

Arrival  
2/2/2000

## Salem Sound 2000

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# Site 630: 24 in. Storm Drain at Derby Wharf

4/9/99

| Site | Date     | Fecal Coliform | Weather Rating |
|------|----------|----------------|----------------|
| 630  | 6/16/94  | 49999.9        | 0              |
| 630  | 7/7/94   | 24000          | 0              |
| 630  | 7/14/94  | 49999.9        | 0              |
| 630  | 8/11/94  | 4,264,000      | 0              |
| 630  | 1/18/95  | 409,999        | 0              |
| 630  | 1/25/95  | 219,999.00     | 0              |
| 630  | 2/8/95   | 590,000        | 0              |
| 630  | 3/22/95  | 399,999.90     | 0              |
| 630  | 8/2/95   | 39999.9        | 0              |
| 630  | 6/24/97  | 2400           | 0              |
| 630  | 9/17/97  | 55.5           | 0              |
| 630  | 10/22/97 | 55.5           | 0              |
| 630  | 8/25/94  | 4,000,000      | 1              |
| 630  | 12/21/94 | 155555.5       | 1              |
| 630  | 1/4/95   | 105555.5       | 1              |
| 630  | 3/1/95   | 39999.9        | 1              |
| 630  | 4/5/95   | 399,999.90     | 1              |
| 630  | 7/12/95  | 111000         | 1              |
| 630  | 3/6/96   | 40000          | 1              |
| 630  | 7/2/96   | 330            | 1              |
| 630  | 9/2/97   | 50             | 1              |
| 630  | 10/1/97  | 100            | 1              |
| 630  | 12/3/97  | 55.5           | 1              |
| 630  | 4/29/98  | 100            | 1              |
| 630  | 5/13/98  | 55.5           | 1              |
| 630  | 5/27/98  | 100            | 1              |
| 630  | 6/10/98  | 300            | 1              |
| 630  | 2/16/99  | 300            | 1              |
| 630  | 6/30/94  | 49999.9        | 2              |
| 630  | 8/18/94  | sample - high  | 2              |
| 630  | 12/7/94  | 155555.5       | 2              |
| 630  | 6/14/95  | 199000         | 2              |
| 630  | 4/10/96  | 400            | 2              |
| 630  | 8/5/97   | 490            | 2              |
| 630  | 8/19/97  | 5555.5         | 2              |
| 630  | 3/1/99   | 250            |                |
| 630  | 3/16/99  | 600            |                |

## Ratings

|             |    |
|-------------|----|
| Overall     | X  |
| Dry Weather | X  |
| Wet Weather | X  |
| Summer Dry  | X  |
| Summer Wet  | X  |
| Winter Dry  | X  |
| Winter Wet  | NA |
| Swimming    | NA |
| Season Dry  |    |
| Swimming    | NA |
| Season Wet  |    |

**B – Safe for Fishing and Swimming** - Supports Class B Standards, Geometric Mean 200 or less and not more than 10% of samples are above 400

**C – Safe for Indirect Contact Only** - Supports Class C Standards, Geometric Mean 1000 or less and not more than 10% of samples are above 2000

**D – Significant Pollution Impacts** - Does not meet Class C Standards, Geometric Mean is greater than 1000 or more than 10% of samples are above 2000

**F – Highly Polluted Waters** - More than 25% of samples are above 1000

**X – Extremely Polluted Waters** - More than 25% of samples are over 10,000

All fecal coliform results refer to the number of fecal coliform colonies per 100 ml of water

## Weather Rating:

**0 - No rain influence:** No rain within three days

**1 - Possible rain influence:** Less than .2" of rain within 12 hours, or more than 0.5" ending more than one day preceeding

**2 - Rain influence:** More than 0.25" of rain on the day of sampling or more than 0.5" within the preceeding day

## Overall summary stats

|             |                |                         |
|-------------|----------------|-------------------------|
| 8594.1      | Geometric Mean |                         |
| 34          | Count          |                         |
| 39999.9     | Median         | Supports Standards for: |
| 50.0        | Min            | Class B: FALSE          |
| 4264000.0   | Max            | Class C: FALSE          |
| % Frequency | Frequency      | Range                   |
| 35%         | 12             | 400 or less             |
| 3%          | 1              | 401 to 1,000            |
| 0%          | 0              | 1,001 to 2,000          |
| 6%          | 2              | 2,001 to 10,000         |
| 56%         | 19             | Greater than 10,000     |
| 100%        | 34             | Total Number of Samples |

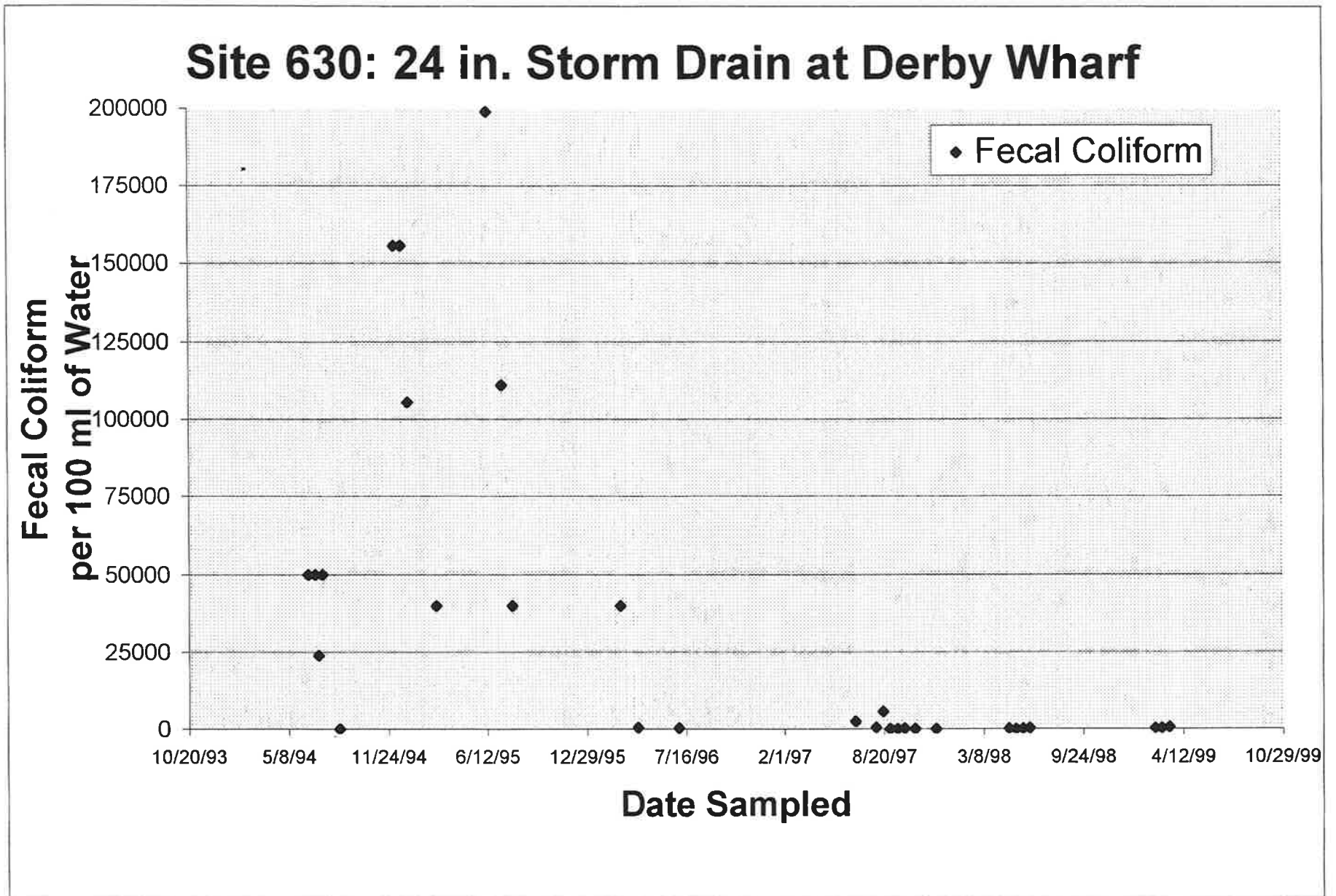
## Dry weather summary stats (weather ratings 0 and 1)

|             |                |                         |
|-------------|----------------|-------------------------|
| 8165.9      | Geometric Mean |                         |
| 28          | Count          |                         |
| 39999.9     | Median         | Supports Standards for: |
| 50.0        | Min            | Class B: FALSE          |
| 4264000.0   | Max            | Class C: FALSE          |
| % Frequency | Frequency      | Range                   |
| 39%         | 11             | 400 or less             |
| 0%          | 0              | 401 to 1,000            |
| 0%          | 0              | 1,001 to 2,000          |
| 4%          | 1              | 2,001 to 10,000         |
| 57%         | 16             | Greater than 10,000     |
| 100%        | 28             | Total Number of Samples |

## Wet weather summary stats (weather rating 2)

|             |                |                         |
|-------------|----------------|-------------------------|
| 10908.9     | Geometric Mean |                         |
| 6           | Count          |                         |
| 27777.7     | Median         | Supports Standards for: |
| 400.0       | Min            | Class B: FALSE          |
| 199000.0    | Max            | Class C: FALSE          |
| % Frequency | Frequency      | Range                   |
| 17%         | 1              | 400 or less             |
| 17%         | 1              | 401 to 1,000            |
| 0%          | 0              | 1,001 to 2,000          |
| 17%         | 1              | 2,001 to 10,000         |
| 50%         | 3              | Greater than 10,000     |
| 100%        | 6              | Total Number of Samples |

Note: Dramatically lower counts after the spring of 1996 as a result of disconnecting sewage flow from houses to drain system.



Summary of Salem Sound 2000 volunteer monitoring results for fecal coliform analysis.

Salem Sound 2000 Water Quality  
Monitoring Data  
Site # 671 : Derby Wharf Beach

✓ fecal coliform  
bacteria / 100 ml  
water

|      | A      | B            | C                     | D              | E                          | F         | G         | H            | I        | J                                  | K                    |
|------|--------|--------------|-----------------------|----------------|----------------------------|-----------|-----------|--------------|----------|------------------------------------|----------------------|
| 1    | Site # | Date Sampled | Fecal Coliform/100 ml | Weather Rating | Time Sampled               | Bottle #1 | Bottle #2 | Monitor Name | Lab      | QC/Notes                           | Precip Amnt/In       |
| 2519 | 671    | 6/3/97       | 169                   | 1              | 11:24                      | 16005     |           | Sokulsky     | DMF      |                                    | .01 since 6/2/97     |
| 2520 | 671    | 10/1/97      | <del>55.5</del>       | 1              | <del>50:00 AM, 12:00</del> | 15806     | 15203     | Ulitalo      | Endicott | field dup <100, <100               | .18 since 9/29/97    |
| 2521 | 671    | 10/22/97     | 600                   | 0              | 9:05                       | 15811     |           | Newman       | Endicott |                                    | 0                    |
| 2522 | 671    | 11/5/97      | 100                   | 0              | 8:50                       | 5007      |           | Newman       | Endicott |                                    | 0                    |
| 2523 | 671    | 12/3/97      | 55.5                  | 1              | 8:25                       | 50008     |           | Newman       | Endicott | 1.02 in snow/rain since 1          |                      |
| 2524 | 671    | 12/17/97     | 4                     | 0              | 11:15                      | 70344     |           | Newman       | DMF      |                                    | 0                    |
| 2525 | 671    | 3/11/98      | 1.5                   | 1              | 10:10                      | 70346     |           | Parr         | DMF      |                                    | 2.52 since 3/9/98    |
| 2526 | 671    | 3/25/98      | 5.5                   | 1              |                            | 70330     |           | Ulitalo      | Endicott |                                    | 1.06 since 3/22/98   |
| 2527 | 671    | 5/13/98      | 55.5                  | 1              | 9:45                       | 70334     |           | Parr         | Endicott | lab split - <100, <100 at Endicott | .74 in since 5/10/98 |
| 2528 | 671    | 5/27/98      | 55.5                  | 1              | 9:45                       | 70357     |           | Parr         | Endicott | lab split - <100, <100 at Endicott | .27 since 5/26/98    |
| 2529 | 671    | 6/10/98      | 55.5                  | 1              | 9:59                       | 80117     |           | Newman       | Endicott | half tide rising                   | .04 since 6/7/98     |

*Deerly  
Wharf*

| SALEM SOUND MARINE RESOURCES INVENTORY |                     |                  |                              |                        |                        |                 |                           |                              |                          |                             |                       |                          |                     |
|----------------------------------------|---------------------|------------------|------------------------------|------------------------|------------------------|-----------------|---------------------------|------------------------------|--------------------------|-----------------------------|-----------------------|--------------------------|---------------------|
| Citizen Water Quality Monitoring       |                     |                  |                              |                        |                        |                 |                           |                              |                          |                             |                       |                          |                     |
| Location                               | Date                | Time             | Tide Stage<br>(min +/- high) | Bottom<br>Depth<br>(m) | Secchi<br>Depth<br>(m) | Air temp<br>(C) | Water<br>Temp. (C)<br>Top | Water<br>Temp. (C)<br>Bottom | Salinity<br>(ppt)<br>Top | Salinity<br>(ppt)<br>Bottom | D.O.<br>(mg/l)<br>Top | D.O.<br>(mg/l)<br>Bottom | Notes               |
| Salem, NPS                             | 5/16/97             | 16:00            | -242                         | 3.5                    | 3.25                   |                 | 11.0                      | 9.0                          | 27.5                     | 30.5                        | 11.5                  | 12.5                     |                     |
| Salem, NPS                             | 5/22/97             | 15:50            | 219                          | 4.0                    |                        |                 | 10.0                      | 8.0                          | 29.5                     | 31.0                        | 10.2                  | 9.4                      |                     |
| Salem, NPS                             | 5/31/97             | 6:30             | -55                          | 2.5                    |                        | 14.0            | 15.0                      |                              | 29.0                     |                             | 8.0                   |                          |                     |
| Salem, NPS                             | 6/11/97             | 7:30             | 204                          | 2.5                    |                        | 22.0            | 16.0                      |                              | 28.5                     |                             | 7.6                   |                          |                     |
| Salem, NPS                             | 6/18/97             | 6:21             | -227                         | 2.0                    | 1.5                    | 12.0            | 11.0                      |                              | 34.5                     |                             | 8.5                   |                          |                     |
| Salem, NPS                             | 6/25/97             | 8:00             | 291                          | 1.0                    |                        | 22.0            | 17.0                      | 14.0                         | 28.5                     | 29.0                        | 7.8                   | 7.5                      |                     |
| Salem, NPS                             | 7/8/97              | 14:45            | 4                            | 3.5                    | 3.5                    | 27.0            | 18.4                      | 16.8                         | 29.9                     | 31.0                        | 8.2                   | 8.5                      |                     |
| Salem, NPS                             | 7/22/97             | 8:43             | -301                         | 0.75                   |                        | 20.0            | 17.1                      | 16.9                         | 28.6                     | 29.0                        | 5.3                   | 5.7                      |                     |
| Salem, NPS                             | 7/22/97             | 13:15            | -29                          | 6.2                    |                        | 22.0            | 19.5                      | 16.6                         | 31.0                     | 30.9                        | 8.5                   | 7.1                      | nutrient sampling   |
| Salem, NPS                             | 7/29/97             | 8:53             | 57                           | 3.5                    | 2.5                    | 22.0            | 19.6                      | 18.8                         | 30.0                     | 30.2                        | 5.6                   | 3.4                      |                     |
| Salem, NPS                             | 8/5/97              | 9:20             | -251                         | 5.0                    | 2.0                    |                 | 21.0                      | 19.0                         | 29.0                     | 29.6                        |                       |                          |                     |
| Salem, NPS                             | 8/12/97             | 10:40            | 267                          | 5.5                    | 3.5                    |                 | 18.3                      | 16.7                         | 30.8                     | 31.0                        | 5.0                   | 4.3                      |                     |
| Salem, NPS                             | 8/19/97             | 9:35             | -175                         | 6.0                    | 3.25                   |                 | 16.2                      | 16.1                         | 29.8                     | 30.3                        | 5.9                   | 5.3                      |                     |
| Salem, NPS                             | 8/26/97             | 9:06             | 153                          | 6.0                    | 2.75                   | 23.0            | 19.7                      | 15.5                         | 29.6                     | 30.5                        | 6.2                   | 5.2                      |                     |
| <del>Salem, NPS</del>                  | <del>8/27/97</del>  | <del>12:20</del> | <del>202</del>               |                        |                        | <del>23.5</del> | <del>20.0</del>           |                              | <del>30.5</del>          |                             | <del>7.9</del>        |                          |                     |
| Salem, NPS                             | 9/2/97              | 8:55             | -209                         | 2.0                    |                        | 21.0            | 20.7                      | 20.5                         | 28.9                     | 29.7                        | 5.0                   | 4.0                      |                     |
| <del>Salem, NPS</del>                  | <del>9/9/97</del>   | <del>13:15</del> | <del>229</del>               | <del>6.0</del>         |                        | <del>19.0</del> | <del>19.0</del>           | <del>16.4</del>              | <del>28.8</del>          | <del>28.0</del>             | <del>8.1</del>        | <del>4.9</del>           | nutrient sampling   |
| Salem, NPS                             | 9/16/97             | 8:45             | -150                         | 2.5                    |                        | 21.0            | 19.2                      | 18.8                         | 30.8                     | 30.7                        | 4.1                   | 3.6                      |                     |
| <del>Salem, NPS</del>                  | <del>9/24/97</del>  | <del>13:35</del> | <del>294</del>               | <del>4.4</del>         |                        | <del>14.0</del> | <del>14.1</del>           | <del>13.4</del>              | <del>29.2</del>          | <del>28.9</del>             | <del>7.9</del>        | <del>7.8</del>           | nutrient sampling   |
| <del>Salem, NPS</del>                  | <del>10/7/97</del>  | <del>12:00</del> | <del>223</del>               | <del>4.1</del>         |                        | <del>22.0</del> | <del>13.4</del>           | <del>12.6</del>              | <del>32.0</del>          | <del>31.5</del>             | <del>7.8</del>        | <del>7.6</del>           | nutrient sampling   |
| Salem, NPS                             | 10/15/97            | 12:20            | 89                           | 4.0                    | 3.5                    | 17.0            | 16.5                      | 15.0                         | 36.5                     | 37.0                        | 6.8                   | 7.6                      | refractometer for S |
| Salem, NPS                             | 10/22/97            | 8:45             | 244                          | 1.75                   |                        |                 | 13.4                      | 13.3                         | 34.3                     | 34.5                        | 6.5                   | 4.9                      |                     |
| <del>Salem, NPS</del>                  | <del>10/28/97</del> | <del>12:50</del> | <del>227</del>               | <del>4.1</del>         |                        | <del>8.0</del>  | <del>12.3</del>           | <del>11.0</del>              | <del>32.1</del>          | <del>32.3</del>             | <del>7.3</del>        | <del>7.3</del>           | nutrient sampling   |
| Salem, NPS                             | 11/12/97            | 8:50             | 11                           | 3.75                   | 3.5                    | 2.0             | 9.8                       | 10.9                         | 29.3                     | 30.2                        | 6.0                   | 7.9                      |                     |

Derby  
Wharf

| Citizen Water Quality Monitoring |          |       |                              |                        |                        |                 |                           |                              |                          |                             |                       |                          |                                   |
|----------------------------------|----------|-------|------------------------------|------------------------|------------------------|-----------------|---------------------------|------------------------------|--------------------------|-----------------------------|-----------------------|--------------------------|-----------------------------------|
| Location                         | Date     | Time  | Tide Stage<br>(min +/- high) | Bottom<br>Depth<br>(m) | Secchi<br>Depth<br>(m) | Air temp<br>(C) | Water<br>Temp. (C)<br>Top | Water<br>Temp. (C)<br>Bottom | Salinity<br>(ppt)<br>Top | Salinity<br>(ppt)<br>Bottom | D.O.<br>(mg/l)<br>Top | D.O.<br>(mg/l)<br>Bottom | Notes                             |
| Salem, NPS                       | 6/10/98  | 9:18  |                              | 5.0                    | 4.0                    |                 | 16.1                      | 12.7                         | 26.9                     | 28.0                        | 8.1                   | 8.0                      |                                   |
| Salem, NPS                       | 6/17/98  | 9:50  |                              | 4.3                    | 2.5                    |                 | 16.8                      | 13.2                         | 12.3                     | 27.2                        | 3.8                   | 3.7                      |                                   |
| Salem, NPS                       | 6/25/98  | 12:10 |                              | 7.0                    | 2.5                    |                 | 18.8                      | 11.9                         | 23.6                     | 27.1                        | 5.4                   | 5.5                      | boat activity                     |
| Salem, NPS                       | 7/2/98   | 8:00  |                              | 6.0                    | 3.0                    |                 | 17.3                      | 13.1                         | 25.3                     | 26.7                        | 6.4                   | 5.3                      | calm water                        |
| Salem, NPS                       | 7/9/98   | 9:15  |                              | 5.5                    | 2.0                    | 21.0            | 21.4                      | 17.0                         | 24.6                     | 23.2                        | 8.1                   | 6.5                      |                                   |
| Salem, NPS                       | 7/15/98  | 9:00  |                              | 4.0                    | 2.1                    |                 | 19.2                      | 13.2                         | 23.7                     | 26.6                        | 6.8                   | 5.6                      |                                   |
| Salem, NPS                       | 7/22/98  | 8:50  |                              | 6.0                    | 2.5                    | 27.0            | 16.7                      | 12.8                         | 26.4                     | 26.2                        | 6.8                   | 3.8                      | no rain in past 5 days            |
| Salem, NPS                       | 7/29/98  | 8:45  |                              | 4.2                    | 2.1                    | 27.0            | 19.2                      | 14.3                         | 25.1                     | 23.6                        | 4.8                   | 0.0                      |                                   |
| Salem, NPS                       | 8/3/98   | 10:00 |                              | 3.0                    | 3.0                    | 20.5            | 19.0                      | 15.0                         | 27.3                     | 24.2                        | 7.1                   | 5.0                      |                                   |
| Salem, NPS                       | 9/29/98  | 9:09  |                              | 5.0                    | 4.0                    | 17.0            | 15.0                      | 13.5                         | 30.0                     | 32.0                        | 7.9                   | 6.9                      |                                   |
| Salem, NPS                       | 10/7/98  | 8:24  |                              | 4.3                    | 3.5                    | 5.5             | 12.0                      | 11.5                         | 30.0                     |                             | 10.4                  | 10.4                     | freshwater pipe leaking into harb |
| Salem, NPS                       | 10/20/98 | 8:58  |                              | 5.5                    | 4.0                    | 17.0            | 12.5                      | 13.0                         | 29.0                     | 31.0                        | 8.8                   | 8.7                      |                                   |