12101104 WHITE RIVER ABOVE TACOMA AVENUE BRIDGE AT SUMNER, WA
WATER-QUALITY RECORDS
LOCATION.--Lat $47^{\circ} 13^{\prime} 01.9^{\prime \prime}$, long $122^{\circ} 1^{\prime} 08.5^{\prime \prime}$, in $\mathrm{SW}^{1 / /_{4}} \mathrm{SE}^{1 /{ }^{1} 4} \mathrm{sec}^{\prime} 13, \mathrm{~T} .20 \mathrm{~N} ., \mathrm{R} .4$ E., Pierce County, Hydrologic Unit 17110014, on left bank, 0.1 mile upstream from Tacoma Avenue Bridge in Sumner, and at mile 1.8 .

DRAINAGE AREA. $--470 \mathrm{mi}^{2}$, approximately.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 2001 to September 2002 (seasonal records).
pH: August 2001 to September 2002 (seasonal records).
WATER TEMPERATURE: August 2001 to September 2002 (seasonal records).
DISSOLVED OXYGEN: August 2001 to September 2002 (seasonal records).
INSTRUMENTATION.--Water-quality monitor since August 2001. Electronic data logger with 30-minute logging interval.
REMARKS.--Interruption in record due to routine instrument service and to instrument failures. Specific conductance records excellent, except for Aug. 21-30, which are good. pH records excellent, except for Sept. 19-23, which are good. Water temperature records excellent. Dissolved oxygen records good Aug. 17 to Sept. 30; fair Aug. 3-9 and Aug. 13; and poor Aug. 10-12 and Aug. 14-16.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, $98 \mathrm{uS} / \mathrm{cm}$ on Sept. 30, 2001; minimum recorded, $50 \mathrm{uS} / \mathrm{cm}$ on Aug. 30, 2002 .
pH : Maximum recorded, 8.3 on Sept. 28, 2002; minimum recorded, 6.7 on Sept. 4-6, 2002 .
WATER TEMPERATURE: Maximum recorded, $20.4^{\circ} \mathrm{C}$ on Aug. 10, 2001 ; minimum recorded, $9.7^{\circ} \mathrm{C}$ on Sept. 28 , 2001.
DISSOLVED OXYGEN: Maximum recorded, $11.4 \mathrm{mg} / \mathrm{L}$ Sept. 21, 2002; minimum recorded $7.9 \mathrm{mg} / \mathrm{L}$ Aug. 12 , 2001 and Sept. 3, 2002 .
EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, $90 \mathrm{uS} / \mathrm{cm}$ on Sept. 30; minimum recorded, $50 \mathrm{uS} / \mathrm{cm}$ on Aug. 30 .
pH : Maximum recorded, 8.3 on Sept. 28; minimum recorded, 6.7 on Sept. 4-6.
WATER TEMPERATURE: Maximum recorded, $19.6^{\circ} \mathrm{C}$ on Aug. 13, but may have been higher during periods of missing record; minimum recorded, $9.9^{\circ} \mathrm{C}$ on Sept. 22.
DISSOLVED OXYGEN: Maximum recorded, $11.4 \mathrm{mg} / \mathrm{L}$ Sept. 21 ; minimum recorded, $7.9 \mathrm{mg} / \mathrm{L}$ Sept. 3 .
SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), AUGUST TO SEPTEMBER 2002

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AUGUST |  |  | SEPTEMBER |  |  |
| 1 | --- | --- | --- | 71 | 69 | 70 |
| 2 | --- | -- | --- | 70 | 55 | 62 |
| 3 | 70 | 52 | 59 | 67 | 52 | 59 |
| 4 | 61 | 60 | 60 | 74 | 53 | 61 |
| 5 | 66 | 60 | 63 | 76 | 53 | 63 |
| 6 | 68 | 63 | 66 | 78 | 55 | 65 |
| 7 | --- | --- | --- | 80 | 78 | 79 |
| 8 | --- | -- | -- | 82 | 55 | 70 |
| 9 | 68 | 64 | 66 | 85 | 82 | 83 |
| 10 | 65 | 60 | 63 | 86 | 82 | 84 |
| 11 | 62 | 58 | 60 | 85 | 57 | 71 |
| 12 | 62 | 59 | 61 | 81 | 56 | 73 |
| 13 | 62 | 57 | 60 | 80 | 75 | 77 |
| 14 | 58 | 55 | 57 | 79 | 74 | 77 |
| 15 | 57 | 53 | 55 | 78 | 74 | 76 |
| 16 | 58 | 56 | 57 | 77 | 56 | 70 |
| 17 | 60 | 58 | 59 | 77 | 56 | 66 |
| 18 | 62 | 59 | 61 | --- | -- | --- |
| 19 | 64 | 61 | 63 | --- | -- | --- |
| 20 | 66 | 62 | 64 | 88 | 80 | 82 |
| 21 | 68 | 63 | 66 | 86 | 79 | 81 |
| 22 | 69 | 65 | 68 | 88 | 61 | 74 |
| 23 | 68 | 65 | 67 | 89 | 60 | 81 |
| 24 | 66 | 63 | 65 | 87 | 82 | 84 |
| 25 | 71 | 64 | 66 | 89 | 83 | 84 |
| 26 | 78 | 62 | 70 | 89 | 60 | 73 |
| 27 | 77 | 55 | 62 | 88 | 63 | 85 |
| 28 | 74 | 53 | 63 | 89 | 84 | 85 |
| 29 | 69 | 51 | 59 | 89 | 61 | 73 |
| 30 | 67 | 50 | 58 | 90 | 56 | 66 |
| 31 | 71 | 66 | 68 | --- | - | -- |
| MONTH | 78 | 50 | 62 | 90 | 52 | 74 |
| YEAR | 90 | 50 | 68 |  |  |  |

12101104 WHITE RIVER ABOVE TACOMA AVENUE BRIDGE AT SUMNER, WA--Continued
PH, WATER, WHOLE, FIELD, STANDARD UNITS, AUGUST TO SEPTEMBER 2002

| DAY | MAX | MIN | MEDIAN | MAX | MIN M | MEDIAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AUGUST |  |  |  | SEPTEMBER |  |
| 1 | -- | --- | -- | 7.1 | 7.0 | 7.0 |
| 2 | --- | --- | --- | 7.0 | 6.9 | 7.0 |
| 3 | 7.3 | 7.1 | 7.2 | 7.0 | 6.8 | 7.0 |
| 4 | 7.3 | 7.2 | 7.3 | 7.0 | 6.7 | 7.0 |
| 5 | 7.3 | 7.2 | 7.2 | 6.9 | 6.7 | 6.8 |
| 6 | 7.4 | 7.2 | 7.3 | 6.9 | 6.7 | 6.8 |
| 7 | --- | --- | --- | 7.1 | 6.9 | 7.0 |
| 8 | - | - | --- | 7.0 | 6.8 | 6.9 |
| 9 | 7.3 | 7.0 | 7.1 | 7.5 | 6.9 | 7.1 |
| 10 | 7.1 | 7.0 | 7.0 | 7.8 | 7.0 | 7.1 |
| 11 | 7.1 | 7.0 | 7.0 | 7.2 | 6.9 | 7.0 |
| 12 | 7.1 | 7.0 | 7.0 | 7.4 | 6.9 | 7.0 |
| 13 | 7.1 | 7.0 | 7.0 | 8.1 | 7.0 | 7.1 |
| 14 | 7.0 | 7.0 | 7.0 | 8.0 | 7.0 | 7.1 |
| 15 | 7.0 | 7.0 | 7.0 | 7.4 | 7.0 | 7.1 |
| 16 | 7.1 | 7.0 | 7.1 | 7.3 | 6.9 | 7.0 |
| 17 | 7.1 | 7.0 | 7.1 | 7.1 | 6.8 | 7.0 |
| 18 | 7.1 | 7.0 | 7.1 | --- | --- | --- |
| 19 | 7.1 | 7.0 | 7.1 | --- | --- | --- |
| 20 | 7.2 | 7.1 | 7.1 | 8.2 | 7.2 | 7.3 |
| 21 | 7.2 | 7.1 | 7.1 | 7.9 | 7.2 | 7.3 |
| 22 | 7.2 | 7.1 | 7.1 | 7.2 | 7.0 | 7.2 |
| 23 | 7.2 | 7.1 | 7.1 | 7.8 | 6.8 | 7.2 |
| 24 | 7.2 | 7.1 | 7.1 | 8.0 | 6.9 | 7.0 |
| 25 | 7.2 | 6.9 | 7.1 | 8.1 | 6.9 | 7.0 |
| 26 | 7.0 | 6.8 | 7.0 | 7.1 | 6.8 | 6.9 |
| 27 | 7.0 | 6.8 | 6.8 | 8.1 | 6.8 | 7.0 |
| 28 | 7.0 | 6.8 | 6.9 | 8.3 | 6.9 | 7.1 |
| 29 | 7.0 | 6.8 | 6.9 | 7.2 | 6.8 | 7.0 |
| 30 | 7.0 | 6.8 | 6.9 | 7.1 | 6.8 | 6.9 |
| 31 | 7.1 | 7.0 | 7.0 | --- | --- | - |
| MAX | 7.4 | 7.2 | 7.3 | 8.3 | 7.2 | 7.3 |
| MIN | 7.0 | 6.8 | 6.8 | 6.9 | 6.7 | 6.8 |
| YEAR | MAX |  |  | MAXIMUM 8.3 | MINIMUM | 6.9 |
|  | MIN |  |  | MAXIMUM 7.2 | MINIMUM | 6.7 |
|  | MEDIAN |  |  | MAXIMUM 7.3 | MINIMUM | 1.8 |

TEMPERATURE, WATER (DEG. C), AUGUST TO SEPTEMBER 2002

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AUGUST |  |  | SEPTEMB |  |
| 1 | --- | --- | --- | 16.8 | 13.9 | 15.1 |
| 2 | --- | --- | --- | 16.8 | 12.8 | 15.3 |
| 3 | 16.7 | 12.1 | 14.0 | 17.3 | 13.4 | 15.8 |
| 4 | 15.2 | 13.0 | 13.9 | 16.8 | 11.6 | 14.6 |
| 5 | 15.6 | 11.9 | 13.5 | 16.7 | 10.9 | 14.5 |
| 6 | 15.4 | 12.7 | 13.7 | 16.6 | 11.5 | 14.7 |
| 7 | --- | --- | --- | 15.2 | 12.2 | 13.7 |
| 8 | --- | --- | --- | 15.7 | 11.1 | 13.7 |
| 9 | 18.8 | 13.7 | 16.0 | 16.8 | 12.1 | 14.2 |
| 10 | 16.8 | 14.5 | 15.9 | 17.5 | 13.3 | 15.4 |
| 11 | 18.0 | 13.5 | 15.5 | 16.9 | 13.4 | 15.5 |
| 12 | 18.8 | 14.0 | 16.1 | 17.4 | 13.6 | 15.6 |
| 13 | 19.6 | 15.1 | 17.1 | 17.9 | 13.5 | 15.8 |
| 14 | 18.9 | 15.6 | 17.0 | 17.8 | 13.6 | 15.8 |
| 15 | 18.1 | 15.0 | 16.4 | 16.7 | 14.0 | 14.9 |
| 16 | 17.9 | 15.0 | 16.1 | 16.3 | 13.0 | 14.5 |
| 17 | 17.8 | 13.8 | 15.6 | 16.6 | 12.5 | 14.7 |
| 18 | 16.8 | 13.3 | 14.9 | --- | --- | --- |
| 19 | 15.7 | 13.1 | 14.3 | --- | --- | --- |
| 20 | 15.0 | 13.6 | 14.5 | 15.3 | 12.2 | 13.8 |
| 21 | 15.0 | 12.2 | 13.3 | 13.9 | 10.2 | 12.2 |
| 22 | 17.2 | 12.3 | 14.4 | 15.6 | 9.9 | 13.2 |
| 23 | 18.3 | 13.8 | 15.7 | 15.8 | 10.6 | 12.9 |
| 24 | 17.9 | 14.6 | 16.0 | 15.3 | 11.4 | 13.4 |
| 25 | 16.0 | 14.9 | 15.2 | 15.2 | 11.4 | 13.3 |
| 26 | 17.1 | 13.5 | 15.2 | 15.6 | 11.3 | 13.7 |
| 27 | 18.0 | 13.9 | 16.6 | 15.2 | 11.0 | 12.7 |
| 28 | 19.1 | 14.8 | 17.5 | 14.4 | 10.7 | 12.5 |
| 29 | 18.9 | 15.2 | 17.4 | 15.5 | 11.9 | 13.9 |
| 30 | 18.5 | 16.0 | 17.2 | 15.0 | 10.8 | 13.8 |
| 31 | 17.4 | 12.8 | 15.2 | --- | --- | --- |
| MONTH | 19.6 | 11.9 | 15.5 | 17.9 | 9.9 | 14.3 |
| YEAR | 19.6 | 9.9 | 14.9 |  |  |  |

12101104 WHITE RIVER ABOVE TACOMA AVENUE BRIDGE AT SUMNER, WA--Continued

| OXYGEN DISSOLVED (MG/L), AUGUST TO SEPTEMBER 2002 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN |
|  | AUGUST |  |  | SEPTEMBER |  |  |
| 1 |  | --- | --- | 9.7 | 8.8 | 9.3 |
| 2 | --- | --- | --- | 9.8 | 8.3 | 9.0 |
| 3 | 11.1 | 9.7 | 10.6 | 9.5 | 7.9 | 8.6 |
| 4 | 10.8 | 10.5 | 10.7 | 10.2 | 8.5 | 9.1 |
| 5 | 11.3 | 10.2 | 10.8 | 10.6 | 8.5 | 9.3 |
| 6 | 10.9 | 10.2 | 10.6 | 10.4 | 8.5 | 9.2 |
| 7 | --- | --- | --- | 10.3 | 9.2 | 9.8 |
| 8 | --- | --- | --- | 10.6 | 8.7 | 9.5 |
| 9 | 10.0 | 9.1 | 9.5 | 10.3 | 8.9 | 9.8 |
| 10 | 9.8 | 9.3 | 9.5 | 10.1 | 8.7 | 9.4 |
| 11 | 10.0 | 9.1 | 9.6 | 10.2 | 8.3 | 9.1 |
| 12 | 9.8 | 9.0 | 9.5 | 10.0 | 8.4 | 9.2 |
| 13 | 9.7 | 8.9 | 9.3 | 10.0 | 8.6 | 9.3 |
| 14 | 9.6 | 8.9 | 9.3 | 10.1 | 8.8 | 9.5 |
| 15 | 9.8 | 9.2 | 9.5 | 10.1 | 9.0 | 9.6 |
| 16 | 9.8 | 9.3 | 9.6 | 10.3 | 8.7 | 9.6 |
| 17 | 10.0 | 9.1 | 9.7 | 10.4 | 8.7 | 9.3 |
| 18 | 10.2 | 9.3 | 9.7 | --- | --- | --- |
| 19 | 10.1 | 9.3 | 9.7 | --- | --- | --- |
| 20 | 9.6 | 9.4 | 9.5 | 10.8 | 9.5 | 10.1 |
| 21 | 10.3 | 9.6 | 9.9 | 11.4 | 9.6 | 10.5 |
| 22 | 10.2 | 9.0 | 9.7 | 11.1 | 8.9 | 9.8 |
| 23 | 9.8 | 8.8 | 9.4 | 10.8 | 8.5 | 9.9 |
| 24 | 9.6 | 8.8 | 9.2 | 10.5 | 8.9 | 9.7 |
| 25 | 9.4 | 9.0 | 9.3 | 10.5 | 8.9 | 9.7 |
| 26 | 9.8 | 8.9 | 9.3 | 10.4 | 8.3 | 9.0 |
| 27 | 10.1 | 8.5 | 9.1 | 10.7 | 8.3 | 9.7 |
| 28 | 9.8 | 8.6 | 9.0 | 11.0 | 9.2 | 10.1 |
| 29 | 9.6 | 8.3 | 8.8 | 9.7 | 8.7 | 9.2 |
| 30 | 9.2 | 8.2 | 8.8 | 9.8 | 8.6 | 9.2 |
| 31 | 10.0 | 8.8 | 9.4 | --- | --- | --- |
| MONTH | 11.3 | 8.2 | 9.6 | 11.4 | 7.9 | 9.5 |
| YEAR | 11.4 | 7.9 | 9.5 |  |  |  |

