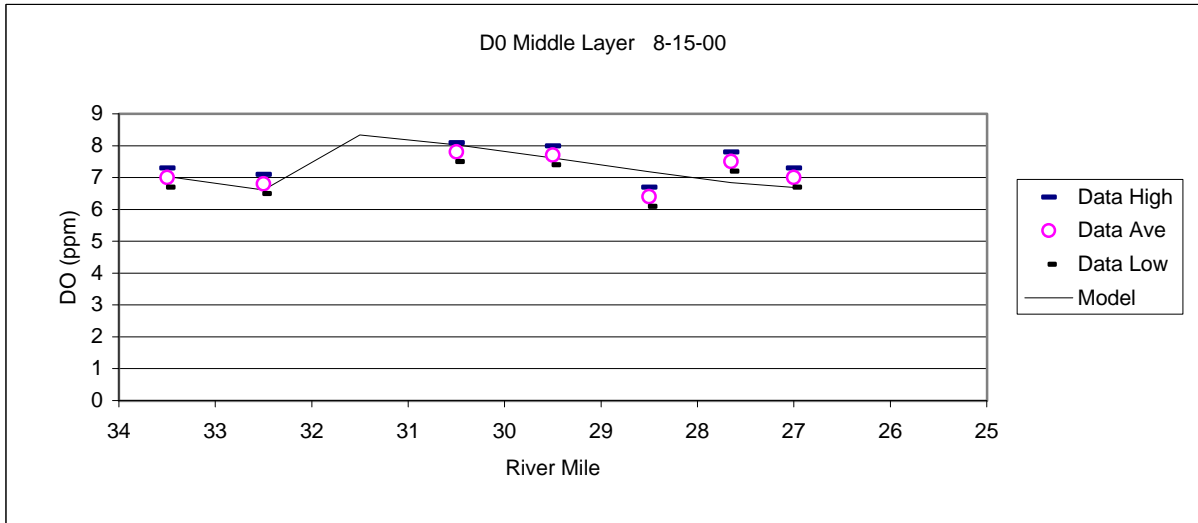
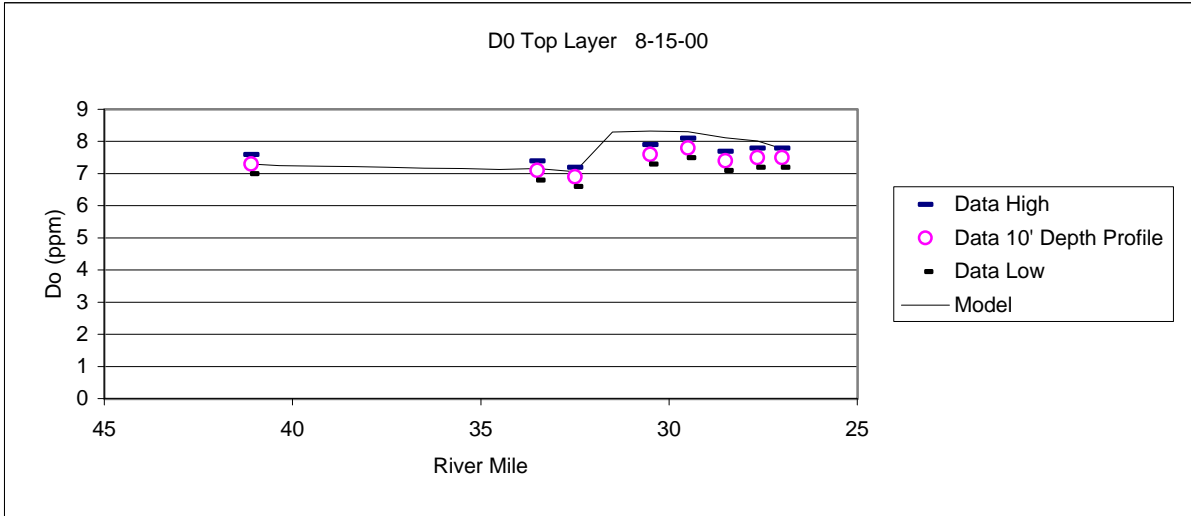


Figure 19c - Calibration of Dissolved Oxygen by River Mile - August 31, 2000

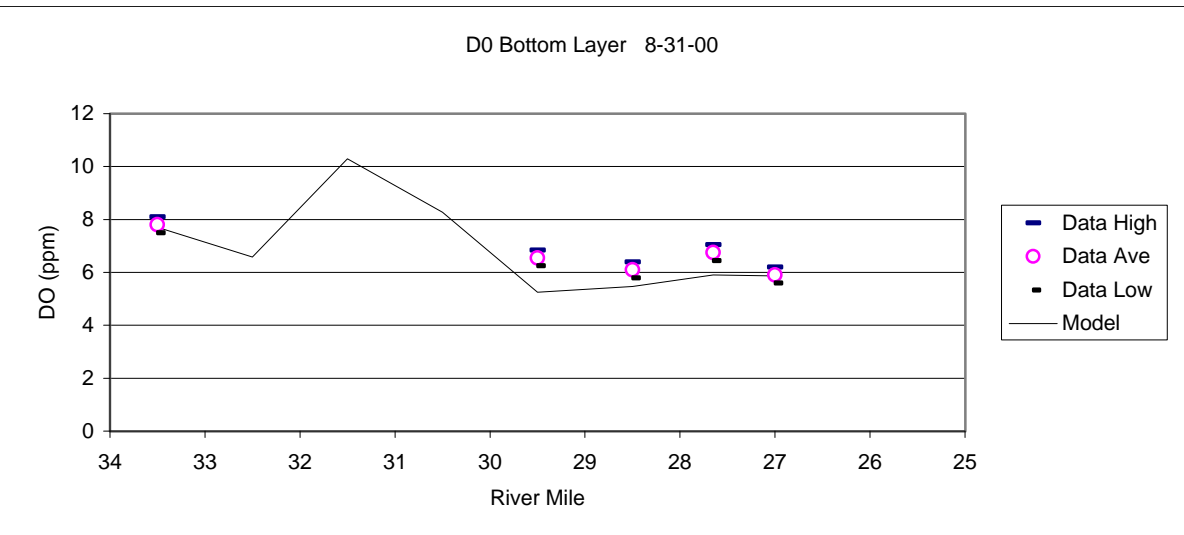
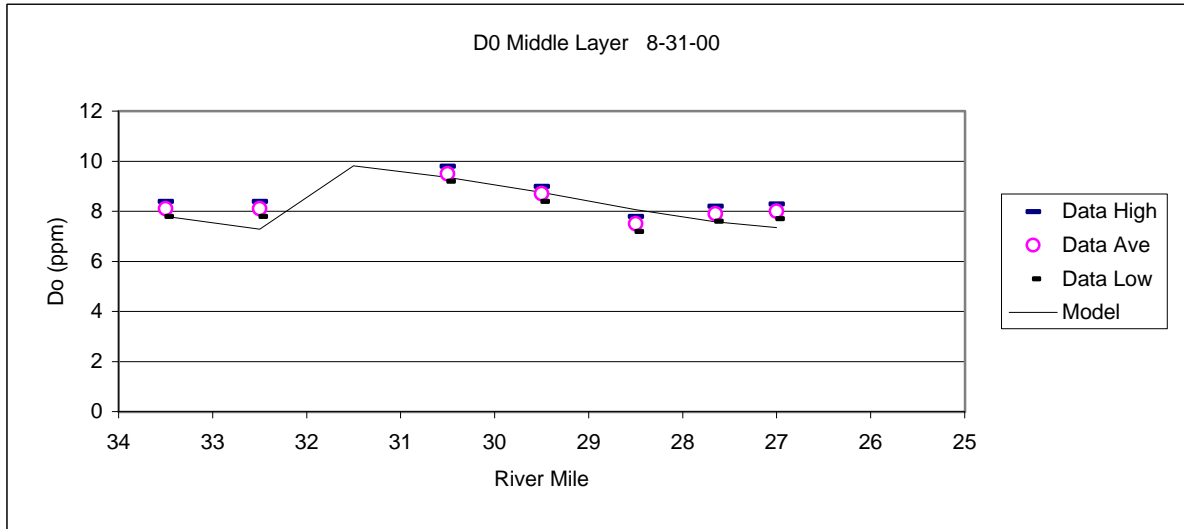
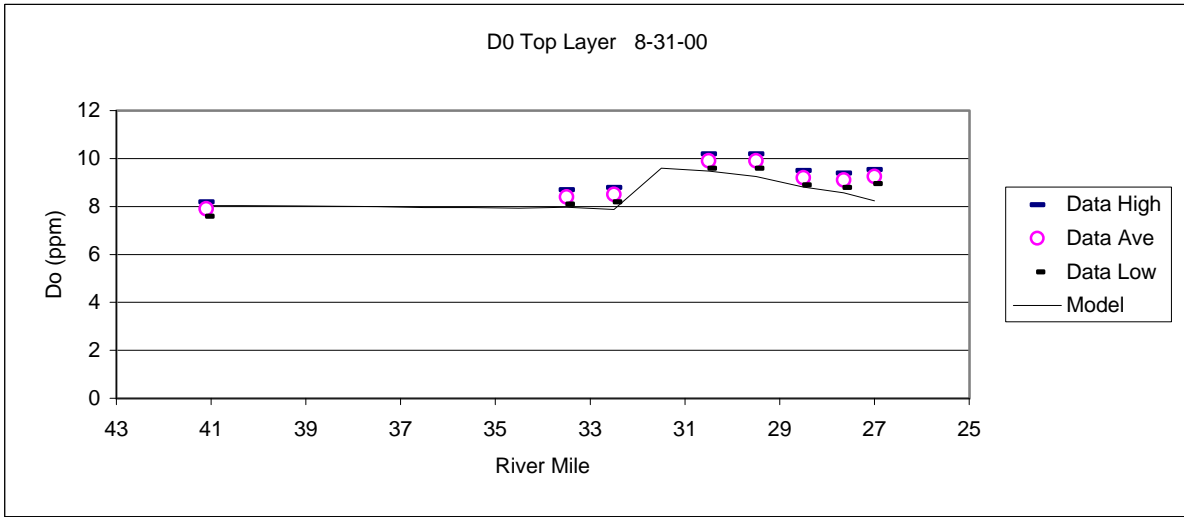


Figure 20 - Model Verification of the August 1984 Data in Gulf Island Pond

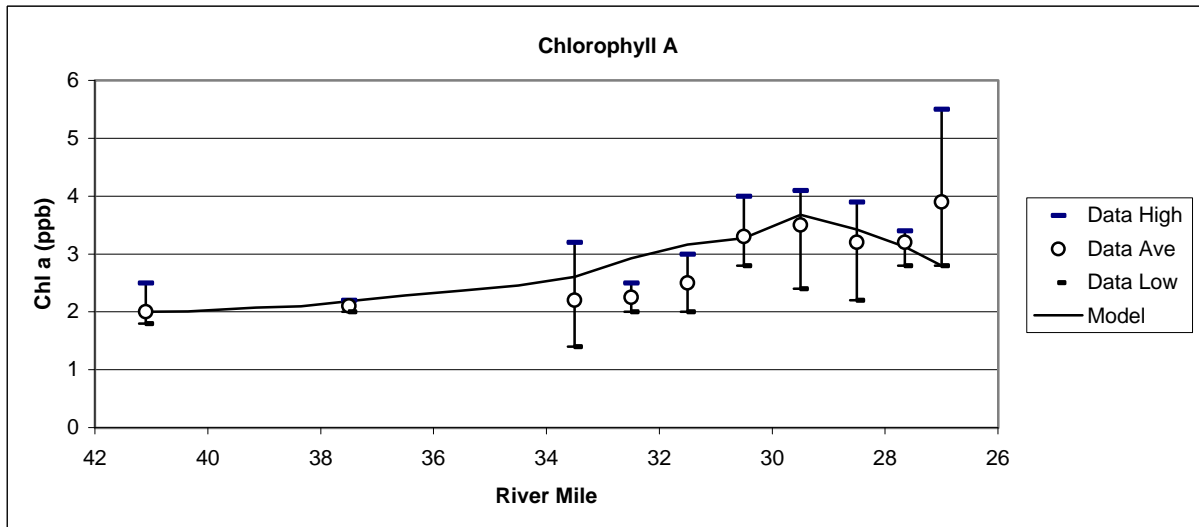
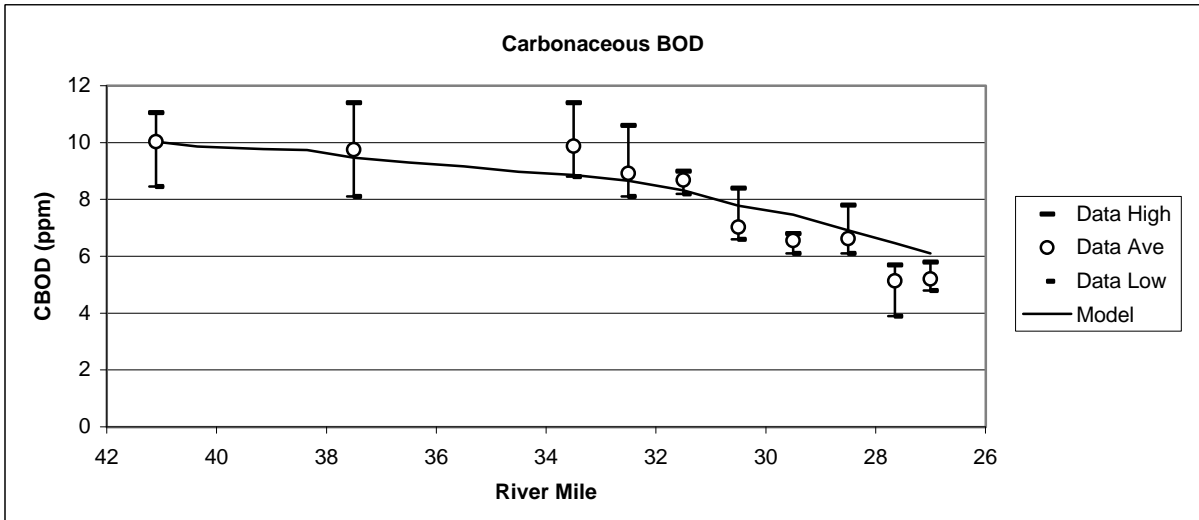
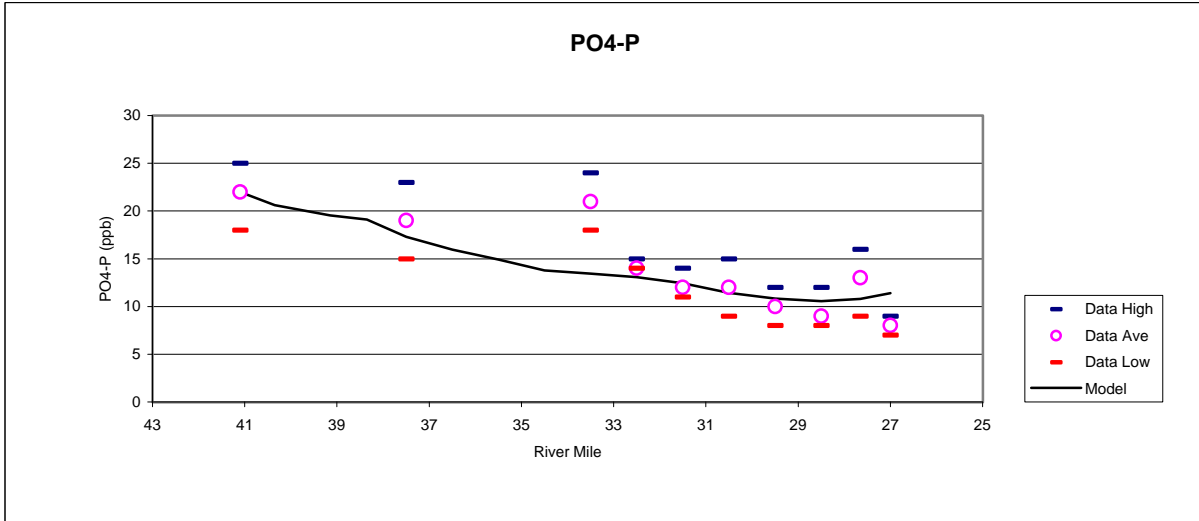




Figure 20a - Model Verification of the August 1984 DO in Gulf Island Pond

