This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.015 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

| | | | | |
|---|---|---|---|---|
| 1. | Facility Name and Mailing Address: | John J. Wright Educational & Cultural Center<br>8020 River Stone Drive<br>Fredericksburg, VA 22407 | SIC Code : | 4952 WWTP |
| | Facility Location: | 7565 Courthouse Road<br>Spotsylvania, VA 22553 | County: | Spotsylvania |
| | Facility Contact Name:<br>Facility Title: | Doug Crooks<br>Division Director WWTP | Telephone Number: | 540-507-7362 |
| | Facility E-mail Address: | dcrooks@spotsylvania.va.us | | |
| 2. | Permit No.: | VA0061298 | Expiration Date of previous permit: | June 4, 2012 |
| | Other VPDES Permits associated with this facility: | | N/A | |
| | Other Permits associated with this facility: | | N/A | |
| | E2/E3/E4 Status: | N/A | | |
| 3. | Owner Name: | Spotsylvania County School Board | | |
| | Owner Contact/Title: | S. Scott Baker, Superintendent | Telephone Number: | 540-834-2500 |
| | Owner E-mail Address: | sbaker@scs.k.12.va.us | | |
| 4. | Application Complete Date: | December 21, 2011 | | |
| | Permit Drafted By: | Joan C. Crowther | Date Drafted: | September 7, 2012 |
| | Draft Permit Reviewed By: | Alison Thompson | Date Reviewed: | September 12, 2012 |
| | WPM Review By: | Bryant Thomas | Date Reviewed: | N/A |
| | Public Comment Period : | Start Date: September 28, 2012 | End Date: | October 29, 2012 |

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

| | | | |
|---|---|---|---|
| Receiving Stream Name : | Po River, UT | Stream Code: | 8-XDO |
| Drainage Area at Outfall: | 0.05 sq.mi. | River Mile: | 0.13 |
| Stream Basin: | York River | Subbasin: | None |
| Section: | 3 | Stream Class: | III |
| Special Standards: | None | Waterbody ID: | VAN-F16R |
| 7Q10 Low Flow: | 0.0 MGD | 7Q10 High Flow: | 0.0 MGD |
| 1Q10 Low Flow: | 0.0 MGD | 1Q10 High Flow: | 0.0 MGD |
| 30Q10 Low Flow: | 0.0 MGD | 30Q10 High Flow: | 0.0 MGD |
| Harmonic Mean Flow: | 0.0 MGD | 30Q5 Flow: | 0.0 MGD |

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

| | | | |
|---|---|---|---|
| ✓ | State Water Control Law | ___ | EPA Guidelines |
| ✓ | Clean Water Act | ✓ | Water Quality Standards |
| ✓ | VPDES Permit Regulation | ___ | Other |
| ✓ | EPA NPDES Regulation | | |

7. Licensed Operator Requirements: Class III
8. Reliability Class: Class II
9. Permit Characterization:

| | | | | | |
|---|---|---|---|---|---|
| ___ | Private | ___ | Effluent Limited | ___ | Possible Interstate Effect |
| ___ | Federal | ✓ | Water Quality Limited | ___ | Compliance Schedule Required |
| ___ | State | ___ | Toxics Monitoring Program Required | ___ | Interim Limits in Permit |
| ✓ | POTW | ___ | Pretreatment Program Required | ___ | Interim Limits in Other Document |
| ___ | TMDL | | | | |

**10. Wastewater Sources and Treatment Description:**

John J. Wright Educational and Cultural Center houses Middle and High School Alternative Education programs, the Virginia Preschool Initiative, Head Start, Gateway Academy, GATES/GED, the Parent Resource Center and the John J. Wright Museum.

The wastewater treatment plant consists of a grease trap, one septic tank, bar screen, aeration basin, secondary clarifier, chlorination (soda ash is added here every few days for pH control), dechlorination, and post aeration.

Because this facility treats the wastewater from a school, the discharge has been determined to be a periodic discharge. A "periodic discharge" is one that happens regularly, but is not continuous all year.

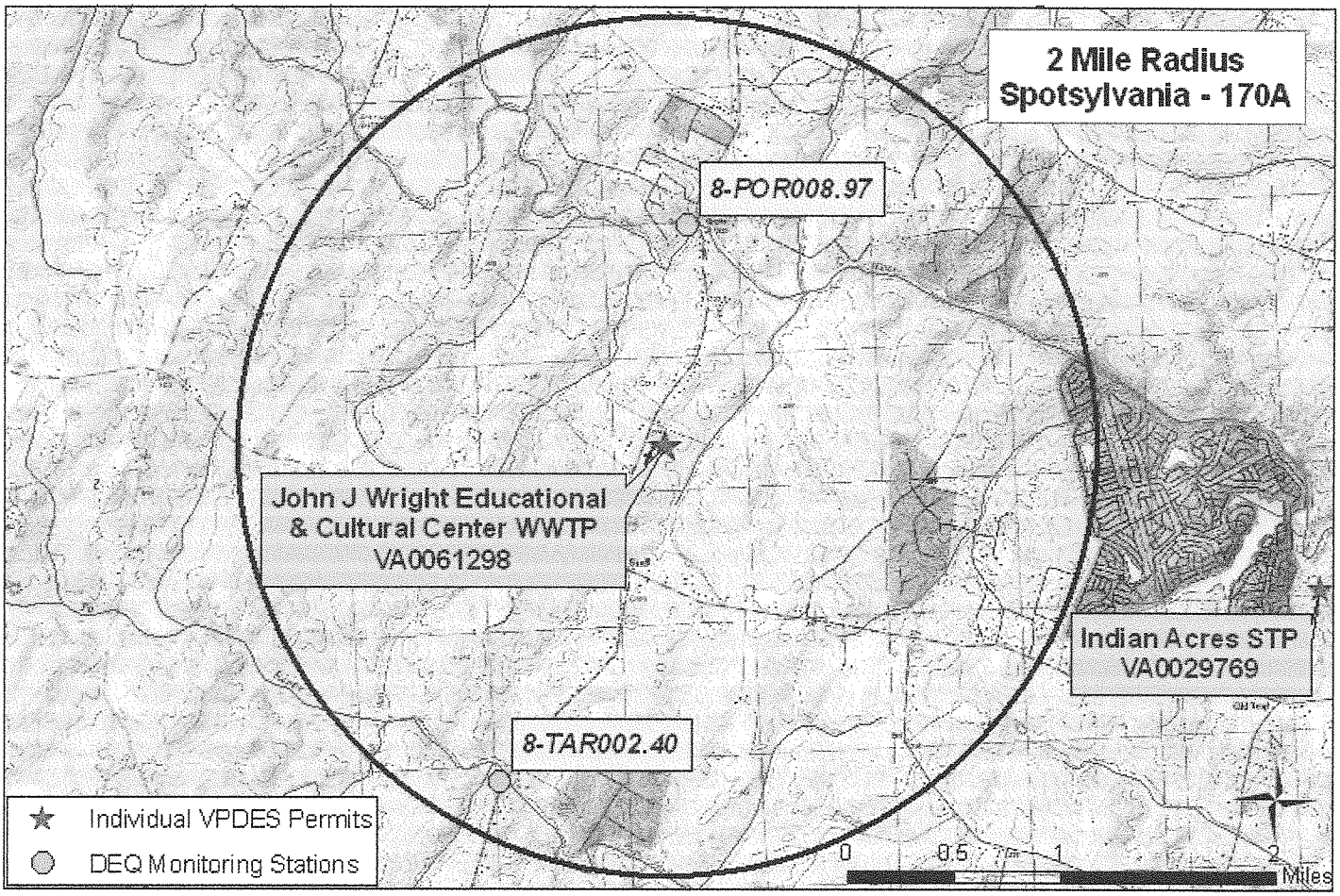
See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description

| Outfall Number | Discharge Sources | Treatment | Design Flow(s) | Outfall Latitude and Longitude |
|---|---|---|---|---|
| 001 | Domestic Wastewater | See Item 10 above. | 0.015 MGD | 38°09'23" N<br>77°35'51" W |

The rest of this page is intentionally left blank.

USGS Topographic Map name – Spotsylvania, DEQ Quad # 170A




**11. Sludge Treatment and Disposal Methods:**

The waste activated sludge is trucked to the Spotsylvania County's Massaponax Wastewater Treatment Plant (VA0025658) for final processing.

**12. DEQ Monitoring Stations in Vicinity of Discharge:**

TABLE 2
DEQ Ambient Water Quality Monitoring Station within 2 mile radius of John J Wright ECC

| DEQ AWQM Station No. | Description |
|---|---|
| 8-POR008.97 | Located on the Po River at the Route 208 Bridge crossing, approximately 0.7 miles upstream of the unnamed tributary with the Po River. |
| 8-TAR002.40 | Located on the Ta River at the Route 738 (Partlow Road) Bridge crossing. This ambient station is located on a separate stream that is not associated with the outfall but is located within the 2-mile radius of the outfall. |

**13. Material Storage:**

| TABLE 3 - Material Storage | | |
|---|---|---|
| Materials Description | Volume Stored | Spill/Stormwater Prevention Measures |
| Chlorination Tablets | 1 – 5 gallon bucket | Inside locked storage building within fenced area. |
| Dechlorination Tablets | 1 – 5 gallon bucket | Inside locked storage building within fenced area. |
| Soda Ash | 1 – 30 gal. trash can | Inside locked storage building within fenced area. |

**14. Site Inspection:**

Performed by Ms. Wilamena Harback on May 15, 2008. (See Attachment 3).

**15. Receiving Stream Water Quality and Water Quality Standards:**

a) Ambient Water Quality Data

This facility discharges into an unnamed tributary to Po River. There is water quality information for the segment of the Po River where this unnamed tributary joins it. DEQ monitoring station 8-POR008.97 is located at the Route 208 Bridge crossing, approximately 0.7 miles upstream from the confluence of the unnamed tributary with the Po River. The following is the water quality summary for this segment of the Po River, as taken from the Draft 2012 Integrated Assessment*:

> The aquatic life, recreation, and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

The nearest downstream DEQ monitoring station is 8-POR004.13 on the Po River, located at the Rt. 1 Bridge crossing, approximately 5.4 miles downstream of Outfall 001. The following is the water quality summary for this segment of the Po River, as taken from the Draft 2012 Integrated Assessment*:

> *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The aquatic life and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

| *Impairment Information in the Draft 2012 Integrated Report** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Waterbody Name** | **Impaired Use** | **Cause** | **Distance From Outfall** | **TMDL completed** | **WLA** | **Basis for WLA** | **TMDL Schedule** |
| Po River | Recreation | *E. coli* | 2.7 miles | No | --- | --- | 2022 |

**The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

The full planning statement dated June 27, 2012 is found in Attachment 4.

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream unnamed tributary to the Po River is located within Section 3 of the York River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The Freshwater Water Quality Criteria/Wasteload Allocation Analysis dated September 6, 2012 (Attachment 5) details water quality criteria applicable to the receiving stream. The 90th percentile pH and temperature data January 2009 to July 2012 used to establish the applicable water quality criteria for the receiving stream can be found in Attachment 6.

Ammonia:
The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. Because this discharge is "periodic" only the acute criteria applies to this discharge.

Staff has re-evaluated the effluent data for pH and temperature and finds that there was no significant difference in the pH and temperature data from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. For this permit reissuance, effluent pH and temperature from January 2009 to July 2012 was reviewed. The 90th percentile value for pH and temperature was 8.1 SU and 22.5°C, respectively. The resulting ammonia water quality criteria using these pH and temperature values are 6.95 mg/L for acute and 1.25 mg/L for chronic.

The previous two permit reissuances used 90th percentile pH value of 8.1 SU and 90th percentile temperature value of 22°C to calculation the ammonia criteria. The resulting acute ammonia water quality criteria using these values was 4.5 mg/L. This effluent pH and temperature data can be found in Attachment 7.

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). There is no hardness data for this facility. Staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 5 are based on this default value.

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Po River, UT, is located within Section 3 of the York River Basin. There are no special standards designed for this section.

e) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on September 6, 2012 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The Dwarf Wedgemussel, a freshwater mussel, was identified within a 2-mile radius of the discharge point. This species is listed as a federal and state endangered species. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards; therefore, protective of threatened and endangered species. See Attachment 8.

## 16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water

bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1. The critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier 1. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

**17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:**

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:
Effluent data obtained from DMR for the period of January 2007 through July 2012 has been reviewed and determined to be suitable for evaluation. There have been no exceedances of the established limitations during this time period.

The following pollutants require a wasteload allocation analysis: Total Residual Chlorine and Ammonia as N.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o[Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- $C_o$ = In-stream water quality criteria
- $Q_e$ = Design flow
- f = Decimal fraction of critical flow from mixing evaluation
- $Q_s$ = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- $C_s$ = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the $C_o$.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff reevaluated pH and temperature (January 2009- July 2012 data) and has concluded that the pH and temperature data was not significantly different than what was used previously to derive ammonia criteria. However, because of changes to the Ammonia Virginia Water Quality Standards since the 2002 ammonia effluent limitations, the resulting ammonia water quality acute criteria using this data was 6.95 mg/L which is less stringent than what was previously calculated and used in the past two permit reissuances. Documentation for ammonia analysis can be found in Attachment 9.

Because the facility was designed to meet an ammonia effluent limitation of 1.1 mg/L (See Attachment 10 – Plans and Specifications approval dated April 29, 1999), has had no ammonia effluent limit violations in the past 5 years of data review, and there is no basis for backsliding the ammonia limitations, the existing ammonia effluent limitation of 4.5 mg/L that was established in the 2002 permit reissuance will be carried forward for this permit reissuance. Documentation supporting this ammonia effluent limitation can be found in Attachment 11.

2) Total Residual Chlorine:

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.009 mg/L and a weekly average limit of 0.011 mg/L are proposed for this discharge (see Attachment 12).

3) Metals/Organics:

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day ($BOD_5$), total suspended solids (TSS), ammonia, and pH limitations are proposed.

Dissolved Oxygen and $BOD_5$ limitations are based on the stream modeling conducted in January 28, 1977, (Attachment 13) and are set to meet the water quality criteria for D.O. in the receiving stream. .

It is staff's practice to equate the Total Suspended Solids limits with the $BOD_5$ limits. TSS limits are established to equal $BOD_5$ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, $BOD_5$, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, and Total Residual Chlorine.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

**18. Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

**19. Effluent Limitations/Monitoring Requirements:**

Design flow is 0.015 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

| PARAMETER | BASIS FOR LIMITS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|---|
| | | Monthly Average | Weekly Average | Minimum | Maximum | Frequency | Sample Type |
| Flow (MGD) | NA | NL | NA | NA | NL | 1/D | Estimate |
| pH | 3 | NA | NA | 6.0 S.U. | 9.0 S.U. | 1/D | Grab |
| $BOD_5$ | 3, 5 | 24 mg/L 1.4 kg/day | 36 mg/L 2.0 kg/day | NA | NA | 1/M | Grab |
| Total Suspended Solids (TSS) | 2 | 24 mg/L 1.4 kg/day | 36 mg/L 2.0 kg/day | NA | NA | 1/M | Grab |
| Dissolved Oxygen (DO) | 3, 5 | NA | NA | 6.0 mg/L | NA | 1/D | Grab |
| Ammonia, as N | 3, 5 | 4.5 mg/L | 4.5 mg/L | NA | NA | 1/M | Grab |
| Total Residual Chlorine (after contact tank) | 2, 3, 4 | NA | NA | 1.0 mg/L | NA | 1/D | Grab |
| Total Residual Chlorine (after dechlorination) | 3 | 0.009 mg/L | 0.011 mg/L | NA | NA | 1/D | Grab |

The basis for the limitations codes are:
1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 13.

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

1/D = Once every day.
1/M = Once every month.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.
Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

**20. Other Permit Requirements:**

a) Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.
These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

**21. Other Special Conditions:**

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

c) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

d) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

e) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a Reliability Class of II.

f) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

g) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

h) TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

**22. Changes to the Permit from the Previously Issued Permit:**

a) Special Conditions:
1) Indirect Dischargers Special Condition was removed since this facility serves only a school. There is no other wastewater source.

b) Monitoring and Effluent Limitations: None

**23. Variances/Alternate Limits or Conditions:**

There are no variances/alternate limits or conditions contained in this permit.

**24. Public Notice Information:**

First Public Notice Date: September 28, 2012 Second Public Notice Date: October 5, 2012

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 14 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

**25. Additional Comments:**
Previous Board Action(s): None

Staff Comments: None

Public Comment: No comments were received.

EPA Checklist: The checklist can be found in Attachment 15.

VA0061298 John J. Wright Educational & Cultural Center Wastewater Treatment Plant
Fact Sheet Attachments

| Attachment | Description |
|---|---|
| 1 | Flow Frequency Determination Memo dated February 5, 2002 |
| 2 | Facility Schematic/Diagram |
| 3 | Site Inspection by DEQ Compliance Staff on May 15, 2008 |
| 4 | DEQ Planning Statement dated June 27, 2012 |
| 5 | Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated September 6, 2012 |
| 6 | pH and Temperature data January 2009 – July 2012 |
| 7 | pH and Temperature data January 1999 – January 2002 |
| 8 | DGIF Threatened and Endangered Species Database Search dated September 6, 2012 |
| 9 | 2012 Ammonia Analysis |
| 10 | Plans and Specifications Approval April 29, 1999 |
| 11 | 2002 Ammonia Analysis |
| 12 | Total Residual Chlorine Analysis |
| 13 | January 28, 1977 Stream Model |
| 14 | Public Notice |
| 15 | EPA Checklist dated September 7, 2012 |

# MEMORANDUM

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION**
**Water Quality Assessments and Planning**
**629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240**

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**SUBJECT:** Flow Frequency Determination
John J. Wright Elementary School STP - VA#0061298

**TO:** Paula D. Byers, NRO

**FROM:** Paul E. Herman, P.E., WQAP

**DATE:** February 5, 2002

**COPIES:** File

This memo supersedes my October 29, 1996, memo to James Olson concerning the subject VPDES permit.

The John J. Wright Elementary School STP discharges to an unnamed tributary of the Po River near Spotsylvania, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

At the discharge point, the receiving stream appears as a dry ravine on the USGS Spotsylvania Quadrangle topographic map. The flow frequencies for dry ravines are shown below.

**Unnamed tributary at discharge point:**

| | |
|---|---|
| 1Q10 = 0.0 cfs | High Flow 1Q10 = 0.0 cfs |
| 7Q10 = 0.0 cfs | High Flow 7Q10 = 0.0 cfs |
| 30Q5 = 0.0 cfs | HM = 0.0 cfs |

Annual Average = 0.0 cfs

The dry ravine drains to an unnamed perennial tributary of the Po River. For modeling purposes, flow frequencies have been determined for the unnamed perennial tributary at a point just upstream of the dry ravine using the VDEQ continuous record gage on the Po River near Spotsylvania, VA (#01673800) that has been on operation since 1963. The gage is located at the Route 738 bridge south of Spotsylvania, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

**Po River near Spotsylvania, VA (#01673800):**

Drainage Area = 77.4 $mi^2$

| | |
|---|---|
| 1Q10 = 0.136 cfs | High Flow 1Q10 = 6.36 cfs |
| 7Q10 = 0.190 cfs | High Flow 7Q10 = 9.08 cfs |
| 30Q5 = 0.784 cfs | HM = 4.22 cfs |

Annual Average = 77 cfs

**Unnamed tributary above dry ravine receiving stream:**

Drainage Area = 0.36 $mi^2$

| | |
|---|---|
| 1Q10 = 0.0006 cfs (0.0004 mgd) | High Flow 1Q10 = 0.0296 cfs (0.0191 mgd) |
| 7Q10 = 0.0009 cfs (0.0006 mgd) | High Flow 7Q10 = 0.0422 cfs (0.0273 mgd) |
| 30Q5 = 0.0036 cfs (0.0024 mgd) | HM = 0.0196 cfs (0.0127 mgd) |

Annual Average = 0.358 cfs (0.231 mgd)

The high flow months are December through April. If you have any questions concerning this analysis, please let me know.

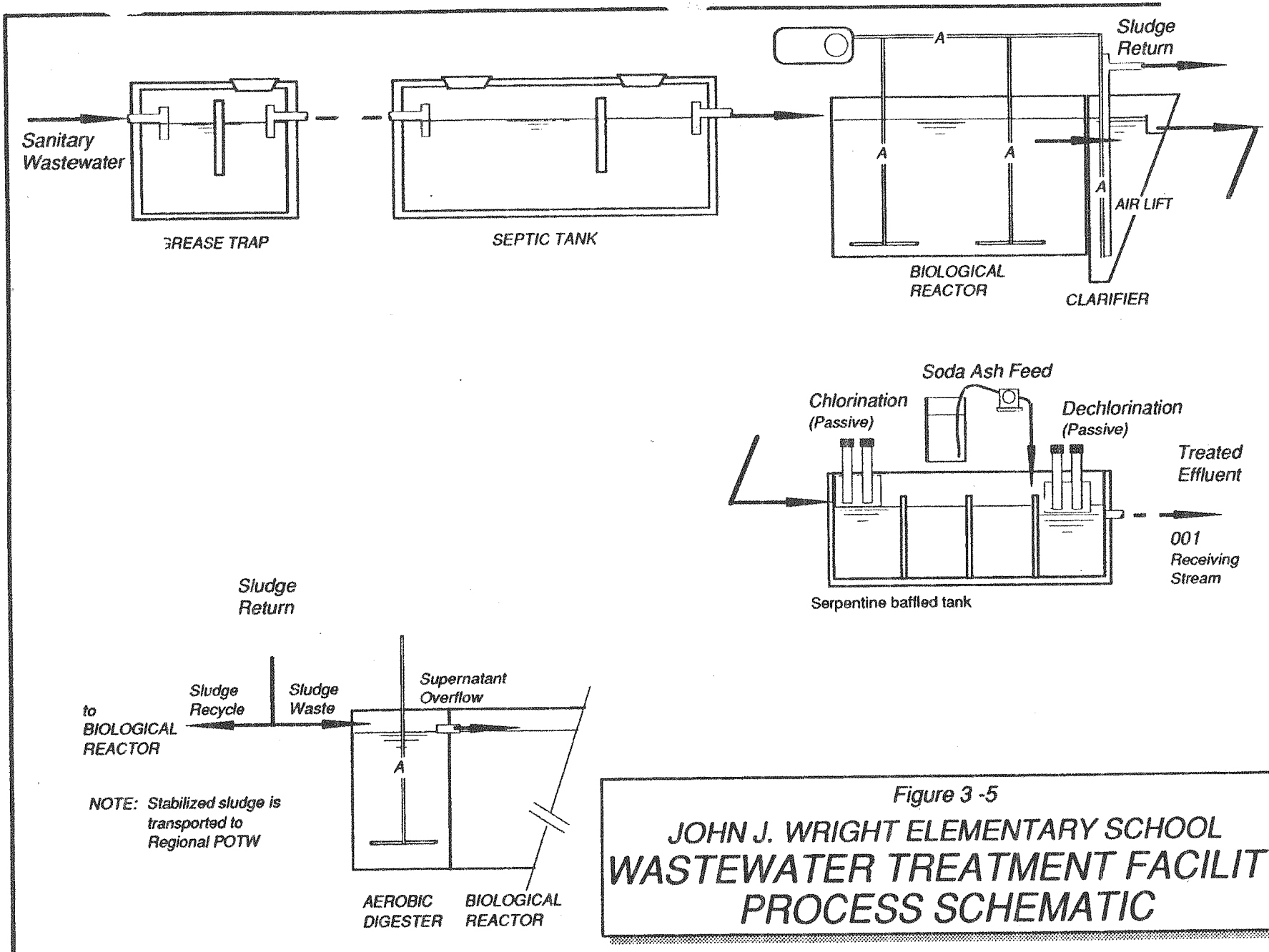



Figure 3 -5

JOHN J. WRIGHT ELEMENTARY SCHOOL

WASTEWATER TREATMENT FACILITY PROCESS SCHEMATIC

Revision 1.0 December, 2000

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3801
www.deq.virginia.gov

Preston Bryant
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

June 13, 2008

Dr. James A. Meyer
Spotsylvania County School Board
8020 Riverstone Drive
Fredericksburg, VA 22407

**Re: John J. Wright Middle School STP Site Inspection – VA0061298**

Dear Mr. Meyer:

Attached is a copy of the Inspection Report generated from the Facility Inspection conducted at the John J. Wright Middle School - Sewage Treatment Plant (STP) on May 15, 2008.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3909 or by e-mail at wgharback@deq.virginia.gov.

Sincerely,

Wilamena Harback

Wilamena Harback
Environmental Specialist II

cc: Permits / DMR File
Compliance Manager
Compliance Auditor
Compliance Inspector
OWCP - Steve Stell
Spotsylvania County - Doug Crooks

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

**NORTHERN REGIONAL OFFICE**
**13901 CROWN COURT, WOODBRIDGE, VA. 22193**
**PHONE: (703) 583–3800 FAX: (703) 583–3801**

**SITE INSPECTION REPORT**

| | | | | | |
|---|---|---|---|---|---|
| FACILITY NAME: | **John J. Wright Middle School STP** | | | | |
| PERMIT NUMBER: | **VA0061298** | INSPECTION DATE: | **05-15-2008** | REPORT DATE: | **06-13-08** |
| INSPECTOR: | **Wilamena Harback** | REVIEWER | | DATE | |
| PRESENT AT INSPECTION: | **Stewart Robbins – Spotsylvania County** | | | | |

## Inspection Type:

| | | | | |
|---|---|---|---|---|
| | Compliance | WL/NOV#: | X | Announced |
| | Sampling | | | Scheduled |
| X | Other: **Technical** | | | |

## Observation Section:

- Arrived on-site @ 0940 hrs.
- Weather conditions were sunny, low 80's.
- Upon arrival at the site, it was obvious that this location is inactive. The school is currently under renovation and the small package plant is capped off and drained. The construction workers are using portable toliets.
- Mr. Robbins comes out once a month to check on the facility.
- The old sand filters from a previous plant are still in place but are being evaluated for removal during the renovation. (The facility has been in contact with DEQ Water Permitting Staff regarding this.)
- Departed site @ 1010 hrs.

**PHOTOGRAPH LOG**

- Photos taken by Wilamena Harback.
- Photos can be located on the DEQ U drive @ Photos - Water Facilities – John J Wright Middle School STP - 05 - 15 -2008.
- Photos are included with this report

## Compliance Section:

DMR VIOLATION(S): **None**

INSPECTION DEFICIENCY(S):

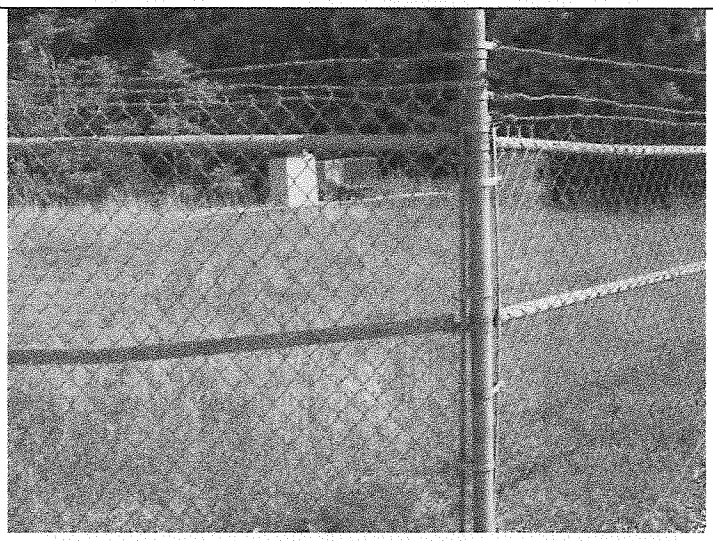
CAUSE OF DEFICIENCY(S):

CORRECTIVE ACTION(S) TAKEN:

INSPECTION RECOMMENDATIONS:

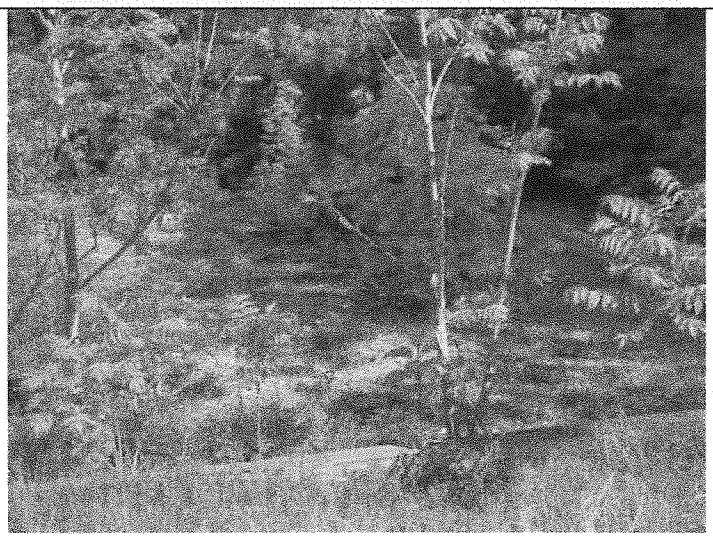
## Sampling Section: NA

1) Parking area with portable toilets.



2) Package Plant, although not in service.

3) Chlorine (red cap) and dechlorination (green caps).



4) Old sand filters from previous treatment plant. (Not in use)

| | |
|---|---|
| John J Wright Middle School STP<br>Site Inspection<br>Photos by: Wilamena Harback<br>Layout by: Wilamena Harback | VA0061298<br>May 15, 2008<br>Page 1 of 1 |

| | |
|---|---|
| To: | Joan Crowther |
| From: | Jennifer Carlson |
| Date: | June 27, 2012 |
| Subject: | Planning Statement for John J. Wright Educational & Cultural Center WWTP |
| Permit Number: | VA0061298 |

**Information for Outfall 001:**

Discharge Type: Municipal
Discharge Flow: 0.015 MGD
Receiving Stream: Po River, UT
Latitude / Longitude: 38° 09'23"/ -77° 35' 51"
Rivermile: 0.13
Streamcode: 8-XDO
Waterbody: VAN-F16R
Water Quality Standards: Class III, Section 3
Drainage Area: 0.05 $mi^2$

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges into an unnamed tributary to Po River. There is water quality information for the segment of the Po River where this unnamed tributary joins it. DEQ monitoring station 8-POR008.97 is located at the Route 208 bridge crossing, approximately 0.7 miles upstream from the confluence of the unnamed tributary with the Po River. The following is the water quality summary for this segment of the Po River, as taken from the Draft 2012 Integrated Assessment*:

*Class III, Section 3.*

*DEQ ambient monitoring station 8-POR008.97, at Route 208.*

*The aquatic life, recreation, and wildlife uses are considered fully supporting. The fish consumption use was not assessed.*

Please note, the nearest downstream DEQ monitoring station is 8-POR004.13 on the Po River, located at the Rt. 1 bridge crossing, approximately 5.4 miles downstream of Outfall 001. The following is the water quality summary for this segment of the Po River, as taken from the Draft 2012 Integrated Assessment*:

*Class III, Section 3.*

*DEQ ambient monitoring station 8-POR004.13, at Route 1.*

*E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The aquatic life and wildlife uses are considered fully supporting. The fish consumption use was not assessed.*

**The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

   Yes.

**Table B. Information on Downstream 303(d) Impairments and TMDLs**

| Waterbody Name | Impaired Use | Cause | Distance From Outfall | TMDL completed | WLA | Basis for WLA | TMDL Schedule |
|---|---|---|---|---|---|---|---|
| ***Impairment Information in the Draft 2012 Integrated Report**** | | | | | | | |
| Po River | Recreation | *E. coli* | 2.7 miles | No | --- | --- | 2022 |

**The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

   There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

   There are no public water supply intakes within a 5 mile radius.

Attachment 5

# FRESHWATER
# WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: John J. Wright Educational & Cultural Center  Permit No.: VA0061298

Receiving Stream: Po River, UT  Version: OWP Guidance Memo 00-2011 (8/24/00)

**Stream Information**

| | | |
|---|---|---|
| Mean Hardness (as CaCO3) = | | mg/L |
| 90% Temperature (Annual) = | | deg C |
| 90% Temperature (Wet season) = | | deg C |
| 90% Maximum pH = | | SU |
| 10% Maximum pH = | | SU |
| Tier Designation (1 or 2) = | 1 | |
| Public Water Supply (PWS) Y/N? = | n | |
| Trout Present Y/N? = | n | |
| Early Life Stages Present Y/N? = | y | |

**Stream Flows**

| | | |
|---|---|---|
| 1Q10 (Annual) = | 0 | MGD |
| 7Q10 (Annual) = | 0 | MGD |
| 30Q10 (Annual) = | 0 | MGD |
| 1Q10 (Wet season) = | 0 | MGD |
| 30Q10 (Wet season) | 0 | MGD |
| 30Q5 = | 0 | MGD |
| Harmonic Mean = | 0 | MGD |

**Mixing Information**

| | | |
|---|---|---|
| Annual - 1Q10 Mix = | 100 | % |
| - 7Q10 Mix = | 100 | % |
| - 30Q10 Mix = | 100 | % |
| Wet Season - 1Q10 Mix = | 100 | % |
| - 30Q10 Mix = | 100 | % |

**Effluent Information**

| | | |
|---|---|---|
| Mean Hardness (as CaCO3) = | 50 | mg/L |
| 90% Temp (Annual) = | 22.5 | deg C |
| 90% Temp (Wet season) = | | deg C |
| 90% Maximum pH = | 8.1 | SU |
| 10% Maximum pH = | | SU |
| Discharge Flow = | 0.015 | MGD |

| Parameter | Background | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | **Most Limiting Allocations** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (ug/l unless noted) | Conc. | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | **Acute** | **Chronic** | **HH (PWS)** | **HH** |
| Acenapthene | 5 | -- | -- | na | 9.9E+02 | -- | -- | na | 9.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.9E+02 |
| Acrolein | 0 | -- | -- | na | 9.3E+00 | -- | -- | na | 9.3E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.3E+00 |
| Acrylonitrile[C] | 0 | -- | -- | na | 2.5E+00 | -- | -- | na | 2.5E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.5E+00 |
| Aldrin [C] | 0 | 3.0E+00 | -- | na | 5.0E-04 | 3.0E+00 | -- | na | 5.0E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 3.0E+00 | -- | na | 5.0E-04 |
| Ammonia-N (mg/l) (Yearly) | 0 | 6.95E+00 | 1.25E+00 | na | -- | 6.95E+00 | 1.25E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E+00 | 1.25E+00 | na | -- |
| Ammonia-N (mg/l) (High Flow) | 0 | 6.95E+00 | 2.10E+00 | na | -- | 6.95E+00 | 2.10E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95E+00 | 2.10E+00 | na | -- |
| Anthracene | 0 | -- | -- | na | 4.0E+04 | -- | -- | na | 4.0E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+04 |
| Antimony | 0 | -- | -- | na | 6.4E+02 | -- | -- | na | 6.4E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.4E+02 |
| Arsenic | o | 3.4E+02 | 1.5E+02 | na | -- | 3.4E+02 | 1.5E+02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.4E+02 | 1.5E+02 | na | -- |
| Barium | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Benzene [C] | 0 | -- | -- | na | 5.1E+02 | -- | -- | na | 5.1E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E+02 |
| Benzidine[C] | 0 | -- | -- | na | 2.0E-03 | -- | -- | na | 2.0E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.0E-03 |
| Benzo (a) anthracene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (b) fluoranthene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (k) fluoranthene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (a) pyrene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Bis2-Chloroethyl Ether [C] | 0 | -- | -- | na | 5.3E+00 | -- | -- | na | 5.3E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+00 |
| Bis2-Chloroisopropyl Ether | 0 | -- | -- | na | 6.5E+04 | -- | -- | na | 6.5E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.5E+04 |
| Bis 2-Ethylhexyl Phthalate [C] | 0 | -- | -- | na | 2.2E+01 | -- | -- | na | 2.2E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.2E+01 |
| Bromoform [C] | 0 | -- | -- | na | 1.4E+03 | -- | -- | na | 1.4E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.4E+03 |
| Butylbenzylphthalate | 0 | -- | -- | na | 1.9E+03 | -- | -- | na | 1.9E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.9E+03 |
| Cadmium | 0 | 1.8E+00 | 6.6E-01 | na | -- | 1.8E+00 | 6.6E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.8E+00 | 6.6E-01 | na | -- |
| Carbon Tetrachloride [C] | 0 | -- | -- | na | 1.6E+01 | -- | -- | na | 1.6E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+01 |
| Chlordane [C] | 0 | 2.4E+00 | 4.3E-03 | na | 8.1E-03 | 2.4E+00 | 4.3E-03 | na | 8.1E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 2.4E+00 | 4.3E-03 | na | 8.1E-03 |
| Chloride | 0 | 8.6E+05 | 2.3E+05 | na | -- | 8.6E+05 | 2.3E+05 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.6E+05 | 2.3E+05 | na | -- |
| TRC | 0 | 1.9E+01 | 1.1E+01 | na | -- | 1.9E+01 | 1.1E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.9E+01 | 1.1E+01 | na | -- |
| Chlorobenzene | 0 | -- | -- | na | 1.6E+03 | -- | -- | na | 1.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+03 |

| Parameter | Background | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | **Most Limiting Allocations** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (ug/l unless noted) | Conc. | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | **Acute** | **Chronic** | **HH (PWS)** | **HH** |
| Chlorodibromomethane[C] | 0 | -- | -- | na | 1.3E+02 | -- | -- | na | 1.3E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.3E+02 |
| Chloroform | 0 | -- | -- | na | 1.1E+04 | -- | -- | na | 1.1E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+04 |
| 2-Chloronaphthalene | 0 | -- | -- | na | 1.6E+03 | -- | -- | na | 1.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+03 |
| 2-Chlorophenol | 0 | -- | -- | na | 1.5E+02 | -- | -- | na | 1.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+02 |
| Chlorpyrifos | 0 | 8.3E-02 | 4.1E-02 | na | -- | 8.3E-02 | 4.1E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.3E-02 | 4.1E-02 | na | -- |
| Chromium III | 0 | 3.2E+02 | 4.2E+01 | na | -- | 3.2E+02 | 4.2E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.2E+02 | 4.2E+01 | na | -- |
| Chromium VI | 0 | 1.6E+01 | 1.1E+01 | na | -- | 1.6E+01 | 1.1E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.6E+01 | 1.1E+01 | na | -- |
| Chromium, Total | 0 | -- | -- | 1.0E+02 | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chrysene [C] | 0 | -- | -- | na | 1.8E-02 | -- | -- | na | 1.8E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-02 |
| Copper | 0 | 7.0E+00 | 5.0E+00 | na | -- | 7.0E+00 | 5.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0E+00 | 5.0E+00 | na | -- |
| Cyanide, Free | 0 | 2.2E+01 | 5.2E+00 | na | 1.6E+04 | 2.2E+01 | 5.2E+00 | na | 1.6E+04 | -- | -- | -- | -- | -- | -- | -- | -- | 2.2E+01 | 5.2E+00 | na | 1.6E+04 |
| DDD [C] | 0 | -- | -- | na | 3.1E-03 | -- | -- | na | 3.1E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.1E-03 |
| DDE [C] | 0 | -- | -- | na | 2.2E-03 | -- | -- | na | 2.2E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.2E-03 |
| DDT [C] | 0 | 1.1E+00 | 1.0E-03 | na | 2.2E-03 | 1.1E+00 | 1.0E-03 | na | 2.2E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 1.1E+00 | 1.0E-03 | na | 2.2E-03 |
| Demeton | 0 | -- | 1.0E-01 | na | -- | -- | 1.0E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.0E-01 | na | -- |
| Diazinon | 0 | 1.7E-01 | 1.7E-01 | na | -- | 1.7E-01 | 1.7E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7E-01 | 1.7E-01 | na | -- |
| Dibenz(a,h)anthracene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| 1,2-Dichlorobenzene | 0 | -- | -- | na | 1.3E+03 | -- | -- | na | 1.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.3E+03 |
| 1,3-Dichlorobenzene | 0 | -- | -- | na | 9.6E+02 | -- | -- | na | 9.6E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.6E+02 |
| 1,4-Dichlorobenzene | 0 | -- | -- | na | 1.9E+02 | -- | -- | na | 1.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.9E+02 |
| 3,3-Dichlorobenzidine[C] | 0 | -- | -- | na | 2.8E-01 | -- | -- | na | 2.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.8E-01 |
| Dichlorobromomethane [C] | 0 | -- | -- | na | 1.7E+02 | -- | -- | na | 1.7E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.7E+02 |
| 1,2-Dichloroethane [C] | 0 | -- | -- | na | 3.7E+02 | -- | -- | na | 3.7E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.7E+02 |
| 1,1-Dichloroethylene | 0 | -- | -- | na | 7.1E+03 | -- | -- | na | 7.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 7.1E+03 |
| 1,2-trans-dichloroethylene | 0 | -- | -- | na | 1.0E+04 | -- | -- | na | 1.0E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.0E+04 |
| 2,4-Dichlorophenol | 0 | -- | -- | na | 2.9E+02 | -- | -- | na | 2.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.9E+02 |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| 1,2-Dichloropropane[C] | 0 | -- | -- | na | 1.5E+02 | -- | -- | na | 1.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+02 |
| 1,3-Dichloropropene [C] | 0 | -- | -- | na | 2.1E+02 | -- | -- | na | 2.1E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.1E+02 |
| Dieldrin [C] | 0 | 2.4E-01 | 5.6E-02 | na | 5.4E-04 | 2.4E-01 | 5.6E-02 | na | 5.4E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 2.4E-01 | 5.6E-02 | na | 5.4E-04 |
| Diethyl Phthalate | 0 | -- | -- | na | 4.4E+04 | -- | -- | na | 4.4E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.4E+04 |
| 2,4-Dimethylphenol | 0 | -- | -- | na | 8.5E+02 | -- | -- | na | 8.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.5E+02 |
| Dimethyl Phthalate | 0 | -- | -- | na | 1.1E+06 | -- | -- | na | 1.1E+06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+06 |
| Di-n-Butyl Phthalate | 0 | -- | -- | na | 4.5E+03 | -- | -- | na | 4.5E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.5E+03 |
| 2,4 Dinitrophenol | 0 | -- | -- | na | 5.3E+03 | -- | -- | na | 5.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+03 |
| 2-Methyl-4,6-Dinitrophenol | 0 | -- | -- | na | 2.8E+02 | -- | -- | na | 2.8E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.8E+02 |
| 2,4-Dinitrotoluene [C] | 0 | -- | -- | na | 3.4E+01 | -- | -- | na | 3.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.4E+01 |
| Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin | 0 | -- | -- | na | 5.1E-08 | -- | -- | na | 5.1E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E-08 |
| 1,2-Diphenylhydrazine[C] | 0 | -- | -- | na | 2.0E+00 | -- | -- | na | 2.0E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.0E+00 |
| Alpha-Endosulfan | 0 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | 2.2E-01 | 5.6E-02 | na | 8.9E+01 |
| Beta-Endosulfan | 0 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | 2.2E-01 | 5.6E-02 | na | 8.9E+01 |
| Alpha + Beta Endosulfan | 0 | 2.2E-01 | 5.6E-02 | -- | -- | 2.2E-01 | 5.6E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.2E-01 | 5.6E-02 | -- | -- |
| Endosulfan Sulfate | 0 | -- | -- | na | 8.9E+01 | -- | -- | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.9E+01 |
| Endrin | 0 | 8.6E-02 | 3.6E-02 | na | 6.0E-02 | 8.6E-02 | 3.6E-02 | na | 6.0E-02 | -- | -- | -- | -- | -- | -- | -- | -- | 8.6E-02 | 3.6E-02 | na | 6.0E-02 |
| Endrin Aldehyde | 0 | -- | -- | na | 3.0E-01 | -- | -- | na | 3.0E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E-01 |

| Parameter | Background | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | **Most Limiting Allocations** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (ug/l unless noted) | Conc. | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | **Acute** | **Chronic** | **HH (PWS)** | **HH** |
| Ethylbenzene | 0 | -- | -- | na | 2.1E+03 | -- | -- | na | 2.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.1E+03 |
| Fluoranthene | 0 | -- | -- | na | 1.4E+02 | -- | -- | na | 1.4E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.4E+02 |
| Fluorene | 0 | -- | -- | na | 5.3E+03 | -- | -- | na | 5.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+03 |
| Foaming Agents | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Guthion | 0 | -- | 1.0E-02 | na | -- | -- | 1.0E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.0E-02 | na | -- |
| Heptachlor [C] | 0 | 5.2E-01 | 3.8E-03 | na | 7.9E-04 | 5.2E-01 | 3.8E-03 | na | 7.9E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 5.2E-01 | 3.8E-03 | na | 7.9E-04 |
| Heptachlor Epoxide[C] | 0 | 5.2E-01 | 3.8E-03 | na | 3.9E-04 | 5.2E-01 | 3.8E-03 | na | 3.9E-04 | -- | -- | -- | -- | -- | -- | -- | -- | 5.2E-01 | 3.8E-03 | na | 3.9E-04 |
| Hexachlorobenzene[C] | 0 | -- | -- | na | 2.9E-03 | -- | -- | na | 2.9E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.9E-03 |
| Hexachlorobutadiene[C] | 0 | -- | -- | na | 1.8E+02 | -- | -- | na | 1.8E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E+02 |
| Hexachlorocyclohexane Alpha-BHC[C] | 0 | -- | -- | na | 4.9E-02 | -- | -- | na | 4.9E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.9E-02 |
| Hexachlorocyclohexane Beta-BHC[C] | 0 | -- | -- | na | 1.7E-01 | -- | -- | na | 1.7E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.7E-01 |
| Hexachlorocyclohexane Gamma-BHC[C] (Lindane) | 0 | 9.5E-01 | na | na | 1.8E+00 | 9.5E-01 | -- | na | 1.8E+00 | -- | -- | -- | -- | -- | -- | -- | -- | 9.5E-01 | -- | na | 1.8E+00 |
| Hexachlorocyclopentadiene | 0 | -- | -- | na | 1.1E+03 | -- | -- | na | 1.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+03 |
| Hexachloroethane[C] | 0 | -- | -- | na | 3.3E+01 | -- | -- | na | 3.3E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.3E+01 |
| Hydrogen Sulfide | 0 | -- | 2.0E+00 | na | -- | -- | 2.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.0E+00 | na | -- |
| Indeno (1,2,3-cd) pyrene [C] | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Iron | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Isophorone[C] | 0 | -- | -- | na | 9.6E+03 | -- | -- | na | 9.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.6E+03 |
| Kepone | 0 | -- | 0.0E+00 | na | -- | -- | 0.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.0E+00 | na | -- |
| Lead | 0 | 4.9E+01 | 5.6E+00 | na | -- | 4.9E+01 | 5.6E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.9E+01 | 5.6E+00 | na | -- |
| Malathion | 0 | -- | 1.0E-01 | na | -- | -- | 1.0E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.0E-01 | na | -- |
| Manganese | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Mercury | 0 | 1.4E+00 | 7.7E-01 | - - | - - | 1.4E+00 | 7.7E-01 | - - | - - | -- | -- | -- | -- | -- | -- | -- | -- | 1.4E+00 | 7.7E-01 | - - | - - |
| Methyl Bromide | 0 | -- | -- | na | 1.5E+03 | -- | -- | na | 1.5E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+03 |
| Methylene Chloride [C] | 0 | -- | -- | na | 5.9E+03 | -- | -- | na | 5.9E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.9E+03 |
| Methoxychlor | 0 | -- | 3.0E-02 | na | -- | -- | 3.0E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.0E-02 | na | -- |
| Mirex | 0 | -- | 0.0E+00 | na | -- | -- | 0.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.0E+00 | na | -- |
| Nickel | 0 | 1.0E+02 | 1.1E+01 | na | 4.6E+03 | 1.0E+02 | 1.1E+01 | na | 4.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | 1.0E+02 | 1.1E+01 | na | 4.6E+03 |
| Nitrate (as N) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Nitrobenzene | 0 | -- | -- | na | 6.9E+02 | -- | -- | na | 6.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.9E+02 |
| N-Nitrosodimethylamine[C] | 0 | -- | -- | na | 3.0E+01 | -- | -- | na | 3.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E+01 |
| N-Nitrosodiphenylamine[C] | 0 | -- | -- | na | 6.0E+01 | -- | -- | na | 6.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.0E+01 |
| N-Nitrosodi-n-propylamine[C] | 0 | -- | -- | na | 5.1E+00 | -- | -- | na | 5.1E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E+00 |
| Nonylphenol | 0 | 2.8E+01 | 6.6E+00 | -- | -- | 2.8E+01 | 6.6E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.8E+01 | 6.6E+00 | na | -- |
| Parathion | 0 | 6.5E-02 | 1.3E-02 | na | -- | 6.5E-02 | 1.3E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.5E-02 | 1.3E-02 | na | -- |
| PCB Total[C] | 0 | -- | 1.4E-02 | na | 6.4E-04 | -- | 1.4E-02 | na | 6.4E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4E-02 | na | 6.4E-04 |
| Pentachlorophenol [C] | 0 | 7.7E-03 | 5.9E-03 | na | 3.0E+01 | 7.7E-03 | 5.9E-03 | na | 3.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | 7.7E-03 | 5.9E-03 | na | 3.0E+01 |
| Phenol | 0 | -- | -- | na | 8.6E+05 | -- | -- | na | 8.6E+05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.6E+05 |
| Pyrene | 0 | -- | -- | na | 4.0E+03 | -- | -- | na | 4.0E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+03 |
| Radionuclides | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Gross Alpha Activity (pCi/L) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Beta and Photon Activity (mrem/yr) | 0 | -- | -- | na | 4.0E+00 | -- | -- | na | 4.0E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+00 |
| Radium 226 + 228 (pCi/L) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Uranium (ug/l) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |

| Parameter | Background | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | **Most Limiting Allocations** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (ug/l unless noted) | Conc. | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | **Acute** | **Chronic** | **HH (PWS)** | **HH** |
| Selenium, Total Recoverable | 0 | 2.0E+01 | 5.0E+00 | na | 4.2E+03 | 2.0E+01 | 5.0E+00 | na | 4.2E+03 | -- | -- | -- | -- | -- | -- | -- | -- | **2.0E+01** | **5.0E+00** | **na** | **4.2E+03** |
| Silver | 0 | 1.0E+00 | -- | na | -- | 1.0E+00 | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.0E+00** | **--** | **na** | **--** |
| Sulfate | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **--** |
| 1,1,2,2-Tetrachloroethane[C] | 0 | -- | -- | na | 4.0E+01 | -- | -- | na | 4.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **4.0E+01** |
| Tetrachloroethylene[C] | 0 | -- | -- | na | 3.3E+01 | -- | -- | na | 3.3E+01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **3.3E+01** |
| Thallium | 0 | -- | -- | na | 4.7E-01 | -- | -- | na | 4.7E-01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **4.7E-01** |
| Toluene | 0 | -- | -- | na | 6.0E+03 | -- | -- | na | 6.0E+03 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **6.0E+03** |
| Total dissolved solids | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **--** |
| Toxaphene [C] | 0 | 7.3E-01 | 2.0E-04 | na | 2.8E-03 | 7.3E-01 | 2.0E-04 | na | 2.8E-03 | -- | -- | -- | -- | -- | -- | -- | -- | **7.3E-01** | **2.0E-04** | **na** | **2.8E-03** |
| Tributyltin | 0 | 4.6E-01 | 7.2E-02 | na | -- | 4.6E-01 | 7.2E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | **4.6E-01** | **7.2E-02** | **na** | **--** |
| 1,2,4-Trichlorobenzene | 0 | -- | -- | na | 7.0E+01 | -- | -- | na | 7.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **7.0E+01** |
| 1,1,2-Trichloroethane[C] | 0 | -- | -- | na | 1.6E+02 | -- | -- | na | 1.6E+02 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **1.6E+02** |
| Trichloroethylene [C] | 0 | -- | -- | na | 3.0E+02 | -- | -- | na | 3.0E+02 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **3.0E+02** |
| 2,4,6-Trichlorophenol [C] | 0 | -- | -- | na | 2.4E+01 | -- | -- | na | 2.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **2.4E+01** |
| 2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **--** |
| Vinyl Chloride[C] | 0 | -- | -- | na | 2.4E+01 | -- | -- | na | 2.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | **--** | **--** | **na** | **2.4E+01** |
| Zinc | 0 | 6.5E+01 | 6.6E+01 | na | 2.6E+04 | 6.5E+01 | 6.6E+01 | na | 2.6E+04 | -- | -- | -- | -- | -- | -- | -- | -- | **6.5E+01** | **6.6E+01** | **na** | **2.6E+04** |

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

| Metal | Target Value (SSTV) |
|---|---|
| Antimony | 6.4E+02 |
| Arsenic | 9.0E+01 |
| Barium | na |
| Cadmium | 3.9E-01 |
| Chromium III | 2.5E+01 |
| Chromium VI | 6.4E+00 |
| Copper | 2.8E+00 |
| Iron | na |
| Lead | 3.4E+00 |
| Manganese | na |
| Mercury | 4.6E-01 |
| Nickel | 6.8E+00 |
| Selenium | 3.0E+00 |
| Silver | 4.2E-01 |
| Zinc | 2.6E+01 |

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# John J Wright Educational Cultural Center pH and Temperature Data January 2009 - July 2012

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jan-09 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | 11 | 7.59 |
| | 6 | 10.6 | 7.66 |
| | 7 | 8.7 | 7.3 |
| | 8 | 9.8 | 7.16 |
| | 9 | 10.1 | 7.47 |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | 11 | 7.55 |
| | 13 | 10.3 | 7.51 |
| | 14 | 11.3 | 7.24 |
| | 15 | 10.9 | 7.34 |
| | 16 | 8.9 | 7.27 |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | 9.5 | 7.48 |
| | 22 | 9.4 | 7.41 |
| | 23 | 9.5 | 7.61 |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | 7.4 | 7.49 |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | 9.7 | 7.53 |
| | 30 | 7.2 | 7.11 |
| | 31 | n/d | n/d |
| Feb-09 | 1 | n/d | n/d |
| | 2 | 10.1 | 7.25 |
| | 3 | 8.6 | 7.25 |
| | 4 | 8.5 | 7.38 |
| | 5 | 7.8 | 7.31 |
| | 6 | 7.9 | 6.93 |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | 9.2 | 7.03 |
| | 10 | 10 | 7.38 |
| | 11 | 10.8 | 7.16 |
| | 12 | 11.9 | 7.19 |
| | 13 | 11.2 | 7.07 |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Feb-09 | 16 | 9.6 | 7.08 |
| | 17 | 9.9 | 7.17 |
| | 18 | 9.7 | 7.11 |
| | 19 | 11.4 | 7.33 |
| | 20 | 9.8 | 7.2 |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | 9.1 | 7.39 |
| | 24 | 9.1 | 7.51 |
| | 25 | 6.4 | 7.3 |
| | 26 | 10.3 | 7.37 |
| | 27 | 10.3 | 7.97 |
| | 28 | n/d | n/d |
| Mar-09 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | 8.9 | 7.46 |
| | 6 | 10.7 | 7.47 |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | 13.4 | 7.43 |
| | 10 | 11.5 | 7.7 |
| | 11 | 13.6 | 7.62 |
| | 12 | 12.3 | 7.38 |
| | 13 | 12.8 | 7.42 |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | 12.6 | 7.3 |
| | 17 | 13.1 | 7.34 |
| | 18 | 13.1 | 7.3 |
| | 19 | 12.7 | 7.25 |
| | 20 | 11.7 | 7.32 |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | 10 | 7.38 |
| | 24 | 13.3 | 7.58 |
| | 25 | 13.3 | 7.66 |
| | 26 | 12 | 7.68 |
| | 27 | 13.7 | 7.68 |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | 14 | 7.41 |
| | 31 | 12.8 | 7.55 |
| Apr-09 | 1 | 14.4 | 7.27 |
| | 2 | 13.6 | 6.85 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Apr-09 | 3 | 14.1 | 6.94 |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | 14.9 | 7.14 |
| | 7 | 14.6 | 7.14 |
| | 8 | 12.4 | 7.42 |
| | 9 | 15.7 | 7.31 |
| | 10 | 16.2 | 7.45 |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | 11.1 | 6.99 |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | n/d | n/d |
| | 20 | 0.8 | 6.96 |
| | 21 | 15.1 | 7 |
| | 22 | 14.7 | 7.13 |
| | 23 | 14.8 | 7.36 |
| | 24 | 14.8 | 7.3 |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | 17 | 7.49 |
| | 28 | 17.5 | 7.65 |
| | 29 | 18 | 7.65 |
| | 30 | 17.5 | 7.54 |
| May-09 | 1 | 17.6 | 7.4 |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | 17.1 | 7 |
| | 5 | 17.4 | 7.1 |
| | 6 | 17.7 | 7 |
| | 7 | 17.2 | 6.7 |
| | 8 | 18 | 7.4 |
| | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | 16.8 | 7.38 |
| | 12 | 17.7 | 7.62 |
| | 13 | 17.5 | 7.54 |
| | 14 | 18.3 | 7.34 |
| | 15 | 18.7 | 7.57 |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | 16.9 | 7.5 |



Attachment 6

# John J Wright Educational Cultural Center pH and Temperature Data January 2009 - July 2012

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| May-09 | 19 | 18.2 | 7.36 |
| | 20 | 16.5 | 7.52 |
| | 21 | 18.4 | 7.62 |
| | 22 | 19.2 | 7.49 |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | 18.7 | 7.19 |
| | 27 | 18.7 | 7.65 |
| | 28 | 18.2 | 7.32 |
| | 29 | 20.2 | 7.6 |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Jun-09 | 1 | 18.4 | 7.57 |
| | 2 | 18.9 | 7.52 |
| | 3 | 19 | 6.98 |
| | 4 | 18.5 | 7.07 |
| | 5 | 18.3 | 6.86 |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | 18.6 | 7.39 |
| | 9 | 21.7 | 8.01 |
| | 10 | 19.1 | 7.07 |
| | 11 | 19 | 6.88 |
| | 12 | 18.7 | 7.15 |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | 19.5 | 7.38 |
| | 16 | 18.8 | 7.22 |
| | 17 | 18.7 | 7.25 |
| | 18 | 19.3 | 7.86 |
| | 19 | 18.9 | 7.02 |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | 19.5 | 7.19 |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | 18.9 | 6.94 |
| | 30 | 20.5 | 8.08 |
| Jul-09 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jul-09 | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Aug-09 | 1 | | |
| | 2 | | |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | | |
| | 9 | | |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | | |
| | 16 | | |
| | 17 | 23.2 | 7.79 |
| | 18 | 25.9 | 0.3 |
| | 19 | 25.6 | 8.17 |
| | 20 | 26.3 | 8.11 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Aug-09 | 21 | 24.9 | 7.4 |
| | 22 | | |
| | 23 | | |
| | 24 | 24.9 | 7.66 |
| | 25 | 24.2 | 7.25 |
| | 26 | 23.9 | 7.38 |
| | 27 | 24.3 | 7.34 |
| | 28 | 25.5 | 7.57 |
| | 29 | | |
| | 30 | | |
| | 31 | 22.9 | 7.93 |
| Sep-09 | 1 | 20.2 | 7.75 |
| | 2 | 21.2 | 7.86 |
| | 3 | 20.2 | 7.85 |
| | 4 | 20.5 | 7.9 |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | 22.8 | 7.64 |
| | 9 | 22.5 | 7.68 |
| | 10 | 21.3 | 7.56 |
| | 11 | 22.1 | 7.8 |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | 21 | 7.72 |
| | 15 | 23.7 | 7.86 |
| | 16 | 22.8 | 8.03 |
| | 17 | 22.2 | 7.8 |
| | 18 | 22.1 | 7.73 |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | 20.2 | 8.07 |
| | 22 | 23.9 | 7.71 |
| | 23 | 22.9 | 7.76 |
| | 24 | 24.5 | 7.67 |
| | 25 | 23.9 | 7.84 |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | 21.1 | 7.41 |
| | 29 | 21.8 | 7.14 |
| | 30 | 20 | 7.42 |
| Oct-09 | 1 | 20.3 | 7.79 |
| | 2 | 19.7 | 7.77 |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | 17.1 | 7.88 |
| | 6 | 20.1 | 7.68 |

# John J Wright Educational Cultural Center pH and Temperature Data January 2009 - July 2012

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Oct-09 | 7 | 23.7 | 7.84 |
| | 8 | 17.8 | 7.68 |
| | 9 | 18.7 | 8.02 |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | 16.9 | 7.86 |
| | 13 | 18.8 | 7.7 |
| | 14 | 18.5 | 7.7 |
| | 15 | 18.3 | 7.84 |
| | 16 | 16.8 | 7.76 |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | 15.6 | 7.72 |
| | 20 | 16.4 | 8.02 |
| | 21 | 17.8 | 7.63 |
| | 22 | 17.8 | 7.85 |
| | 23 | 18.2 | 7.73 |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | 16.5 | 8.02 |
| | 27 | 18.3 | 7.44 |
| | 28 | 18.4 | 7.04 |
| | 29 | 17.9 | 7.58 |
| | 30 | 18 | 7.65 |
| | 31 | n/d | n/d |
| Nov-09 | 1 | n/d | n/d |
| | 2 | 16.7 | 6.91 |
| | 3 | 14.8 | 6.88 |
| | 4 | 17.5 | 7.41 |
| | 5 | 17.7 | 7.35 |
| | 6 | 17 | 7.12 |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | 17 | 7.65 |
| | 10 | 18.1 | 8.01 |
| | 11 | 16.4 | 8.83 |
| | 12 | 16.7 | 6.85 |
| | 13 | 15.7 | 6.64 |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | 16.8 | 7.57 |
| | 17 | 15.7 | 7.52 |
| | 18 | 16.9 | 7.77 |
| | 19 | 16.4 | 7.91 |
| | 20 | 15.7 | 7.32 |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Nov-09 | 23 | 15.5 | 7.4 |
| | 24 | 16.4 | 7.4 |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | 15.6 | 7.18 |
| Dec-09 | 1 | 15.8 | 7.18 |
| | 2 | 17.9 | 7.28 |
| | 3 | 14.9 | 6.77 |
| | 4 | 14.6 | 6.99 |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | 13.8 | 7.02 |
| | 8 | 13.3 | 6.96 |
| | 9 | 12.8 | 6.26 |
| | 10 | 12.9 | 6.94 |
| | 11 | 11.6 | 6.93 |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | 12.2 | 6.66 |
| | 15 | 13.1 | 7.21 |
| | 16 | 12.3 | 7.09 |
| | 17 | 11.8 | 7.27 |
| | 18 | 13.1 | 7.3 |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Jan-10 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | 8.3 | 7.01 |
| | 5 | 8.6 | 7.14 |
| | 6 | 8.8 | 7.21 |
| | 7 | 8.8 | 7.11 |
| | 8 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jan-10 | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | 7.6 | 6.98 |
| | 12 | 8.8 | 6.9 |
| | 13 | 9.7 | 7.5 |
| | 14 | 10.7 | 7.56 |
| | 15 | 10 | 7.47 |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | 10.8 | 7.46 |
| | 20 | 9.5 | 6.74 |
| | 21 | 11.1 | 7.39 |
| | 22 | 10.5 | 7.12 |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | 11 | 7.51 |
| | 26 | 11.1 | 7.25 |
| | 27 | 11.2 | 7.11 |
| | 28 | 10.8 | 7.1 |
| | 29 | 11.4 | 7.21 |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Feb-10 | 1 | | |
| | 2 | | |
| | 3 | n/d | n/d |
| | 4 | 10.1 | 7.27 |
| | 5 | n/d | n/d |
| | 6 | | |
| | 7 | | |
| | 8 | | |
| | 9 | | |
| | 10 | | |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | | |
| | 14 | n/d | n/d |
| | 15 | 7.5 | 6.67 |
| | 16 | n/d | n/d |
| | 17 | 7.3 | 6.85 |
| | 18 | 8 | 7.09 |
| | 19 | 8.01 | 6.97 |
| | 20 | | |
| | 21 | n/d | n/d |
| | 22 | 9.2 | 6.8 |
| | 23 | 8.4 | 6.7 |
| | 24 | 10 | 6.96 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Feb-10 | 25 | 9.4 | 6.82 |
| | 26 | 8.9 | 7.12 |
| | 27 | | |
| | 28 | n/d | n/d |
| Mar-10 | 1 | 12.4 | 7.06 |
| | 2 | 10.2 | 7.31 |
| | 3 | 9.1 | 7.02 |
| | 4 | 10.1 | 7.38 |
| | 5 | 9.5 | 7.19 |
| | 6 | | |
| | 7 | n/d | n/d |
| | 8 | 10.2 | 7.33 |
| | 9 | 9.7 | 7.14 |
| | 10 | 10.8 | 7.28 |
| | 11 | 11.6 | 7.25 |
| | 12 | 14.3 | 7.35 |
| | 13 | | |
| | 14 | n/d | n/d |
| | 15 | 11.2 | 6.92 |
| | 16 | 11.6 | 6.74 |
| | 17 | 13.3 | 7.52 |
| | 18 | 11.6 | 7.03 |
| | 19 | 11.4 | 7.18 |
| | 20 | | |
| | 21 | n/d | n/d |
| | 22 | 13.9 | 7.27 |
| | 23 | 12.2 | 7.01 |
| | 24 | 13 | 7 |
| | 25 | 12.6 | 6.98 |
| | 26 | 12.8 | 6.9 |
| | 27 | | |
| | 28 | n/d | n/d |
| | 29 | 14.9 | 6.62 |
| | 30 | 11.5 | 6.55 |
| | 31 | 12.8 | 6.87 |
| Apr-10 | 1 | 11.8 | 6.83 |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | | |
| | 11 | n/d | n/d |
| | 12 | 17.5 | 7.18 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Apr-10 | 13 | 14.4 | 6.88 |
| | 14 | 15.1 | 7.1 |
| | 15 | 16.8 | 7.43 |
| | 16 | 19.5 | 7.38 |
| | 17 | | |
| | 18 | n/d | n/d |
| | 19 | 17.1 | 7.02 |
| | 20 | 14.4 | 6.73 |
| | 21 | 14.2 | 7.34 |
| | 22 | 16 | 6.67 |
| | 23 | 18 | 6.71 |
| | 24 | | |
| | 25 | n/d | n/d |
| | 26 | 15.7 | 6.82 |
| | 27 | 15.2 | 7.05 |
| | 28 | 18.2 | 7.16 |
| | 29 | 19.2 | 7.15 |
| | 30 | 19.2 | 7.31 |
| May-10 | 1 | | |
| | 2 | n/d | n/d |
| | 3 | 18.8 | 7.91 |
| | 4 | 18.6 | 7.09 |
| | 5 | 22 | 6.97 |
| | 6 | 17.5 | 7.02 |
| | 7 | 18.3 | 8.16 |
| | 8 | | |
| | 9 | n/d | n/d |
| | 10 | 17.6 | 7.11 |
| | 11 | 20.2 | 6.97 |
| | 12 | 16.5 | 7.15 |
| | 13 | 18.1 | 7.1 |
| | 14 | 21.6 | 6.9 |
| | 15 | | |
| | 16 | n/d | n/d |
| | 17 | 18 | 7.27 |
| | 18 | 21.4 | 6.98 |
| | 19 | 21.4 | 7.28 |
| | 20 | 16.8 | 7.11 |
| | 21 | 19 | 7.26 |
| | 22 | | |
| | 23 | n/d | n/d |
| | 24 | 21.8 | 7.12 |
| | 25 | 18.5 | 7.1 |
| | 26 | 18.4 | 7.25 |
| | 27 | 20.6 | 7.23 |
| | 28 | 19.7 | 7.55 |
| | 29 | | |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| May-10 | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Jun-10 | 1 | 20.6 | 7.89 |
| | 2 | 22.4 | 7.7 |
| | 3 | 22.6 | 7.45 |
| | 4 | 21.7 | 7.63 |
| | 5 | | |
| | 6 | n/d | n/d |
| | 7 | 24 | 7.78 |
| | 8 | 22.4 | 7.71 |
| | 9 | 21.7 | 7.72 |
| | 10 | 23.9 | 7.81 |
| | 11 | 22.6 | 7.75 |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | 22.6 | 7.91 |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | | |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| Jul-10 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jul-10 | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |
| Aug-10 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | n/d | n/d |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | n/d | n/d |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | | |
| | 15 | n/d | n/d |
| | 16 | 24.3 | 8.23 |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | 23.8 | 8.43 |
| | 20 | 25.1 | 8.39 |
| | 21 | | |
| | 22 | n/d | n/d |
| | 23 | 24.7 | 8.93 |
| | 24 | 24.6 | 8.89 |
| | 25 | 23 | 8.28 |
| | 26 | 22.7 | 8.44 |
| | 27 | 23.6 | 6.98 |
| | 28 | | |
| | 29 | n/d | n/d |
| | 30 | 24.3 | 7.99 |
| | 31 | 24.1 | 7.13 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Sep-10 | 1 | 24.5 | 6.66 |
| | 2 | 24.6 | 6.56 |
| | 3 | 25.7 | 7.19 |
| | 4 | | |
| | 5 | n/d | n/d |
| | 6 | n/d | n/d |
| | 7 | 21 | 7.54 |
| | 8 | 23 | 7.65 |
| | 9 | 22.2 | 7.22 |
| | 10 | 22.6 | 8.31 |
| | 11 | | |
| | 12 | n/d | n/d |
| | 13 | 22.2 | 8.13 |
| | 14 | 23.4 | 8.32 |
| | 15 | 21.7 | 8.44 |
| | 16 | 20.9 | 8.45 |
| | 17 | 22.4 | 7.89 |
| | 18 | | |
| | 19 | n/d | n/d |
| | 20 | 21.3 | 8.46 |
| | 21 | 18 | 8.18 |
| | 22 | 20.6 | 8.48 |
| | 23 | 23.6 | 8.22 |
| | 24 | 23.3 | 8.12 |
| | 25 | | |
| | 26 | n/d | n/d |
| | 27 | 22.7 | 8.58 |
| | 28 | 23.5 | 8.1 |
| | 29 | 20 | 8.6 |
| | 30 | 23.3 | 7.82 |
| Oct-10 | 1 | 21.5 | 7.54 |
| | 2 | | |
| | 3 | n/d | n/d |
| | 4 | 19.2 | 8.11 |
| | 5 | 18.2 | 8.23 |
| | 6 | 18 | 7.49 |
| | 7 | 20.3 | 7.75 |
| | 8 | 19 | 8.12 |
| | 9 | | |
| | 10 | n/d | n/d |
| | 11 | 20.9 | 8.39 |
| | 12 | 20.5 | 8.17 |
| | 13 | 20.1 | 8.26 |
| | 14 | 18.1 | 8.27 |
| | 15 | 16.9 | 7.44 |
| | 16 | | |
| | 17 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Oct-10 | 18 | 16.6 | 7.88 |
| | 19 | 16.2 | 8.05 |
| | 20 | 17.8 | 8.02 |
| | 21 | 18.5 | 8.02 |
| | 22 | 16.2 | 8.14 |
| | 23 | | |
| | 24 | n/d | n/d |
| | 25 | 18.1 | 7.92 |
| | 26 | 19.1 | 8.17 |
| | 27 | 21.5 | 7.64 |
| | 28 | 20.4 | 7.96 |
| | 29 | 17.4 | 7.83 |
| | 30 | | |
| | 31 | n/d | n/d |
| Nov-10 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | 14.8 | 7.91 |
| | 4 | 16.1 | 7.75 |
| | 5 | 14.8 | 7.51 |
| | 6 | | |
| | 7 | n/d | n/d |
| | 8 | 14.4 | 8.04 |
| | 9 | 14.4 | 7.67 |
| | 10 | 12.7 | 8.38 |
| | 11 | 14.6 | 7.97 |
| | 12 | 14.6 | 7.28 |
| | 13 | n/d | n/d |
| | 14 | | |
| | 15 | 15.1 | 7.76 |
| | 16 | 15.9 | 7.79 |
| | 17 | 15.9 | 7.94 |
| | 18 | 12.7 | 7.92 |
| | 19 | 13.6 | 7.62 |
| | 20 | n/d | n/d |
| | 21 | | |
| | 22 | 15.5 | 7.51 |
| | 23 | 14.8 | 7.91 |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | | |
| | 29 | 11.4 | 7.14 |
| | 30 | 12.3 | 7.9 |
| Dec-10 | 1 | 15.5 | 7.85 |
| | 2 | 10.1 | 7.79 |
| | 3 | 12.3 | 7.66 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Dec-10 | 4 | n/d | n/d |
| | 5 | | |
| | 6 | 10.4 | 7.74 |
| | 7 | 9.8 | 7.83 |
| | 8 | 6.9 | 7.72 |
| | 9 | 9.9 | 7.3 |
| | 10 | 9.6 | 7.33 |
| | 11 | | |
| | 12 | n/d | n/d |
| | 13 | 9.4 | 7.76 |
| | 14 | 7.6 | 7.46 |
| | 15 | 7.6 | 7.72 |
| | 16 | | |
| | 17 | | |
| | 18 | | |
| | 19 | n/d | n/d |
| | 20 | 8.3 | 7.31 |
| | 21 | 7.3 | 7.98 |
| | 22 | | |
| | 23 | | |
| | 24 | n/d | n/d |
| | 25 | | |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | | |
| | 30 | n/d | n/d |
| | 31 | | |
| Jan-11 | 1 | | |
| | 2 | n/d | n/d |
| | 3 | 7.3 | 7.21 |
| | 4 | 6.4 | 7.98 |
| | 5 | 7.7 | 7.91 |
| | 6 | 7.3 | 7.88 |
| | 7 | 8.5 | 6.94 |
| | 8 | | |
| | 9 | n/d | n/d |
| | 10 | 7.6 | 6.46 |
| | 11 | 7.3 | 6.95 |
| | 12 | 6.2 | 7.45 |
| | 13 | 7.4 | 7.47 |
| | 14 | n/d | n/d |
| | 15 | | |
| | 16 | n/d | n/d |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | 8.5 | 7.43 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jan-11 | 20 | 8.1 | 7.29 |
| | 21 | 8 | 7.08 |
| | 22 | | |
| | 23 | n/d | n/d |
| | 24 | 4.6 | 6.76 |
| | 25 | 5.1 | 7.65 |
| | 26 | 7.3 | 7.56 |
| | 27 | n/d | n/d |
| | 28 | 6 | 7.67 |
| | 29 | | |
| | 30 | n/d | n/d |
| | 31 | 9.6 | 6.71 |
| Feb-11 | 1 | n/d | n/d |
| | 2 | 9.1 | 7.23 |
| | 3 | 6.7 | 6.91 |
| | 4 | 8.1 | 7.02 |
| | 5 | | |
| | 6 | n/d | n/d |
| | 7 | 7 | 6.9 |
| | 8 | 8.4 | 7.27 |
| | 9 | 6.9 | 7.08 |
| | 10 | n/d | n/d |
| | 11 | 6.6 | 7.28 |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | 8.2 | 6.94 |
| | 15 | 8.8 | 7.91 |
| | 16 | 8.6 | 7.56 |
| | 17 | 9.6 | 7.38 |
| | 18 | 10.8 | 7.44 |
| | 19 | | |
| | 20 | | |
| | 21 | 10.3 | 7.5 |
| | 22 | 8.1 | 7.57 |
| | 23 | 8.2 | 7.33 |
| | 24 | 8 | 7.45 |
| | 25 | 10.3 | 7.67 |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | 10.9 | 6.98 |
| Mar-11 | 1 | 9.2 | 7.67 |
| | 2 | 10.2 | 7.45 |
| | 3 | 8.4 | 6.67 |
| | 4 | 10.8 | 7.31 |
| | 5 | | |
| | 6 | n/d | n/d |
| | 7 | 10.5 | 6.47 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Mar-11 | 8 | 11 | 7.03 |
| | 9 | 10.7 | 6.96 |
| | 10 | 11 | 6.71 |
| | 11 | 10.6 | 7.03 |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | 9.4 | 7.25 |
| | 15 | 10.1 | 7.15 |
| | 16 | 11.3 | 7.23 |
| | 17 | 11.4 | 7.51 |
| | 18 | 12 | 7.04 |
| | 19 | | |
| | 20 | n/d | n/d |
| | 21 | 10.9 | 7 |
| | 22 | 12.3 | 6.89 |
| | 23 | 12.7 | 6.94 |
| | 24 | 11.7 | 6.65 |
| | 25 | 11.2 | 6.66 |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | 10.6 | 6.82 |
| | 29 | 10.1 | 6.58 |
| | 30 | 11.1 | 6.88 |
| | 31 | 11.9 | 7.44 |
| Apr-11 | 1 | 10.9 | 7.28 |
| | 2 | | |
| | 3 | n/d | n/d |
| | 4 | 11 | 7.42 |
| | 5 | 13.2 | 7.39 |
| | 6 | 12.6 | 7.4 |
| | 7 | 12.8 | 7.22 |
| | 8 | 12.6 | 7.3 |
| | 9 | | |
| | 10 | n/d | n/d |
| | 11 | 12.8 | 6.33 |
| | 12 | 14.5 | 7.89 |
| | 13 | 13.4 | 7.65 |
| | 14 | 13.5 | 7.3 |
| | 15 | 12.5 | 7.8 |
| | 16 | | |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | 14.3 | 7.03 |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | | |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Apr-11 | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | 16.9 | 7.53 |
| | 27 | 17.1 | 7.03 |
| | 28 | 16.2 | 6.44 |
| | 29 | 15.6 | 6.59 |
| | 30 | | |
| May-11 | 1 | n/d | n/d |
| | 2 | 15.2 | 6.85 |
| | 3 | 15.6 | 6.29 |
| | 4 | 16.9 | 7.01 |
| | 5 | 15.7 | 6.78 |
| | 6 | 15.2 | 6.87 |
| | 7 | | |
| | 8 | n/d | n/d |
| | 9 | 14.7 | 6.67 |
| | 10 | 15.1 | 7.31 |
| | 11 | 15.3 | 7.74 |
| | 12 | 16.6 | 7.45 |
| | 13 | 16.5 | 6.64 |
| | 14 | | |
| | 15 | n/d | n/d |
| | 16 | 16.5 | 7.27 |
| | 17 | 15.9 | 6.32 |
| | 18 | 17.3 | 7 |
| | 19 | 17.6 | 6.69 |
| | 20 | 16.5 | 7.02 |
| | 21 | | |
| | 22 | n/d | n/d |
| | 23 | 16.6 | 6.72 |
| | 24 | 17.9 | 6.87 |
| | 25 | 20 | 7.32 |
| | 26 | 18.5 | 6.9 |
| | 27 | 20.1 | 7.14 |
| | 28 | | |
| | 29 | n/d | n/d |
| | 30 | | |
| | 31 | 18.6 | 6.96 |
| Jun-11 | 1 | 21 | 7.47 |
| | 2 | 19.9 | 7.99 |
| | 3 | 18.2 | 7.55 |
| | 4 | | |
| | 5 | n/d | n/d |
| | 6 | 19.2 | 7.67 |
| | 7 | 19.8 | 7.64 |
| | 8 | 20.3 | 7.55 |
| | 9 | 23.5 | 7.58 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jun-11 | 10 | 21.7 | 7.76 |
| | 11 | | |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | 19.2 | 6.85 |
| | 15 | n/d | n/d |
| | 16 | | |
| | 17 | n/d | n/d |
| | 18 | | |
| | 19 | n/d | n/d |
| | 20 | 19.5 | 6.38 |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | | |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| Jul-11 | 1 | | |
| | 2 | | |
| | 3 | | |
| | 4 | | |
| | 5 | n/d | n/d |
| | 6 | | |
| | 7 | n/d | n/d |
| | 8 | | |
| | 9 | | |
| | 10 | | |
| | 11 | | |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | | |
| | 17 | n/d | n/d |
| | 18 | | |
| | 19 | n/d | n/d |
| | 20 | n/d | n/d |
| | 21 | n/d | n/d |
| | 22 | | |
| | 23 | | |
| | 24 | n/d | n/d |
| | 25 | n/d | n/d |
| | 26 | | |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jul-11 | 27 | n/d | n/d |
| | 28 | | |
| | 29 | | |
| | 30 | | |
| | 31 | n/d | n/d |
| Aug-11 | 1 | 23.9 | 6.87 |
| | 2 | 7.97 | 23.2 |
| | 3 | n/d | n/d |
| | 4 | 23.8 | 7.86 |
| | 5 | n/d | n/d |
| | 6 | | |
| | 7 | n/d | n/d |
| | 8 | 24.3 | 8.09 |
| | 9 | 24.2 | 8.29 |
| | 10 | n/d | n/d |
| | 11 | 23.2 | 8.31 |
| | 12 | 22 | 8.08 |
| | 13 | | |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | | |
| | 17 | 23.4 | 7.46 |
| | 18 | | |
| | 19 | 23.1 | 8.2 |
| | 20 | | |
| | 21 | n/d | n/d |
| | 22 | n/d | n/d |
| | 23 | 22.1 | 8.23 |
| | 24 | 20.4 | 8.32 |
| | 25 | 23.9 | 8.01 |
| | 26 | 23.8 | 8.37 |
| | 27 | | |
| | 28 | n/d | n/d |
| | 29 | 21.6 | 7.92 |
| | 30 | 22.5 | 7.74 |
| | 31 | 22.5 | 8.08 |
| Sep-11 | 1 | 23.2 | 8.17 |
| | 2 | 22.3 | 8.23 |
| | 3 | | |
| | 4 | n/d | n/d |
| | 5 | n/d | n/d |
| | 6 | 23.1 | 8.24 |
| | 7 | 22.5 | 7.29 |
| | 8 | 21.6 | 6.64 |
| | 9 | 22.3 | 6.52 |
| | 10 | | |
| | 11 | n/d | n/d |

# John J Wright Educational Cultural Center pH and Temperature Data January 2009 - July 2012

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Sep-11 | 12 | 21.5 | 8.25 |
| | 13 | 20.5 | 8.79 |
| | 14 | 22.6 | 7.14 |
| | 15 | 22.2 | 7.09 |
| | 16 | 21.2 | 7.28 |
| | 17 | | |
| | 18 | n/d | n/d |
| | 19 | 19.2 | 8.03 |
| | 20 | 20.9 | 7.98 |
| | 21 | 21.1 | 7.95 |
| | 22 | 21.6 | 7.3 |
| | 23 | 21 | 8.48 |
| | 24 | | |
| | 25 | n/d | n/d |
| | 26 | 20.5 | 6.65 |
| | 27 | 21.8 | 7.76 |
| | 28 | 21.7 | 6.73 |
| | 29 | 21.4 | 6.76 |
| | 30 | 21.5 | 6.99 |
| Oct-11 | 1 | | |
| | 2 | n/d | n/d |
| | 3 | 18.4 | 7.91 |
| | 4 | 19 | 7.49 |
| | 5 | 19.2 | 7.08 |
| | 6 | 19.5 | 7.46 |
| | 7 | 18.6 | 7.3 |
| | 8 | | |
| | 9 | n/d | n/d |
| | 10 | 19.7 | 8.01 |
| | 11 | 19.8 | 7.73 |
| | 12 | 20.3 | 7.22 |
| | 13 | 19.2 | 7.13 |
| | 14 | 19.5 | 6.43 |
| | 15 | | |
| | 16 | n/d | n/d |
| | 17 | 18.6 | 7.64 |
| | 18 | 19.2 | 7.68 |
| | 19 | 19.7 | 6.78 |
| | 20 | 18.2 | 6.71 |
| | 21 | 18.4 | 7.42 |
| | 22 | | |
| | 23 | n/d | n/d |
| | 24 | 17.6 | 7.9 |
| | 25 | 16.6 | 7.27 |
| | 26 | 18.2 | 7.4 |
| | 27 | 18.1 | 7.31 |
| | 28 | 15.7 | 8.01 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Oct-11 | 29 | | |
| | 30 | n/d | n/d |
| | 31 | 14.9 | 7.38 |
| Nov-11 | 1 | 14.9 | 7.16 |
| | 2 | 15.6 | 7.65 |
| | 3 | 15.7 | 6.7 |
| | 4 | 15.9 | 6.92 |
| | 5 | | |
| | 6 | n/d | n/d |
| | 7 | 14.9 | 7.51 |
| | 8 | 14.2 | 7.33 |
| | 9 | 15.5 | 7.23 |
| | 10 | 14.5 | 6.45 |
| | 11 | 14.5 | 7.32 |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | 15.6 | 7.61 |
| | 15 | 15.9 | 8.03 |
| | 16 | 16.3 | 7.35 |
| | 17 | 15 | 6.95 |
| | 18 | 14.9 | 7.21 |
| | 19 | | |
| | 20 | n/d | n/d |
| | 21 | 15.6 | 7.76 |
| | 22 | 15.3 | 7.16 |
| | 23 | 15.3 | 6.84 |
| | 24 | | |
| | 25 | n/d | n/d |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | 15.1 | 8.1 |
| | 29 | 15.3 | 7.03 |
| | 30 | 14.5 | 7.28 |
| Dec-11 | 1 | 14 | 7.35 |
| | 2 | 13.3 | 6.93 |
| | 3 | | |
| | 4 | n/d | n/d |
| | 5 | 14.4 | 6.95 |
| | 6 | 14.1 | 6.96 |
| | 7 | 14.4 | 6.57 |
| | 8 | 13.5 | 6.05 |
| | 9 | 13.3 | 7 |
| | 10 | | |
| | 11 | n/d | n/d |
| | 12 | 12.3 | 6.54 |
| | 13 | 12 | 7.56 |
| | 14 | 12.7 | 7.24 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Dec-11 | 15 | 12.4 | 6.84 |
| | 16 | 12.8 | 6.97 |
| | 17 | | |
| | 18 | n/d | n/d |
| | 19 | 11.7 | 6.89 |
| | 20 | 12.2 | 7.15 |
| | 21 | n/d | n/d |
| | 22 | | |
| | 23 | | |
| | 24 | | |
| | 25 | n/d | n/d |
| | 26 | n/d | n/d |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| | 31 | | |
| Jan-12 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | 10.7 | 6.79 |
| | 4 | 10.5 | 8.87 |
| | 5 | 10.2 | 6.62 |
| | 6 | 10.7 | 7.46 |
| | 7 | | |
| | 8 | n/d | n/d |
| | 9 | 10.7 | 6.57 |
| | 10 | 10.3 | 7.53 |
| | 11 | 10.1 | 7.4 |
| | 12 | 11.1 | 6.47 |
| | 13 | 11.1 | 6.79 |
| | 14 | | |
| | 15 | n/d | n/d |
| | 16 | | |
| | 17 | 10.4 | 7.36 |
| | 18 | 10.7 | 7.19 |
| | 19 | 10.2 | 7.1 |
| | 20 | 10.2 | 7.19 |
| | 21 | | |
| | 22 | n/d | n/d |
| | 23 | 9.4 | 6.06 |
| | 24 | 10.3 | 7.24 |
| | 25 | 10.3 | 7.25 |
| | 26 | 10.7 | 7.06 |
| | 27 | 11.5 | 7.07 |
| | 28 | | |
| | 29 | n/d | n/d |
| | 30 | 9.8 | 7.14 |

# John J Wright Educational Cultural Center pH and Temperature Data January 2009 - July 2012

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jan-12 | 31 | 11 | 7.17 |
| Feb-12 | 1 | 11.5 | 7.1 |
| | 2 | 12 | 6.59 |
| | 3 | 11.5 | 6.89 |
| | 4 | | |
| | 5 | n/d | n/d |
| | 6 | 10.3 | 6.46 |
| | 7 | 10.3 | 8.07 |
| | 8 | 10.9 | 6.28 |
| | 9 | 10.3 | 7.15 |
| | 10 | 11.8 | 7.45 |
| | 11 | | |
| | 12 | n/d | n/d |
| | 13 | 9.2 | 6.96 |
| | 14 | 9.8 | 7.56 |
| | 15 | 10.9 | 6.94 |
| | 16 | 10.4 | 8.51 |
| | 17 | 11.4 | 6.81 |
| | 18 | | |
| | 19 | n/d | n/d |
| | 20 | | |
| | 21 | 9.9 | 6.41 |
| | 22 | 11.3 | 7.69 |
| | 23 | 10.5 | 7.12 |
| | 24 | 11.2 | 7.19 |
| | 25 | | |
| | 26 | n/d | n/d |
| | 27 | 10.1 | 6.63 |
| | 28 | 10.2 | 6.72 |
| | 29 | 11 | 6.98 |
| Mar-12 | 1 | 11.8 | 6.35 |
| | 2 | 11.9 | 6.59 |
| | 3 | | |
| | 4 | n/d | n/d |
| | 5 | 10.4 | 6.25 |
| | 6 | 11.8 | 6.88 |
| | 7 | 12 | 6.82 |
| | 8 | 12.3 | 7 |
| | 9 | 12.2 | 7.04 |
| | 10 | | |
| | 11 | n/d | n/d |
| | 12 | 11 | 7 |
| | 13 | 13.2 | 6.89 |
| | 14 | 13.6 | 7.03 |
| | 15 | 13.6 | 7.1 |
| | 16 | 13.6 | 7.01 |
| | 17 | | |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Mar-12 | 18 | n/d | n/d |
| | 19 | 13.3 | 7.07 |
| | 20 | 14.5 | 7.3 |
| | 21 | 15.7 | 7.38 |
| | 22 | 15.7 | 7.35 |
| | 23 | 15.8 | 7.4 |
| | 24 | | |
| | 25 | n/d | n/d |
| | 26 | 14.7 | 7.33 |
| | 27 | 14.5 | 7.19 |
| | 28 | 15.1 | 7.08 |
| | 29 | 15.3 | 7.17 |
| | 30 | 15.3 | 6.96 |
| | 31 | | |
| Apr-12 | 1 | n/d | n/d |
| | 2 | 14.9 | 7.72 |
| | 3 | 14.6 | 7.39 |
| | 4 | 16.1 | 8.05 |
| | 5 | 15.1 | 6.99 |
| | 6 | 13.6 | 8.17 |
| | 7 | | |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | n/d | n/d |
| | 11 | n/d | n/d |
| | 12 | n/d | n/d |
| | 13 | n/d | n/d |
| | 14 | | |
| | 15 | n/d | n/d |
| | 16 | 15.1 | 7.52 |
| | 17 | 16.1 | 8.13 |
| | 18 | 15.1 | 8.15 |
| | 19 | 15.8 | 7.67 |
| | 20 | 16.2 | 7.69 |
| | 21 | | |
| | 22 | n/d | n/d |
| | 23 | 15.1 | 7.52 |
| | 24 | 16.1 | 8.13 |
| | 25 | 15.1 | 8.15 |
| | 26 | 15.8 | 7.67 |
| | 27 | 16.2 | 7.69 |
| | 28 | | |
| | 29 | n/d | n/d |
| | 30 | 15.5 | 7.41 |
| May-12 | 1 | 16.1 | 7.73 |
| | 2 | 17.7 | 7.48 |
| | 3 | 17.9 | 7.29 |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| May-12 | 4 | 19.1 | 7.2 |
| | 5 | | |
| | 6 | n/d | n/d |
| | 7 | 16.8 | 7.76 |
| | 8 | 16.9 | 8.15 |
| | 9 | 19.2 | 7.23 |
| | 10 | 18.8 | 7.38 |
| | 11 | 19.3 | 7.34 |
| | 12 | | |
| | 13 | n/d | n/d |
| | 14 | 18.4 | 7.78 |
| | 15 | 18 | 8.17 |
| | 16 | 19 | 7.24 |
| | 17 | 19.2 | 7 |
| | 18 | 18 | 7.33 |
| | 19 | | |
| | 20 | n/d | n/d |
| | 21 | 18.5 | 8.81 |
| | 22 | 18.1 | 6.57 |
| | 23 | 18.6 | 7 |
| | 24 | 19.9 | 7.13 |
| | 25 | 19.3 | 7.54 |
| | 26 | | |
| | 27 | n/d | n/d |
| | 28 | n/d | n/d |
| | 29 | 19.2 | 8.76 |
| | 30 | 19.7 | 7.07 |
| | 31 | 20.2 | 7.29 |
| Jun-12 | 1 | 20.7 | 7.31 |
| | 2 | | |
| | 3 | n/d | n/d |
| | 4 | 19 | 8.05 |
| | 5 | 18.5 | 7.34 |
| | 6 | 19.1 | 8.48 |
| | 7 | 20.3 | 6.9 |
| | 8 | 18.7 | 7.05 |
| | 9 | | |
| | 10 | n/d | n/d |
| | 11 | 19.8 | 7.06 |
| | 12 | 19.4 | 7.18 |
| | 13 | n/d | n/d |
| | 14 | n/d | n/d |
| | 15 | n/d | n/d |
| | 16 | | |
| | 17 | n/d | n/d |
| | 18 | n/d | n/d |
| | 19 | n/d | n/d |

| Month/ Year | Day | Temp °C | pH |
|---|---|---|---|
| Jun-12 | 20 | 18.9 | 7.35 |
| | 21 | 22.1 | 8.41 |
| | 22 | n/d | n/d |
| | 23 | | |
| | 24 | n/d | n/d |
| | 25 | 20.3 | 7.57 |
| | 26 | 18.5 | 8.28 |
| | 27 | 18.5 | 7.58 |
| | 28 | 22.4 | 8.08 |
| | 29 | n/d | n/d |
| | 30 | | |
| Jul-12 | 1 | n/d | n/d |
| | 2 | n/d | n/d |
| | 3 | 24.7 | 7.3 |
| | 4 | | |
| | 5 | 25.2 | 8.38 |
| | 6 | n/d | n/d |
| | 7 | | |
| | 8 | n/d | n/d |
| | 9 | n/d | n/d |
| | 10 | 24.1 | 7.86 |
| | 11 | 23.5 | 8.16 |
| | 12 | 23.2 | 7.71 |
| | 13 | 24.7 | 8.28 |
| | 14 | | |
| | 15 | n/d | n/d |
| | 16 | 23.1 | 8.49 |
| | 17 | 23.2 | 8.36 |
| | 18 | 23.3 | 8.44 |
| | 19 | 25.7 | 8.74 |
| | 20 | | |
| | 21 | | |
| | 22 | n/d | n/d |
| | 23 | n/d | n/d |
| | 24 | n/d | n/d |
| | 25 | | |
| | 26 | 23.5 | 7.89 |
| | 27 | n/d | n/d |
| | 28 | | |
| | 29 | n/d | n/d |
| | 30 | n/d | n/d |
| | 31 | n/d | n/d |

pH 90th percentile = 8.1

Temperature 90th percentile = 22.5

JJ Wright Effluent pH + Temperature
1/1/1999 - 1/31/2002

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| COUNT | DATE | pH | pH Sort | DATE | TEMP C | Temp Sort |
|---|---|---|---|---|---|---|
| 1 | 1/3/1999 | 7.0 | 6.0 | 1/3/1999 | 6 | 3 |
| 2 | 1/4/1999 | 7.1 | 6.1 | 1/4/1999 | 7 | 4 |
| 3 | 1/5/1999 | 7.6 | 6.1 | 1/5/1999 | 5 | 4 |
| 4 | 1/6/1999 | 7.4 | 6.1 | 1/6/1999 | 6 | 4 |
| 5 | 1/7/1999 | 7.1 | 6.2 | 1/7/1999 | 7 | 5 |
| 6 | 1/8/1999 | 8.6 | 6.2 | 1/8/1999 | 5 | 5 |
| 7 | 1/9/1999 | 8.9 | 6.2 | 1/9/1999 | 7 | 5 |
| 8 | 1/10/1999 | 8.7 | 6.2 | 1/10/1999 | 6 | 5 |
| 9 | 1/11/1999 | 8.3 | 6.2 | 1/11/1999 | 3 | 5 |
| 10 | 1/12/1999 | 7.2 | 6.2 | 1/12/1999 | 6 | 5 |
| 11 | 1/13/1999 | 7.7 | 6.2 | 1/13/1999 | 8 | 5 |
| 12 | 1/14/1999 | 7.4 | 6.3 | 1/14/1999 | 8 | 5 |
| 13 | 1/15/1999 | 7.5 | 6.3 | 1/15/1999 | 7 | 5 |
| 14 | 1/16/1999 | 8.6 | 6.4 | 1/16/1999 | 6 | 5 |
| 15 | 1/17/1999 | 8.6 | 6.4 | 1/17/1999 | 7 | 6 |
| 16 | 1/18/1999 | 8.2 | 6.4 | 1/18/1999 | 10 | 6 |
| 17 | 1/19/1999 | 7.1 | 6.4 | 1/19/1999 | 8 | 6 |
| 18 | 1/21/1999 | 6.9 | 6.5 | 1/21/1999 | 8 | 6 |
| 19 | 1/22/1999 | 7.9 | 6.5 | 1/22/1999 | 9 | 6 |
| 20 | 1/23/1999 | 7.7 | 6.5 | 1/23/1999 | 9 | 6 |
| 21 | 1/24/1999 | 6.9 | 6.5 | 1/24/1999 | 8 | 6 |
| 22 | 1/25/1999 | 6.6 | 6.5 | 1/25/1999 | 10 | 6 |
| 23 | 1/26/1999 | 6.8 | 6.5 | 1/26/1999 | 10 | 6 |
| 24 | 1/27/1999 | 7.5 | 6.5 | 1/27/1999 | 10 | 6 |
| 25 | 1/28/1999 | 7.7 | 6.5 | 1/28/1999 | 11 | 6 |
| 26 | 1/29/1999 | 6.8 | 6.5 | 1/29/1999 | 10 | 6 |
| 27 | 1/30/1999 | 7.8 | 6.5 | 1/30/1999 | 8 | 6 |
| 28 | 1/31/1999 | 8.7 | 6.6 | 1/31/1999 | 6 | 6 |
| 29 | 2/1/1999 | 8.0 | 6.6 | 2/1/1999 | 5 | 6 |
| 30 | 2/2/1999 | 7.9 | 6.6 | 2/2/1999 | 9 | 6 |
| 31 | 2/3/1999 | 7.4 | 6.6 | 2/3/1999 | 10 | 6 |
| 32 | 2/4/1999 | 7.3 | 6.6 | 2/4/1999 | 10 | 6 |
| 33 | 2/5/1999 | 7.5 | 6.6 | 2/5/1999 | 9 | 6 |
| 34 | 2/6/1999 | 7.7 | 6.6 | 2/6/1999 | 9 | 6 |
| 35 | 2/7/1999 | 8.8 | 6.6 | 2/7/1999 | 9 | 6 |
| 36 | 2/8/1999 | 7.3 | 6.6 | 2/8/1999 | 10 | 6 |
| 37 | 2/9/1999 | 7.3 | 6.6 | 2/9/1999 | 9 | 7 |
| 38 | 2/10/1999 | 7.4 | 6.6 | 2/10/1999 | 9 | 7 |
| 39 | 2/11/1999 | 7.7 | 6.6 | 2/11/1999 | 9 | 7 |
| 40 | 2/12/1999 | 7.8 | 6.6 | 2/12/1999 | 12 | 7 |
| 41 | 2/13/1999 | 7.1 | 6.6 | 2/13/1999 | 8 | 7 |
| 42 | 2/14/1999 | 8.4 | 6.7 | 2/14/1999 | 7 | 7 |
| 43 | 2/15/1999 | 8.1 | 6.7 | 2/15/1999 | 6 | 7 |
| 44 | 2/16/1999 | 6.8 | 6.7 | 2/16/1999 | 9 | 7 |
| 45 | 2/17/1999 | 6.9 | 6.7 | 2/17/1999 | 10 | 7 |
| 46 | 2/18/1999 | 6.2 | 6.7 | 2/18/1999 | 10 | 7 |
| 47 | 2/19/1999 | 6.9 | 6.7 | 2/19/1999 | 9 | 7 |
| 48 | 2/20/1999 | 6.9 | 6.7 | 2/20/1999 | 7 | 7 |
| 49 | 2/21/1999 | 8.3 | 6.7 | 2/21/1999 | 6 | 7 |
| 50 | 2/22/1999 | 7.4 | 6.7 | 2/22/1999 | 7 | 7 |
| 51 | 2/23/1999 | 6.1 | 6.7 | 2/23/1999 | 9 | 7 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 52 | 2/24/1999 | 7.0 | 6.7 | 2/24/1999 | 8 | 7 |
| 53 | 2/25/1999 | 7.7 | 6.7 | 2/25/1999 | 8 | 7 |
| 54 | 2/26/1999 | 7.4 | 6.7 | 2/26/1999 | 8 | 7 |
| 55 | 2/27/1999 | 7.6 | 6.8 | 2/27/1999 | 9 | 7 |
| 56 | 2/28/1999 | 8.2 | 6.8 | 2/28/1999 | 9 | 7 |
| 57 | 3/1/1999 | 7.0 | 6.8 | 3/1/1999 | 9 | 7 |
| 58 | 3/2/1999 | 6.6 | 6.8 | 3/2/1999 | 9 | 7 |
| 59 | 3/3/1999 | 8.2 | 6.8 | 3/3/1999 | 10 | 7 |
| 60 | 3/4/1999 | 6.2 | 6.8 | 3/4/1999 | 10 | 7 |
| 61 | 3/5/1999 | 7.0 | 6.8 | 3/5/1999 | 9 | 7 |
| 62 | 3/6/1999 | 7.5 | 6.8 | 3/6/1999 | 9 | 7 |
| 63 | 3/7/1999 | 8.2 | 6.8 | 3/7/1999 | 8 | 7 |
| 64 | 3/8/1999 | 8.4 | 6.8 | 3/8/1999 | 6 | 7 |
| 65 | 3/9/1999 | 7.3 | 6.8 | 3/9/1999 | 7 | 7 |
| 66 | 3/10/1999 | 8.3 | 6.8 | 3/10/1999 | 8 | 7 |
| 67 | 3/11/1999 | 6.6 | 6.8 | 3/11/1999 | 8 | 7 |
| 68 | 3/12/1999 | 6.7 | 6.8 | 3/12/1999 | 8 | 8 |
| 69 | 3/13/1999 | 6.8 | 6.8 | 3/13/1999 | 8 | 8 |
| 70 | 3/14/1999 | 8.4 | 6.8 | 3/14/1999 | 8 | 8 |
| 71 | 3/15/1999 | 6.2 | 6.8 | 3/15/1999 | 9 | 8 |
| 72 | 3/16/1999 | 6.5 | 6.8 | 3/16/1999 | 9 | 8 |
| 73 | 3/17/1999 | 7.0 | 6.8 | 3/17/1999 | 9 | 8 |
| 74 | 3/18/1999 | 7.6 | 6.8 | 3/18/1999 | 10 | 8 |
| 75 | 3/19/1999 | 8.3 | 6.8 | 3/19/1999 | 10 | 8 |
| 76 | 3/20/1999 | 7.1 | 6.8 | 3/20/1999 | 8 | 8 |
| 77 | 3/21/1999 | 8.2 | 6.8 | 3/21/1999 | 10 | 8 |
| 78 | 3/22/1999 | 6.2 | 6.9 | 3/22/1999 | 10 | 8 |
| 79 | 3/23/1999 | 6.7 | 6.9 | 3/23/1999 | 11 | 8 |
| 80 | 3/24/1999 | 6.7 | 6.9 | 3/24/1999 | 11 | 8 |
| 81 | 3/25/1999 | 7.6 | 6.9 | 3/25/1999 | 11 | 8 |
| 82 | 3/26/1999 | 8.1 | 6.9 | 3/26/1999 | 10 | 8 |
| 83 | 3/27/1999 | 7.3 | 6.9 | 3/27/1999 | 10 | 8 |
| 84 | 3/28/1999 | 7.4 | 6.9 | 3/28/1999 | 10 | 8 |
| 85 | 3/29/1999 | 8.9 | 6.9 | 3/29/1999 | 11 | 8 |
| 86 | 3/30/1999 | 6.5 | 6.9 | 3/30/1999 | 13 | 8 |
| 87 | 3/31/1999 | 7.9 | 6.9 | 3/31/1999 | 12 | 8 |
| 88 | 4/1/1999 | 6.7 | 6.9 | 4/1/1999 | 14 | 8 |
| 89 | 4/2/1999 | 7.9 | 6.9 | 4/2/1999 | 14 | 8 |
| 90 | 4/3/1999 | 7.8 | 6.9 | 4/3/1999 | 13 | 8 |
| 91 | 4/4/1999 | 8.3 | 6.9 | 4/4/1999 | 14 | 8 |
| 92 | 4/5/1999 | 8.3 | 6.9 | 4/5/1999 | 13 | 8 |
| 93 | 4/6/1999 | 8.4 | 6.9 | 4/6/1999 | 14 | 8 |
| 94 | 4/7/1999 | 8.0 | 6.9 | 4/7/1999 | 14 | 8 |
| 95 | 4/8/1999 | 7.9 | 6.9 | 4/8/1999 | 15 | 8 |
| 96 | 4/9/1999 | 7.9 | 6.9 | 4/9/1999 | 15 | 8 |
| 97 | 4/10/1999 | 7.6 | 6.9 | 4/10/1999 | 13 | 8 |
| 98 | 4/11/1999 | 7.8 | 6.9 | 4/11/1999 | 12 | 8 |
| 99 | 4/12/1999 | 7.7 | 6.9 | 4/12/1999 | 14 | 8 |
| 100 | 4/13/1999 | 7.2 | 6.9 | 4/13/1999 | 13 | 8 |
| 101 | 4/14/1999 | 7.3 | 6.9 | 4/14/1999 | 13 | 8 |
| 102 | 4/15/1999 | 7.7 | 6.9 | 4/15/1999 | 13 | 8 |
| 103 | 4/16/1999 | 7.6 | 6.9 | 4/16/1999 | 13 | 8 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 104 | 4/17/1999 | 8.0 | 6.9 | 4/17/1999 | 13 | 8 |
| 105 | 4/18/1999 | 8.3 | 6.9 | 4/18/1999 | 11 | 8 |
| 106 | 4/19/1999 | 7.4 | 6.9 | 4/19/1999 | 13 | 8 |
| 107 | 4/20/1999 | 7.3 | 6.9 | 4/20/1999 | 15 | 8 |
| 108 | 4/21/1999 | 7.5 | 6.9 | 4/21/1999 | 13 | 8 |
| 109 | 4/22/1999 | 7.3 | 7.0 | 4/22/1999 | 14 | 8 |
| 110 | 4/23/1999 | 8.2 | 7.0 | 4/23/1999 | 15 | 8 |
| 111 | 4/24/1999 | 7.7 | 7.0 | 4/24/1999 | 13 | 8 |
| 112 | 4/25/1999 | 7.7 | 7.0 | 4/25/1999 | 12 | 8 |
| 113 | 4/26/1999 | 7.2 | 7.0 | 4/26/1999 | 14 | 8 |
| 114 | 4/27/1999 | 7.8 | 7.0 | 4/27/1999 | 15 | 8 |
| 115 | 4/28/1999 | 8.0 | 7.0 | 4/28/1999 | 15 | 8 |
| 116 | 4/29/1999 | 7.6 | 7.0 | 4/29/1999 | 15 | 8 |
| 117 | 4/30/1999 | 7.7 | 7.0 | 4/30/1999 | 14 | 8 |
| 118 | 5/1/1999 | 8.1 | 7.0 | 5/1/1999 | 13 | 8 |
| 119 | 5/2/1999 | 7.9 | 7.0 | 5/2/1999 | 12 | 8 |
| 120 | 5/3/1999 | 7.8 | 7.0 | 5/3/1999 | 15 | 8 |
| 121 | 5/4/1999 | 7.2 | 7.0 | 5/4/1999 | 18 | 8 |
| 122 | 5/5/1999 | 7.3 | 7.0 | 5/5/1999 | 16 | 8 |
| 123 | 5/6/1999 | 7.0 | 7.0 | 5/6/1999 | 18 | 9 |
| 124 | 5/7/1999 | 8.0 | 7.0 | 5/7/1999 | 18 | 9 |
| 125 | 5/8/1999 | 8.1 | 7.0 | 5/8/1999 | 18 | 9 |
| 126 | 5/9/1999 | 8.3 | 7.0 | 5/9/1999 | 17 | 9 |
| 127 | 5/10/1999 | 7.0 | 7.0 | 5/10/1999 | 18 | 9 |
| 128 | 5/11/1999 | 6.7 | 7.0 | 5/11/1999 | 18 | 9 |
| 129 | 5/12/1999 | 7.3 | 7.0 | 5/12/1999 | 19 | 9 |
| 130 | 5/13/1999 | 7.9 | 7.0 | 5/13/1999 | 18 | 9 |
| 131 | 5/14/1999 | 8.2 | 7.0 | 5/14/1999 | 17 | 9 |
| 132 | 5/15/1999 | 8.1 | 7.0 | 5/15/1999 | 15 | 9 |
| 133 | 5/16/1999 | 8.2 | 7.0 | 5/16/1999 | 15 | 9 |
| 134 | 5/17/1999 | 7.3 | 7.0 | 5/17/1999 | 16 | 9 |
| 135 | 5/18/1999 | 7.1 | 7.0 | 5/18/1999 | 18 | 9 |
| 136 | 5/19/1999 | 7.1 | 7.0 | 5/19/1999 | 19 | 9 |
| 137 | 5/20/1999 | 7.7 | 7.0 | 5/20/1999 | 18 | 9 |
| 138 | 5/21/1999 | 8.1 | 7.0 | 5/21/1999 | 17 | 9 |
| 139 | 5/22/1999 | 8.2 | 7.0 | 5/22/1999 | 16 | 9 |
| 140 | 5/23/1999 | 8.3 | 7.0 | 5/23/1999 | 19 | 9 |
| 141 | 5/24/1999 | 7.9 | 7.0 | 5/24/1999 | 20 | 9 |
| 142 | 5/25/1999 | 7.9 | 7.0 | 5/25/1999 | 18 | 9 |
| 143 | 5/26/1999 | 7.8 | 7.0 | 5/26/1999 | 19 | 9 |
| 144 | 5/27/1999 | 7.4 | 7.0 | 5/27/1999 | 19 | 9 |
| 145 | 5/28/1999 | 8.0 | 7.0 | 5/28/1999 | 17 | 9 |
| 146 | 5/29/1999 | 8.0 | 7.0 | 5/29/1999 | 17 | 9 |
| 147 | 5/30/1999 | 8.2 | 7.0 | 5/30/1999 | 17 | 9 |
| 148 | 5/31/1999 | 8.3 | 7.0 | 5/31/1999 | 18 | 9 |
| 149 | 6/1/1999 | 8.2 | 7.0 | 6/1/1999 | 21 | 9 |
| 150 | 6/2/1999 | 7.8 | 7.0 | 6/2/1999 | 22 | 9 |
| 151 | 6/3/1999 | 6.9 | 7.0 | 6/3/1999 | 22 | 9 |
| 152 | 6/4/1999 | 7.8 | 7.0 | 6/4/1999 | 20 | 9 |
| 153 | 6/5/1999 | 8.4 | 7.0 | 6/5/1999 | 18 | 9 |
| 154 | 6/6/1999 | 8.3 | 7.0 | 6/6/1999 | 18 | 9 |
| 155 | 6/7/1999 | 8.1 | 7.0 | 6/7/1999 | 20 | 9 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 156 | 6/8/1999 | 7.2 | 7.0 | 6/8/1999 | 22 | 9 |
| 157 | 6/9/1999 | 7.2 | 7.0 | 6/9/1999 | 23 | 9 |
| 158 | 6/10/1999 | 7.4 | 7.1 | 6/10/1999 | 23 | 9 |
| 159 | 6/11/1999 | 7.9 | 7.1 | 6/11/1999 | 22 | 9 |
| 160 | 6/12/1999 | 8.3 | 7.1 | 6/12/1999 | 20 | 9 |
| 161 | 6/13/1999 | 8.4 | 7.1 | 6/13/1999 | 21 | 9 |
| 162 | 6/14/1999 | 7.6 | 7.1 | 6/14/1999 | 22 | 9 |
| 163 | 6/15/1999 | 7.4 | 7.1 | 6/15/1999 | 22 | 9 |
| 164 | 6/16/1999 | 7.2 | 7.1 | 6/16/1999 | 22 | 9 |
| 165 | 6/17/1999 | 8.1 | 7.1 | 6/17/1999 | 21 | 9 |
| 166 | 6/18/1999 | 8.0 | 7.1 | 6/18/1999 | 18 | 9 |
| 167 | 6/19/1999 | 8.2 | 7.1 | 6/19/1999 | 17 | 9 |
| 168 | 6/20/1999 | 8.5 | 7.1 | 6/20/1999 | 19 | 9 |
| 169 | 6/25/1999 | 8.0 | 7.1 | 6/25/1999 | 21 | 9 |
| 170 | 6/30/1999 | 7.3 | 7.1 | 6/30/1999 | 23 | 9 |
| 171 | 7/12/1999 | 7.7 | 7.1 | 7/12/1999 | 21 | 9 |
| 172 | 7/13/1999 | 7.9 | 7.1 | 7/13/1999 | 22 | 9 |
| 173 | 7/16/1999 | 8.4 | 7.1 | 7/16/1999 | 22 | 9 |
| 174 | 8/28/1999 | 8.0 | 7.1 | 8/28/1999 | 22 | 9 |
| 175 | 9/5/1999 | 8.8 | 7.1 | 9/5/1999 | 24 | 9 |
| 176 | 9/6/1999 | 7.5 | 7.1 | 9/6/1999 | 23 | 9 |
| 177 | 9/7/1999 | 7.6 | 7.1 | 9/7/1999 | 24 | 10 |
| 178 | 9/8/1999 | 7.1 | 7.1 | 9/8/1999 | 23 | 10 |
| 179 | 9/9/1999 | 7.3 | 7.1 | 9/9/1999 | 25 | 10 |
| 180 | 9/10/1999 | 7.6 | 7.1 | 9/10/1999 | 23 | 10 |
| 181 | 9/11/1999 | 7.6 | 7.1 | 9/11/1999 | 21 | 10 |
| 182 | 9/12/1999 | 7.9 | 7.1 | 9/12/1999 | 20 | 10 |
| 183 | 9/13/1999 | 8.3 | 7.1 | 9/13/1999 | 20 | 10 |
| 184 | 9/14/1999 | 7.2 | 7.1 | 9/14/1999 | 23 | 10 |
| 185 | 9/15/1999 | 7.1 | 7.1 | 9/15/1999 | 24 | 10 |
| 186 | 9/16/1999 | 6.2 | 7.1 | 9/16/1999 | 24 | 10 |
| 187 | 9/17/1999 | 7.5 | 7.1 | 9/17/1999 | 22 | 10 |
| 188 | 9/18/1999 | 7.6 | 7.1 | 9/18/1999 | 19 | 10 |
| 189 | 9/19/1999 | 7.4 | 7.1 | 9/19/1999 | 19 | 10 |
| 190 | 9/20/1999 | 7.5 | 7.1 | 9/20/1999 | 22 | 10 |
| 191 | 9/21/1999 | 7.9 | 7.1 | 9/21/1999 | 21 | 10 |
| 192 | 9/22/1999 | 8.2 | 7.1 | 9/22/1999 | 19 | 10 |
| 193 | 9/23/1999 | 8.2 | 7.1 | 9/23/1999 | 18 | 10 |
| 194 | 9/24/1999 | 8.0 | 7.1 | 9/24/1999 | 18 | 10 |
| 195 | 9/25/1999 | 7.2 | 7.1 | 9/25/1999 | 22 | 10 |
| 196 | 9/26/1999 | 7.7 | 7.1 | 9/26/1999 | 21 | 10 |
| 197 | 9/27/1999 | 7.1 | 7.1 | 9/27/1999 | 24 | 10 |
| 198 | 9/28/1999 | 7.2 | 7.1 | 9/28/1999 | 24 | 10 |
| 199 | 9/29/1999 | 7.0 | 7.1 | 9/29/1999 | 23 | 10 |
| 200 | 9/30/1999 | 6.6 | 7.1 | 9/30/1999 | 23 | 10 |
| 201 | 10/1/1999 | 7.1 | 7.2 | 10/1/1999 | 22 | 10 |
| 202 | 10/2/1999 | 7.4 | 7.2 | 10/2/1999 | 20 | 10 |
| 203 | 10/3/1999 | 7.7 | 7.2 | 10/3/1999 | 21 | 10 |
| 204 | 10/4/1999 | 7.5 | 7.2 | 10/4/1999 | 22 | 10 |
| 205 | 10/5/1999 | 6.9 | 7.2 | 10/5/1999 | 22 | 10 |
| 206 | 10/6/1999 | 7.4 | 7.2 | 10/6/1999 | 21 | 10 |
| 207 | 10/7/1999 | 7.3 | 7.2 | 10/7/1999 | 21 | 10 |



Attachment 7

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 208 | 10/8/1999 | 7.5 | 7.2 | 10/8/1999 | 22 | 10 |
| 209 | 10/9/1999 | 7.8 | 7.2 | 10/9/1999 | 21 | 10 |
| 210 | 10/10/1999 | 7.7 | 7.2 | 10/10/1999 | 21 | 10 |
| 211 | 10/11/1999 | 7.8 | 7.2 | 10/11/1999 | 21 | 10 |
| 212 | 10/12/1999 | 7.4 | 7.2 | 10/12/1999 | 20 | 10 |
| 213 | 10/13/1999 | 8.2 | 7.2 | 10/13/1999 | 18 | 10 |
| 214 | 10/14/1999 | 7.2 | 7.2 | 10/14/1999 | 20 | 10 |
| 215 | 10/15/1999 | 8.1 | 7.2 | 10/15/1999 | 19 | 10 |
| 216 | 10/16/1999 | 8.3 | 7.2 | 10/16/1999 | 17 | 10 |
| 217 | 10/17/1999 | 8.3 | 7.2 | 10/17/1999 | 19 | 10 |
| 218 | 10/18/1999 | 8.3 | 7.2 | 10/18/1999 | 19 | 10 |
| 219 | 10/19/1999 | 7.0 | 7.2 | 10/19/1999 | 19 | 10 |
| 220 | 10/20/1999 | 7.8 | 7.2 | 10/20/1999 | 18 | 10 |
| 221 | 10/21/1999 | 7.6 | 7.2 | 10/21/1999 | 17 | 10 |
| 222 | 10/22/1999 | 7.4 | 7.2 | 10/22/1999 | 17 | 10 |
| 223 | 10/23/1999 | 7.7 | 7.2 | 10/23/1999 | 16 | 10 |
| 224 | 10/24/1999 | 7.4 | 7.2 | 10/24/1999 | 16 | 10 |
| 225 | 10/25/1999 | 8.3 | 7.2 | 10/25/1999 | 13 | 10 |
| 226 | 10/26/1999 | 7.9 | 7.2 | 10/26/1999 | 15 | 10 |
| 227 | 10/27/1999 | 7.7 | 7.2 | 10/27/1999 | 16 | 10 |
| 228 | 10/28/1999 | 7.4 | 7.2 | 10/28/1999 | 15 | 10 |
| 229 | 10/29/1999 | 7.7 | 7.2 | 10/29/1999 | 15 | 10 |
| 230 | 10/30/1999 | 7.7 | 7.2 | 10/30/1999 | 16 | 10 |
| 231 | 10/31/1999 | 8.5 | 7.2 | 10/31/1999 | 18 | 10 |
| 232 | 11/1/1999 | 7.2 | 7.2 | 11/1/1999 | 16 | 10 |
| 233 | 11/2/1999 | 8.0 | 7.2 | 11/2/1999 | 17 | 10 |
| 234 | 11/3/1999 | 7.3 | 7.2 | 11/3/1999 | 15 | 10 |
| 235 | 11/4/1999 | 7.6 | 7.2 | 11/4/1999 | 14 | 10 |
| 236 | 11/5/1999 | 7.5 | 7.2 | 11/5/1999 | 15 | 10 |
| 237 | 11/6/1999 | 7.6 | 7.2 | 11/6/1999 | 15 | 10 |
| 238 | 11/7/1999 | 8.1 | 7.2 | 11/7/1999 | 14 | 10 |
| 239 | 11/8/1999 | 7.6 | 7.2 | 11/8/1999 | 11 | 10 |
| 240 | 11/9/1999 | 7.8 | 7.2 | 11/9/1999 | 14 | 10 |
| 241 | 11/10/1999 | 7.2 | 7.2 | 11/10/1999 | 16 | 10 |
| 242 | 11/11/1999 | 8.0 | 7.2 | 11/11/1999 | 16 | 11 |
| 243 | 11/12/1999 | 8.1 | 7.2 | 11/12/1999 | 14 | 11 |
| 244 | 11/13/1999 | 7.7 | 7.2 | 11/13/1999 | 14 | 11 |
| 245 | 11/14/1999 | 8.1 | 7.2 | 11/14/1999 | 14 | 11 |
| 246 | 11/15/1999 | 8.0 | 7.2 | 11/15/1999 | 13 | 11 |
| 247 | 11/16/1999 | 7.2 | 7.2 | 11/16/1999 | 13 | 11 |
| 248 | 11/17/1999 | 7.6 | 7.2 | 11/17/1999 | 12 | 11 |
| 249 | 11/18/1999 | 7.6 | 7.2 | 11/18/1999 | 11 | 11 |
| 250 | 11/19/1999 | 7.9 | 7.2 | 11/19/1999 | 11 | 11 |
| 251 | 11/20/1999 | 7.8 | 7.2 | 11/20/1999 | 14 | 11 |
| 252 | 11/21/1999 | 8.0 | 7.2 | 11/21/1999 | 13 | 11 |
| 253 | 11/22/1999 | 8.0 | 7.2 | 11/22/1999 | 15 | 11 |
| 254 | 11/23/1999 | 7.4 | 7.2 | 11/23/1999 | 16 | 11 |
| 255 | 11/24/1999 | 7.3 | 7.2 | 11/24/1999 | 16 | 11 |
| 256 | 11/25/1999 | 8.1 | 7.2 | 11/25/1999 | 16 | 11 |
| 257 | 11/26/1999 | 7.6 | 7.2 | 11/26/1999 | 16 | 11 |
| 258 | 11/27/1999 | 6.5 | 7.2 | 11/27/1999 | 16 | 11 |
| 259 | 11/28/1999 | 7.6 | 7.2 | 11/28/1999 | 13 | 11 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 260 | 11/29/1999 | 7.6 | 7.2 | 11/29/1999 | 12 | 11 |
| 261 | 11/30/1999 | 7.5 | 7.2 | 11/30/1999 | 12 | 11 |
| 262 | 12/1/1999 | 8.0 | 7.2 | 12/1/1999 | 11 | 11 |
| 263 | 12/2/1999 | 7.2 | 7.2 | 12/2/1999 | 10 | 11 |
| 264 | 12/3/1999 | 7.1 | 7.3 | 12/3/1999 | 11 | 11 |
| 265 | 12/4/1999 | 7.7 | 7.3 | 12/4/1999 | 12 | 11 |
| 266 | 12/5/1999 | 7.9 | 7.3 | 12/5/1999 | 13 | 11 |
| 267 | 12/6/1999 | 8.0 | 7.3 | 12/6/1999 | 16 | 11 |
| 268 | 12/7/1999 | 7.2 | 7.3 | 12/7/1999 | 12 | 11 |
| 269 | 12/8/1999 | 7.6 | 7.3 | 12/8/1999 | 11 | 11 |
| 270 | 12/9/1999 | 7.4 | 7.3 | 12/9/1999 | 11 | 11 |
| 271 | 12/10/1999 | 7.4 | 7.3 | 12/10/1999 | 13 | 11 |
| 272 | 12/11/1999 | 7.6 | 7.3 | 12/11/1999 | 11 | 11 |
| 273 | 12/12/1999 | 7.3 | 7.3 | 12/12/1999 | 11 | 11 |
| 274 | 12/13/1999 | 7.6 | 7.3 | 12/13/1999 | 11 | 11 |
| 275 | 12/14/1999 | 6.6 | 7.3 | 12/14/1999 | 13 | 11 |
| 276 | 12/15/1999 | 7.0 | 7.3 | 12/15/1999 | 12 | 11 |
| 277 | 12/16/1999 | 7.1 | 7.3 | 12/16/1999 | 12 | 11 |
| 278 | 12/17/1999 | 7.6 | 7.3 | 12/17/1999 | 10 | 11 |
| 279 | 12/18/1999 | 7.8 | 7.3 | 12/18/1999 | 10 | 11 |
| 280 | 12/19/1999 | 8.0 | 7.3 | 12/19/1999 | 11 | 11 |
| 281 | 12/20/1999 | 8.0 | 7.3 | 12/20/1999 | 11 | 11 |
| 282 | 12/21/1999 | 7.2 | 7.3 | 12/21/1999 | 12 | 11 |
| 283 | 12/22/1999 | 7.5 | 7.3 | 12/22/1999 | 10 | 11 |
| 284 | 12/23/1999 | 7.7 | 7.3 | 12/23/1999 | 8 | 11 |
| 285 | 12/24/1999 | 8.2 | 7.3 | 12/24/1999 | 8 | 11 |
| 286 | 12/25/1999 | 6.9 | 7.3 | 12/25/1999 | 8 | 11 |
| 287 | 12/26/1999 | 7.9 | 7.3 | 12/26/1999 | 8 | 11 |
| 288 | 12/27/1999 | 7.9 | 7.3 | 12/27/1999 | 7 | 11 |
| 289 | 12/28/1999 | 7.9 | 7.3 | 12/28/1999 | 7 | 11 |
| 290 | 12/29/1999 | 7.8 | 7.3 | 12/29/1999 | 7 | 11 |
| 291 | 12/30/1999 | 7.7 | 7.3 | 12/30/1999 | 8 | 11 |
| 292 | 12/31/1999 | 7.1 | 7.3 | 12/31/1999 | 9 | 11 |
| 293 | 1/1/2000 | 7.5 | 7.3 | 1/1/2000 | 8 | 11 |
| 294 | 1/2/2000 | 7.7 | 7.3 | 1/2/2000 | 11 | 11 |
| 295 | 1/3/2000 | 7.9 | 7.3 | 1/3/2000 | 14 | 11 |
| 296 | 1/4/2000 | 7.5 | 7.3 | 1/4/2000 | 14 | 11 |
| 297 | 1/5/2000 | 7.0 | 7.3 | 1/5/2000 | 11 | 11 |
| 298 | 1/6/2000 | 6.8 | 7.3 | 1/6/2000 | 10 | 11 |
| 299 | 1/7/2000 | 7.3 | 7.3 | 1/7/2000 | 10 | 11 |
| 300 | 1/8/2000 | 6.9 | 7.3 | 1/8/2000 | 10 | 11 |
| 301 | 1/9/2000 | 7.5 | 7.3 | 1/9/2000 | 10 | 11 |
| 302 | 1/10/2000 | 7.3 | 7.3 | 1/10/2000 | 11 | 11 |
| 303 | 1/11/2000 | 6.9 | 7.3 | 1/11/2000 | 11 | 11 |
| 304 | 1/12/2000 | 7.4 | 7.3 | 1/12/2000 | 10 | 11 |
| 305 | 1/13/2000 | 7.3 | 7.3 | 1/13/2000 | 11 | 11 |
| 306 | 1/14/2000 | 7.4 | 7.3 | 1/14/2000 | 9 | 11 |
| 307 | 1/15/2000 | 7.7 | 7.3 | 1/15/2000 | 8 | 12 |
| 308 | 1/16/2000 | 7.7 | 7.3 | 1/16/2000 | 9 | 12 |
| 309 | 1/17/2000 | 7.3 | 7.3 | 1/17/2000 | 8 | 12 |
| 310 | 1/18/2000 | 7.5 | 7.3 | 1/18/2000 | 6 | 12 |
| 311 | 1/19/2000 | 7.4 | 7.3 | 1/19/2000 | 7 | 12 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 312 | 1/20/2000 | 7.3 | 7.3 | 1/20/2000 | 8 | 12 |
| 313 | 1/21/2000 | 7.7 | 7.3 | 1/21/2000 | 7 | 12 |
| 314 | 1/22/2000 | 7.5 | 7.3 | 1/22/2000 | 5 | 12 |
| 315 | 1/23/2000 | 7.6 | 7.3 | 1/23/2000 | 6 | 12 |
| 316 | 1/24/2000 | 7.5 | 7.3 | 1/24/2000 | 6 | 12 |
| 317 | 1/25/2000 | 7.6 | 7.3 | 1/25/2000 | 6 | 12 |
| 318 | 1/26/2000 | 7.7 | 7.3 | 1/26/2000 | 7 | 12 |
| 319 | 1/27/2000 | 8.1 | 7.3 | 1/27/2000 | 5 | 12 |
| 320 | 1/28/2000 | 7.9 | 7.3 | 1/28/2000 | 4 | 12 |
| 321 | 1/29/2000 | 7.6 | 7.3 | 1/29/2000 | 4 | 12 |
| 322 | 1/30/2000 | 6.6 | 7.3 | 1/30/2000 | 6 | 12 |
| 323 | 1/31/2000 | 6.5 | 7.3 | 1/31/2000 | 7 | 12 |
| 324 | 2/1/2000 | 7.3 | 7.3 | 2/1/2000 | 7 | 12 |
| 325 | 2/2/2000 | 7.8 | 7.3 | 2/2/2000 | 7 | 12 |
| 326 | 2/3/2000 | 7.5 | 7.3 | 2/3/2000 | 7 | 12 |
| 327 | 2/4/2000 | 7.3 | 7.3 | 2/4/2000 | 7 | 12 |
| 328 | 2/5/2000 | 7.0 | 7.3 | 2/5/2000 | 6 | 12 |
| 329 | 2/6/2000 | 7.4 | 7.3 | 2/6/2000 | 6 | 12 |
| 330 | 2/7/2000 | 7.8 | 7.3 | 2/7/2000 | 7 | 12 |
| 331 | 2/8/2000 | 7.3 | 7.3 | 2/8/2000 | 7 | 12 |
| 332 | 2/9/2000 | 7.4 | 7.3 | 2/9/2000 | 7 | 12 |
| 333 | 2/10/2000 | 7.3 | 7.3 | 2/10/2000 | 8 | 12 |
| 334 | 2/11/2000 | 7.5 | 7.3 | 2/11/2000 | 8 | 12 |
| 335 | 2/12/2000 | 7.0 | 7.3 | 2/12/2000 | 8 | 12 |
| 336 | 2/13/2000 | 7.5 | 7.3 | 2/13/2000 | 8 | 12 |
| 337 | 2/14/2000 | 7.5 | 7.3 | 2/14/2000 | 8 | 12 |
| 338 | 2/15/2000 | 7.4 | 7.3 | 2/15/2000 | 8 | 12 |
| 339 | 2/16/2000 | 7.7 | 7.3 | 2/16/2000 | 9 | 12 |
| 340 | 2/17/2000 | 7.2 | 7.3 | 2/17/2000 | 9 | 12 |
| 341 | 2/18/2000 | 7.3 | 7.3 | 2/18/2000 | 8 | 12 |
| 342 | 2/19/2000 | 7.2 | 7.3 | 2/19/2000 | 10 | 12 |
| 343 | 2/20/2000 | 6.6 | 7.3 | 2/20/2000 | 9 | 12 |
| 344 | 2/21/2000 | 7.8 | 7.3 | 2/21/2000 | 8 | 12 |
| 345 | 2/22/2000 | 7.3 | 7.3 | 2/22/2000 | 9 | 12 |
| 346 | 2/23/2000 | 7.6 | 7.3 | 2/23/2000 | 10 | 12 |
| 347 | 2/24/2000 | 7.6 | 7.3 | 2/24/2000 | 10 | 12 |
| 348 | 2/25/2000 | 7.6 | 7.3 | 2/25/2000 | 11 | 12 |
| 349 | 2/26/2000 | 7.6 | 7.3 | 2/26/2000 | 11 | 12 |
| 350 | 2/27/2000 | 7.6 | 7.3 | 2/27/2000 | 11 | 12 |
| 351 | 2/28/2000 | 7.1 | 7.3 | 2/28/2000 | 11 | 12 |
| 352 | 2/29/2000 | 7.2 | 7.3 | 2/29/2000 | 11 | 12 |
| 353 | 3/1/2000 | 7.1 | 7.3 | 3/1/2000 | 11 | 12 |
| 354 | 3/2/2000 | 7.4 | 7.3 | 3/2/2000 | 11 | 12 |
| 355 | 3/3/2000 | 7.3 | 7.3 | 3/3/2000 | 10 | 12 |
| 356 | 3/4/2000 | 7.8 | 7.3 | 3/4/2000 | 10 | 12 |
| 357 | 3/5/2000 | 7.9 | 7.3 | 3/5/2000 | 10 | 12 |
| 358 | 3/6/2000 | 7.8 | 7.3 | 3/6/2000 | 11 | 12 |
| 359 | 3/7/2000 | 7.2 | 7.4 | 3/7/2000 | 11 | 13 |
| 360 | 3/8/2000 | 7.4 | 7.4 | 3/8/2000 | 13 | 13 |
| 361 | 3/9/2000 | 7.5 | 7.4 | 3/9/2000 | 14 | 13 |
| 362 | 3/10/2000 | 7.7 | 7.4 | 3/10/2000 | 13 | 13 |
| 363 | 3/11/2000 | 7.4 | 7.4 | 3/11/2000 | 13 | 13 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 364 | 3/12/2000 | 7.6 | 7.4 | 3/12/2000 | 14 | 13 |
| 365 | 3/13/2000 | 7.5 | 7.4 | 3/13/2000 | 10 | 13 |
| 366 | 3/14/2000 | 7.3 | 7.4 | 3/14/2000 | 12 | 13 |
| 367 | 3/15/2000 | 7.3 | 7.4 | 3/15/2000 | 12 | 13 |
| 368 | 3/16/2000 | 7.2 | 7.4 | 3/16/2000 | 13 | 13 |
| 369 | 3/17/2000 | 6.8 | 7.4 | 3/17/2000 | 13 | 13 |
| 370 | 3/18/2000 | 7.4 | 7.4 | 3/18/2000 | 11 | 13 |
| 371 | 3/19/2000 | 7.8 | 7.4 | 3/19/2000 | 11 | 13 |
| 372 | 3/20/2000 | 7.4 | 7.4 | 3/20/2000 | 12 | 13 |
| 373 | 3/21/2000 | 6.2 | 7.4 | 3/21/2000 | 12 | 13 |
| 374 | 3/22/2000 | 6.5 | 7.4 | 3/22/2000 | 12 | 13 |
| 375 | 3/23/2000 | 6.8 | 7.4 | 3/23/2000 | 12 | 13 |
| 376 | 3/24/2000 | 6.9 | 7.4 | 3/24/2000 | 12 | 13 |
| 377 | 3/25/2000 | 7.3 | 7.4 | 3/25/2000 | 12 | 13 |
| 378 | 3/26/2000 | 6.8 | 7.4 | 3/26/2000 | 12 | 13 |
| 379 | 3/27/2000 | 7.3 | 7.4 | 3/27/2000 | 12 | 13 |
| 380 | 3/28/2000 | 6.9 | 7.4 | 3/28/2000 | 13 | 13 |
| 381 | 3/29/2000 | 7.7 | 7.4 | 3/29/2000 | 16 | 13 |
| 382 | 3/30/2000 | 7.4 | 7.4 | 3/30/2000 | 12 | 13 |
| 383 | 3/31/2000 | 7.4 | 7.4 | 3/31/2000 | 12 | 13 |
| 384 | 4/1/2000 | 7.0 | 7.4 | 4/1/2000 | 11 | 13 |
| 385 | 4/2/2000 | 7.7 | 7.4 | 4/2/2000 | 13 | 13 |
| 386 | 4/3/2000 | 7.8 | 7.4 | 4/3/2000 | 15 | 13 |
| 387 | 4/4/2000 | 7.8 | 7.4 | 4/4/2000 | 15 | 13 |
| 388 | 4/5/2000 | 8.1 | 7.4 | 4/5/2000 | 13 | 13 |
| 389 | 4/6/2000 | 7.3 | 7.4 | 4/6/2000 | 13 | 13 |
| 390 | 4/7/2000 | 7.5 | 7.4 | 4/7/2000 | 14 | 13 |
| 391 | 4/8/2000 | 7.6 | 7.4 | 4/8/2000 | 15 | 13 |
| 392 | 4/9/2000 | 7.7 | 7.4 | 4/9/2000 | 13 | 13 |
| 393 | 4/10/2000 | 7.3 | 7.4 | 4/10/2000 | 13 | 13 |
| 394 | 4/11/2000 | 7.6 | 7.4 | 4/11/2000 | 15 | 13 |
| 395 | 4/12/2000 | 7.0 | 7.4 | 4/12/2000 | 14 | 13 |
| 396 | 4/13/2000 | 7.6 | 7.4 | 4/13/2000 | 12 | 13 |
| 397 | 4/14/2000 | 7.6 | 7.4 | 4/14/2000 | 13 | 13 |
| 398 | 4/15/2000 | 7.6 | 7.4 | 4/15/2000 | 15 | 13 |
| 399 | 4/16/2000 | 7.8 | 7.4 | 4/16/2000 | 15 | 13 |
| 400 | 4/17/2000 | 7.4 | 7.4 | 4/17/2000 | 15 | 13 |
| 401 | 4/18/2000 | 6.5 | 7.4 | 4/18/2000 | 14 | 13 |
| 402 | 4/19/2000 | 6.9 | 7.4 | 4/19/2000 | 15 | 13 |
| 403 | 4/20/2000 | 7.2 | 7.4 | 4/20/2000 | 14 | 13 |
| 404 | 4/21/2000 | 7.4 | 7.4 | 4/21/2000 | 15 | 13 |
| 405 | 4/22/2000 | 7.7 | 7.4 | 4/22/2000 | 14 | 13 |
| 406 | 4/23/2000 | 7.1 | 7.4 | 4/23/2000 | 14 | 13 |
| 407 | 4/24/2000 | 7.8 | 7.4 | 4/24/2000 | 14 | 13 |
| 408 | 4/25/2000 | 6.3 | 7.4 | 4/25/2000 | 14 | 13 |
| 409 | 4/26/2000 | 6.4 | 7.4 | 4/26/2000 | 14 | 13 |
| 410 | 4/27/2000 | 7.2 | 7.4 | 4/27/2000 | 14 | 13 |
| 411 | 4/28/2000 | 7.4 | 7.4 | 4/28/2000 | 14 | 13 |
| 412 | 4/29/2000 | 7.4 | 7.4 | 4/29/2000 | 14 | 13 |
| 413 | 4/30/2000 | 7.2 | 7.4 | 4/30/2000 | 14 | 13 |
| 414 | 5/1/2000 | 7.7 | 7.4 | 5/1/2000 | 14 | 13 |
| 415 | 5/2/2000 | 7.3 | 7.4 | 5/2/2000 | 16 | 13 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 416 | 5/3/2000 | 7.5 | 7.4 | 5/3/2000 | 15 | 13 |
| 417 | 5/4/2000 | 7.6 | 7.4 | 5/4/2000 | 15 | 13 |
| 418 | 5/5/2000 | 7.7 | 7.4 | 5/5/2000 | 16 | 13 |
| 419 | 5/6/2000 | 7.1 | 7.4 | 5/6/2000 | 17 | 14 |
| 420 | 5/7/2000 | 7.8 | 7.4 | 5/7/2000 | 18 | 14 |
| 421 | 5/8/2000 | 7.7 | 7.4 | 5/8/2000 | 18 | 14 |
| 422 | 5/9/2000 | 7.4 | 7.4 | 5/9/2000 | 19 | 14 |
| 423 | 5/10/2000 | 7.0 | 7.4 | 5/10/2000 | 20 | 14 |
| 424 | 5/11/2000 | 7.4 | 7.4 | 5/11/2000 | 18 | 14 |
| 425 | 5/12/2000 | 7.6 | 7.4 | 5/12/2000 | 19 | 14 |
| 426 | 5/13/2000 | 7.8 | 7.4 | 5/13/2000 | 20 | 14 |
| 427 | 5/14/2000 | 7.5 | 7.4 | 5/14/2000 | 20 | 14 |
| 428 | 5/15/2000 | 7.9 | 7.4 | 5/15/2000 | 17 | 14 |
| 429 | 5/16/2000 | 7.5 | 7.4 | 5/16/2000 | 17 | 14 |
| 430 | 5/17/2000 | 7.7 | 7.4 | 5/17/2000 | 18 | 14 |
| 431 | 5/18/2000 | 7.6 | 7.4 | 5/18/2000 | 20 | 14 |
| 432 | 5/19/2000 | 7.8 | 7.4 | 5/19/2000 | 20 | 14 |
| 433 | 5/20/2000 | 7.6 | 7.4 | 5/20/2000 | 20 | 14 |
| 434 | 5/21/2000 | 7.8 | 7.4 | 5/21/2000 | 19 | 14 |
| 435 | 5/22/2000 | 6.2 | 7.4 | 5/22/2000 | 20 | 14 |
| 436 | 5/23/2000 | 7.0 | 7.4 | 5/23/2000 | 19 | 14 |
| 437 | 5/24/2000 | 7.6 | 7.4 | 5/24/2000 | 19 | 14 |
| 438 | 5/25/2000 | 7.3 | 7.4 | 5/25/2000 | 20 | 14 |
| 439 | 5/26/2000 | 7.6 | 7.4 | 5/26/2000 | 19 | 14 |
| 440 | 5/27/2000 | 7.7 | 7.4 | 5/27/2000 | 19 | 14 |
| 441 | 5/28/2000 | 7.6 | 7.4 | 5/28/2000 | 19 | 14 |
| 442 | 5/29/2000 | 7.4 | 7.4 | 5/29/2000 | 19 | 14 |
| 443 | 5/30/2000 | 7.5 | 7.4 | 5/30/2000 | 17 | 14 |
| 444 | 5/31/2000 | 7.9 | 7.4 | 5/31/2000 | 17 | 14 |
| 445 | 6/1/2000 | 7.4 | 7.4 | 6/1/2000 | 19 | 14 |
| 446 | 6/2/2000 | 7.4 | 7.4 | 6/2/2000 | 20 | 14 |
| 447 | 6/3/2000 | 7.3 | 7.4 | 6/3/2000 | 20 | 14 |
| 448 | 6/4/2000 | 8.1 | 7.4 | 6/4/2000 | 19 | 14 |
| 449 | 6/5/2000 | 8.3 | 7.4 | 6/5/2000 | 19 | 14 |
| 450 | 6/6/2000 | 7.0 | 7.4 | 6/6/2000 | 20 | 14 |
| 451 | 6/7/2000 | 7.5 | 7.4 | 6/7/2000 | 18 | 14 |
| 452 | 6/8/2000 | 8.0 | 7.5 | 6/8/2000 | 19 | 14 |
| 453 | 6/9/2000 | 7.7 | 7.5 | 6/9/2000 | 20 | 14 |
| 454 | 6/10/2000 | 7.4 | 7.5 | 6/10/2000 | 20 | 14 |
| 455 | 6/11/2000 | 7.5 | 7.5 | 6/11/2000 | 20 | 14 |
| 456 | 6/12/2000 | 7.7 | 7.5 | 6/12/2000 | 22 | 14 |
| 457 | 6/13/2000 | 7.2 | 7.5 | 6/13/2000 | 21 | 14 |
| 458 | 6/14/2000 | 8.1 | 7.5 | 6/14/2000 | 22 | 14 |
| 459 | 6/15/2000 | 7.3 | 7.5 | 6/15/2000 | 21 | 14 |
| 460 | 6/16/2000 | 6.7 | 7.5 | 6/16/2000 | 21 | 14 |
| 461 | 6/17/2000 | 7.3 | 7.5 | 6/17/2000 | 23 | 14 |
| 462 | 6/18/2000 | 7.1 | 7.5 | 6/18/2000 | 22 | 14 |
| 463 | 6/19/2000 | 7.3 | 7.5 | 6/19/2000 | 22 | 14 |
| 464 | 6/20/2000 | 6.8 | 7.5 | 6/20/2000 | 21 | 14 |
| 465 | 6/21/2000 | 7.3 | 7.5 | 6/21/2000 | 21 | 14 |
| 466 | 6/22/2000 | 6.7 | 7.5 | 6/22/2000 | 21 | 14 |
| 467 | 6/23/2000 | 7.5 | 7.5 | 6/23/2000 | 22 | 14 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 468 | 6/24/2000 | 7.7 | 7.5 | 6/24/2000 | 22 | 15 |
| 469 | 6/25/2000 | 7.5 | 7.5 | 6/25/2000 | 23 | 15 |
| 470 | 6/26/2000 | 7.6 | 7.5 | 6/26/2000 | 23 | 15 |
| 471 | 6/27/2000 | 7.1 | 7.5 | 6/27/2000 | 21 | 15 |
| 472 | 6/28/2000 | 6.7 | 7.5 | 6/28/2000 | 22 | 15 |
| 473 | 6/29/2000 | 6.8 | 7.5 | 6/29/2000 | 23 | 15 |
| 474 | 6/30/2000 | 6.8 | 7.5 | 6/30/2000 | 22 | 15 |
| 475 | 7/1/2000 | 8.0 | 7.5 | 7/1/2000 | 21 | 15 |
| 476 | 7/2/2000 | 8.1 | 7.5 | 7/2/2000 | 21 | 15 |
| 477 | 7/3/2000 | 7.3 | 7.5 | 7/3/2000 | 21 | 15 |
| 478 | 7/4/2000 | 7.8 | 7.5 | 7/4/2000 | 22 | 15 |
| 479 | 7/5/2000 | 7.6 | 7.5 | 7/5/2000 | 23 | 15 |
| 480 | 7/6/2000 | 8.3 | 7.5 | 7/6/2000 | 21 | 15 |
| 481 | 7/7/2000 | 7.3 | 7.5 | 7/7/2000 | 23 | 15 |
| 482 | 7/8/2000 | 8.3 | 7.5 | 7/8/2000 | 20 | 15 |
| 483 | 7/9/2000 | 7.8 | 7.5 | 7/9/2000 | 21 | 15 |
| 484 | 7/10/2000 | 7.5 | 7.5 | 7/10/2000 | 22 | 15 |
| 485 | 7/11/2000 | 8.1 | 7.5 | 7/11/2000 | 23 | 15 |
| 486 | 7/12/2000 | 7.7 | 7.5 | 7/12/2000 | 22 | 15 |
| 487 | 7/13/2000 | 8.2 | 7.5 | 7/13/2000 | 21 | 15 |
| 488 | 7/14/2000 | 7.8 | 7.5 | 7/14/2000 | 22 | 15 |
| 489 | 7/15/2000 | 7.3 | 7.5 | 7/15/2000 | 22 | 15 |
| 490 | 7/16/2000 | 7.8 | 7.5 | 7/16/2000 | 22 | 15 |
| 491 | 7/17/2000 | 7.4 | 7.5 | 7/17/2000 | 22 | 15 |
| 492 | 7/18/2000 | 7.7 | 7.5 | 7/18/2000 | 22 | 15 |
| 493 | 7/19/2000 | 7.4 | 7.5 | 7/19/2000 | 22 | 15 |
| 494 | 7/20/2000 | 8.0 | 7.5 | 7/20/2000 | 21 | 15 |
| 495 | 7/21/2000 | 7.3 | 7.5 | 7/21/2000 | 21 | 15 |
| 496 | 7/22/2000 | 7.2 | 7.5 | 7/22/2000 | 22 | 15 |
| 497 | 7/23/2000 | 7.5 | 7.5 | 7/23/2000 | 21 | 15 |
| 498 | 7/24/2000 | 7.4 | 7.5 | 7/24/2000 | 21 | 15 |
| 499 | 7/25/2000 | 7.7 | 7.5 | 7/25/2000 | 21 | 15 |
| 500 | 7/26/2000 | 7.8 | 7.5 | 7/26/2000 | 21 | 15 |
| 501 | 7/27/2000 | 7.9 | 7.5 | 7/27/2000 | 22 | 15 |
| 502 | 7/28/2000 | 7.8 | 7.5 | 7/28/2000 | 22 | 15 |
| 503 | 7/29/2000 | 6.3 | 7.5 | 7/29/2000 | 22 | 15 |
| 504 | 7/30/2000 | 7.1 | 7.5 | 7/30/2000 | 23 | 15 |
| 505 | 7/31/2000 | 7.8 | 7.5 | 7/31/2000 | 23 | 15 |
| 506 | 8/1/2000 | 7.7 | 7.5 | 8/1/2000 | 23 | 15 |
| 507 | 8/2/2000 | 8.0 | 7.5 | 8/2/2000 | 23 | 15 |
| 508 | 8/3/2000 | 6.8 | 7.5 | 8/3/2000 | 23 | 15 |
| 509 | 8/4/2000 | 7.3 | 7.5 | 8/4/2000 | 23 | 16 |
| 510 | 8/5/2000 | 7.6 | 7.5 | 8/5/2000 | 23 | 16 |
| 511 | 8/6/2000 | 6.9 | 7.5 | 8/6/2000 | 22 | 16 |
| 512 | 8/7/2000 | 7.7 | 7.5 | 8/7/2000 | 23 | 16 |
| 513 | 8/8/2000 | 8.0 | 7.5 | 8/8/2000 | 25 | 16 |
| 514 | 8/9/2000 | 8.0 | 7.5 | 8/9/2000 | 24 | 16 |
| 515 | 8/10/2000 | 7.6 | 7.5 | 8/10/2000 | 23 | 16 |
| 516 | 8/11/2000 | 7.6 | 7.5 | 8/11/2000 | 23 | 16 |
| 517 | 8/19/2000 | 7.4 | 7.5 | 8/19/2000 | 20 | 16 |
| 518 | 8/20/2000 | 7.4 | 7.5 | 8/20/2000 | 20 | 16 |
| 519 | 8/21/2000 | 7.0 | 7.5 | 8/21/2000 | 20 | 16 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 520 | 8/23/2000 | 8.0 | 7.5 | 8/23/2000 | 20 | 16 |
| 521 | 8/24/2000 | 7.9 | 7.5 | 8/24/2000 | 22 | 16 |
| 522 | 8/25/2000 | 8.1 | 7.5 | 8/25/2000 | 22 | 16 |
| 523 | 8/26/2000 | 7.7 | 7.5 | 8/26/2000 | 21 | 16 |
| 524 | 8/27/2000 | 7.3 | 7.5 | 8/27/2000 | 21 | 16 |
| 525 | 8/28/2000 | 7.7 | 7.5 | 8/28/2000 | 22 | 16 |
| 526 | 8/29/2000 | 8.1 | 7.5 | 8/29/2000 | 22 | 16 |
| 527 | 9/1/2000 | 7.9 | 7.5 | 9/1/2000 | 24 | 16 |
| 528 | 9/2/2000 | 8.2 | 7.5 | 9/2/2000 | 23 | 16 |
| 529 | 9/3/2000 | 8.4 | 7.5 | 9/3/2000 | 23 | 16 |
| 530 | 9/4/2000 | 7.4 | 7.5 | 9/4/2000 | 23 | 16 |
| 531 | 9/5/2000 | 7.0 | 7.6 | 9/5/2000 | 21 | 16 |
| 532 | 9/6/2000 | 7.4 | 7.6 | 9/6/2000 | 20 | 16 |
| 533 | 9/7/2000 | 7.5 | 7.6 | 9/7/2000 | 20 | 16 |
| 534 | 9/8/2000 | 7.6 | 7.6 | 9/8/2000 | 20 | 16 |
| 535 | 9/9/2000 | 7.3 | 7.6 | 9/9/2000 | 21 | 16 |
| 536 | 9/10/2000 | 7.4 | 7.6 | 9/10/2000 | 20 | 16 |
| 537 | 9/11/2000 | 7.3 | 7.6 | 9/11/2000 | 21 | 16 |
| 538 | 9/12/2000 | 7.4 | 7.6 | 9/12/2000 | 23 | 16 |
| 539 | 9/13/2000 | 7.8 | 7.6 | 9/13/2000 | 22 | 16 |
| 540 | 9/14/2000 | 7.7 | 7.6 | 9/14/2000 | 22 | 16 |
| 541 | 9/15/2000 | 7.7 | 7.6 | 9/15/2000 | 22 | 16 |
| 542 | 9/16/2000 | 8.4 | 7.6 | 9/16/2000 | 19 | 16 |
| 543 | 9/17/2000 | 7.3 | 7.6 | 9/17/2000 | 15 | 16 |
| 544 | 9/18/2000 | 8.1 | 7.6 | 9/18/2000 | 18 | 16 |
| 545 | 9/19/2000 | 7.5 | 7.6 | 9/19/2000 | 21 | 16 |
| 546 | 9/20/2000 | 7.5 | 7.6 | 9/20/2000 | 20 | 16 |
| 547 | 9/21/2000 | 7.8 | 7.6 | 9/21/2000 | 21 | 16 |
| 548 | 9/22/2000 | 7.8 | 7.6 | 9/22/2000 | 19 | 16 |
| 549 | 9/23/2000 | 7.3 | 7.6 | 9/23/2000 | 19 | 16 |
| 550 | 9/24/2000 | 7.7 | 7.6 | 9/24/2000 | 20 | 16 |
| 551 | 9/25/2000 | 8.2 | 7.6 | 9/25/2000 | 20 | 16 |
| 552 | 9/26/2000 | 6.4 | 7.6 | 9/26/2000 | 20 | 16 |
| 553 | 9/27/2000 | 7.3 | 7.6 | 9/27/2000 | 18 | 16 |
| 554 | 9/28/2000 | 6.8 | 7.6 | 9/28/2000 | 17 | 17 |
| 555 | 9/29/2000 | 8.0 | 7.6 | 9/29/2000 | 17 | 17 |
| 556 | 9/30/2000 | 7.6 | 7.6 | 9/30/2000 | 14 | 17 |
| 557 | 10/1/2000 | 7.7 | 7.6 | 10/1/2000 | 16 | 17 |
| 558 | 10/2/2000 | 8.2 | 7.6 | 10/2/2000 | 19 | 17 |
| 559 | 10/3/2000 | 7.8 | 7.6 | 10/3/2000 | 21 | 17 |
| 560 | 10/4/2000 | 7.8 | 7.6 | 10/4/2000 | 20 | 17 |
| 561 | 10/5/2000 | 8.0 | 7.6 | 10/5/2000 | 20 | 17 |
| 562 | 10/6/2000 | 7.9 | 7.6 | 10/6/2000 | 22 | 17 |
| 563 | 10/7/2000 | 7.8 | 7.6 | 10/7/2000 | 18 | 17 |
| 564 | 10/8/2000 | 7.7 | 7.6 | 10/8/2000 | 15 | 17 |
| 565 | 10/9/2000 | 7.5 | 7.6 | 10/9/2000 | 13 | 17 |
| 566 | 10/10/2000 | 7.9 | 7.6 | 10/10/2000 | 13 | 17 |
| 567 | 10/11/2000 | 7.7 | 7.6 | 10/11/2000 | 19 | 17 |
| 568 | 10/12/2000 | 8.8 | 7.6 | 10/12/2000 | 19 | 17 |
| 569 | 10/13/2000 | 8.6 | 7.6 | 10/13/2000 | 17 | 17 |
| 570 | 10/14/2000 | 8.6 | 7.6 | 10/14/2000 | 16 | 17 |
| 571 | 10/15/2000 | 8.5 | 7.6 | 10/15/2000 | 16 | 17 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 572 | 10/16/2000 | 7.9 | 7.6 | 10/16/2000 | 17 | 17 |
| 573 | 10/17/2000 | 7.3 | 7.6 | 10/17/2000 | 20 | 17 |
| 574 | 10/18/2000 | 7.4 | 7.6 | 10/18/2000 | 20 | 17 |
| 575 | 10/19/2000 | 7.5 | 7.6 | 10/19/2000 | 17 | 17 |
| 576 | 10/20/2000 | 7.7 | 7.6 | 10/20/2000 | 18 | 17 |
| 577 | 10/21/2000 | 7.7 | 7.6 | 10/21/2000 | 16 | 17 |
| 578 | 10/22/2000 | 7.6 | 7.6 | 10/22/2000 | 17 | 17 |
| 579 | 10/23/2000 | 8.0 | 7.6 | 10/23/2000 | 14 | 17 |
| 580 | 10/24/2000 | 7.7 | 7.6 | 10/24/2000 | 18 | 17 |
| 581 | 10/25/2000 | 7.8 | 7.6 | 10/25/2000 | 20 | 17 |
| 582 | 10/26/2000 | 7.5 | 7.6 | 10/26/2000 | 17 | 17 |
| 583 | 10/27/2000 | 8.0 | 7.6 | 10/27/2000 | 18 | 17 |
| 584 | 10/28/2000 | 7.4 | 7.6 | 10/28/2000 | 18 | 17 |
| 585 | 10/29/2000 | 7.3 | 7.6 | 10/29/2000 | 13 | 17 |
| 586 | 10/30/2000 | 7.1 | 7.6 | 10/30/2000 | 16 | 17 |
| 587 | 10/31/2000 | 7.6 | 7.6 | 10/31/2000 | 18 | 17 |
| 588 | 11/1/2000 | 7.6 | 7.6 | 11/1/2000 | 16 | 17 |
| 589 | 11/2/2000 | 7.4 | 7.6 | 11/2/2000 | 17 | 17 |
| 590 | 11/3/2000 | 7.4 | 7.6 | 11/3/2000 | 17 | 17 |
| 591 | 11/4/2000 | 7.7 | 7.6 | 11/4/2000 | 16 | 17 |
| 592 | 11/5/2000 | 7.9 | 7.6 | 11/5/2000 | 14 | 17 |
| 593 | 11/6/2000 | 7.4 | 7.6 | 11/6/2000 | 16 | 17 |
| 594 | 11/7/2000 | 7.8 | 7.6 | 11/7/2000 | 15 | 17 |
| 595 | 11/8/2000 | 7.7 | 7.6 | 11/8/2000 | 14 | 17 |
| 596 | 11/9/2000 | 7.8 | 7.6 | 11/9/2000 | 17 | 17 |
| 597 | 11/10/2000 | 8.2 | 7.6 | 11/10/2000 | 18 | 17 |
| 598 | 11/11/2000 | 7.6 | 7.6 | 11/11/2000 | 15 | 17 |
| 599 | 11/12/2000 | 7.3 | 7.6 | 11/12/2000 | 15 | 17 |
| 600 | 11/13/2000 | 7.6 | 7.6 | 11/13/2000 | 17 | 17 |
| 601 | 11/14/2000 | 7.4 | 7.6 | 11/14/2000 | 17 | 17 |
| 602 | 11/15/2000 | 7.7 | 7.6 | 11/15/2000 | 13 | 17 |
| 603 | 11/16/2000 | 7.6 | 7.6 | 11/16/2000 | 11 | 18 |
| 604 | 11/17/2000 | 7.4 | 7.6 | 11/17/2000 | 13 | 18 |
| 605 | 11/18/2000 | 8.4 | 7.6 | 11/18/2000 | 10 | 18 |
| 606 | 11/19/2000 | 7.7 | 7.6 | 11/19/2000 | 9 | 18 |
| 607 | 11/20/2000 | 7.2 | 7.6 | 11/20/2000 | 15 | 18 |
| 608 | 11/21/2000 | 7.5 | 7.6 | 11/21/2000 | 12 | 18 |
| 609 | 11/22/2000 | 8.1 | 7.6 | 11/22/2000 | 8 | 18 |
| 610 | 11/23/2000 | 7.6 | 7.6 | 11/23/2000 | 7 | 18 |
| 611 | 11/24/2000 | 7.4 | 7.6 | 11/24/2000 | 5 | 18 |
| 612 | 11/25/2000 | 6.9 | 7.6 | 11/25/2000 | 8 | 18 |
| 613 | 11/26/2000 | 6.8 | 7.6 | 11/26/2000 | 11 | 18 |
| 614 | 11/27/2000 | 6.9 | 7.6 | 11/27/2000 | 12 | 18 |
| 615 | 11/28/2000 | 7.6 | 7.6 | 11/28/2000 | 12 | 18 |
| 616 | 11/29/2000 | 7.4 | 7.6 | 11/29/2000 | 12 | 18 |
| 617 | 11/30/2000 | 7.4 | 7.6 | 11/30/2000 | 10 | 18 |
| 618 | 12/1/2000 | 7.7 | 7.6 | 12/1/2000 | 10 | 18 |
| 619 | 12/2/2000 | 7.7 | 7.6 | 12/2/2000 | 11 | 18 |
| 620 | 12/3/2000 | 7.6 | 7.6 | 12/3/2000 | 8 | 18 |
| 621 | 12/4/2000 | 7.2 | 7.6 | 12/4/2000 | 9 | 18 |
| 622 | 12/5/2000 | 7.5 | 7.6 | 12/5/2000 | 13 | 18 |
| 623 | 12/6/2000 | 7.4 | 7.6 | 12/6/2000 | 12 | 18 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 624 | 12/7/2000 | 7.3 | 7.6 | 12/7/2000 | 13 | 18 |
| 625 | 12/8/2000 | 7.9 | 7.7 | 12/8/2000 | 10 | 18 |
| 626 | 12/9/2000 | 8.0 | 7.7 | 12/9/2000 | 8 | 18 |
| 627 | 12/10/2000 | 7.7 | 7.7 | 12/10/2000 | 6 | 18 |
| 628 | 12/11/2000 | 7.0 | 7.7 | 12/11/2000 | 10 | 18 |
| 629 | 12/12/2000 | 7.4 | 7.7 | 12/12/2000 | 12 | 18 |
| 630 | 12/13/2000 | 7.8 | 7.7 | 12/13/2000 | 9 | 18 |
| 631 | 12/14/2000 | 7.6 | 7.7 | 12/14/2000 | 11 | 18 |
| 632 | 12/15/2000 | 7.9 | 7.7 | 12/15/2000 | 9 | 18 |
| 633 | 12/16/2000 | 7.8 | 7.7 | 12/16/2000 | 12 | 18 |
| 634 | 12/17/2000 | 6.5 | 7.7 | 12/17/2000 | 14 | 18 |
| 635 | 12/18/2000 | 6.5 | 7.7 | 12/18/2000 | 10 | 18 |
| 636 | 12/19/2000 | 7.1 | 7.7 | 12/19/2000 | 12 | 18 |
| 637 | 12/20/2000 | 6.9 | 7.7 | 12/20/2000 | 9 | 18 |
| 638 | 12/21/2000 | 7.0 | 7.7 | 12/21/2000 | 9 | 18 |
| 639 | 12/22/2000 | 6.9 | 7.7 | 12/22/2000 | 9 | 18 |
| 640 | 12/23/2000 | 6.6 | 7.7 | 12/23/2000 | 5 | 18 |
| 641 | 12/24/2000 | 7.0 | 7.7 | 12/24/2000 | 8 | 18 |
| 642 | 12/25/2000 | 7.2 | 7.7 | 12/25/2000 | 7 | 18 |
| 643 | 12/26/2000 | 6.9 | 7.7 | 12/26/2000 | 8 | 18 |
| 644 | 12/27/2000 | 7.0 | 7.7 | 12/27/2000 | 5 | 18 |
| 645 | 12/28/2000 | 7.4 | 7.7 | 12/28/2000 | 6 | 18 |
| 646 | 12/29/2000 | 7.3 | 7.7 | 12/29/2000 | 5 | 18 |
| 647 | 12/30/2000 | 6.7 | 7.7 | 12/30/2000 | 7 | 18 |
| 648 | 12/31/2000 | 6.6 | 7.7 | 12/31/2000 | 7 | 18 |
| 649 | 1/1/2001 | 6.8 | 7.7 | 1/1/2001 | 7 | 18 |
| 650 | 1/2/2001 | 7.6 | 7.7 | 1/2/2001 | 13 | 18 |
| 651 | 1/3/2001 | 7.4 | 7.7 | 1/3/2001 | 7 | 18 |
| 652 | 1/4/2001 | 7.2 | 7.7 | 1/4/2001 | 8 | 18 |
| 653 | 1/5/2001 | 7.2 | 7.7 | 1/5/2001 | 7 | 18 |
| 654 | 1/6/2001 | 7.3 | 7.7 | 1/6/2001 | 6 | 18 |
| 655 | 1/7/2001 | 7.1 | 7.7 | 1/7/2001 | 6 | 18 |
| 656 | 1/8/2001 | 7.3 | 7.7 | 1/8/2001 | 8 | 18 |
| 657 | 1/9/2001 | 7.5 | 7.7 | 1/9/2001 | 8 | 18 |
| 658 | 1/10/2001 | 7.4 | 7.7 | 1/10/2001 | 9 | 18 |
| 659 | 1/11/2001 | 7.0 | 7.7 | 1/11/2001 | 8 | 18 |
| 660 | 1/12/2001 | 7.1 | 7.7 | 1/12/2001 | 9 | 18 |
| 661 | 1/13/2001 | 7.9 | 7.7 | 1/13/2001 | 6 | 18 |
| 662 | 1/14/2001 | 8.1 | 7.7 | 1/14/2001 | 5 | 18 |
| 663 | 1/15/2001 | 7.9 | 7.7 | 1/15/2001 | 10 | 18 |
| 664 | 1/16/2001 | 7.5 | 7.7 | 1/16/2001 | 9 | 18 |
| 665 | 1/17/2001 | 7.4 | 7.7 | 1/17/2001 | 8 | 19 |
| 666 | 1/18/2001 | 7.1 | 7.7 | 1/18/2001 | 9 | 19 |
| 667 | 1/19/2001 | 7.2 | 7.7 | 1/19/2001 | 10 | 19 |
| 668 | 1/20/2001 | 6.1 | 7.7 | 1/20/2001 | 10 | 19 |
| 669 | 1/21/2001 | 6.7 | 7.7 | 1/21/2001 | 10 | 19 |
| 670 | 1/22/2001 | 7.2 | 7.7 | 1/22/2001 | 8 | 19 |
| 671 | 1/23/2001 | 7.2 | 7.7 | 1/23/2001 | 9 | 19 |
| 672 | 1/24/2001 | 7.3 | 7.7 | 1/24/2001 | 10 | 19 |
| 673 | 1/25/2001 | 7.2 | 7.7 | 1/25/2001 | 10 | 19 |
| 674 | 1/26/2001 | 7.3 | 7.7 | 1/26/2001 | 8 | 19 |
| 675 | 1/27/2001 | 6.7 | 7.7 | 1/27/2001 | 6 | 19 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 676 | 1/28/2001 | 6.0 | 7.7 | 1/28/2001 | 6 | 19 |
| 677 | 1/29/2001 | 7.9 | 7.7 | 1/29/2001 | 8 | 19 |
| 678 | 1/30/2001 | 7.4 | 7.7 | 1/30/2001 | 11 | 19 |
| 679 | 1/31/2001 | 7.3 | 7.7 | 1/31/2001 | 11 | 19 |
| 680 | 2/1/2001 | 7.2 | 7.7 | 2/1/2001 | 11 | 19 |
| 681 | 2/2/2001 | 7.0 | 7.7 | 2/2/2001 | 11 | 19 |
| 682 | 2/3/2001 | 6.8 | 7.7 | 2/3/2001 | 8 | 19 |
| 683 | 2/4/2001 | 7.0 | 7.7 | 2/4/2001 | 7 | 19 |
| 684 | 2/5/2001 | 7.1 | 7.7 | 2/5/2001 | 10 | 19 |
| 685 | 2/6/2001 | 6.9 | 7.7 | 2/6/2001 | 9 | 19 |
| 686 | 2/7/2001 | 7.3 | 7.7 | 2/7/2001 | 10 | 19 |
| 687 | 2/8/2001 | 7.7 | 7.7 | 2/8/2001 | 11 | 19 |
| 688 | 2/9/2001 | 7.3 | 7.7 | 2/9/2001 | 12 | 19 |
| 689 | 2/10/2001 | 7.3 | 7.7 | 2/10/2001 | 11 | 19 |
| 690 | 2/11/2001 | 7.1 | 7.7 | 2/11/2001 | 11 | 19 |
| 691 | 2/12/2001 | 7.0 | 7.7 | 2/12/2001 | 9 | 19 |
| 692 | 2/13/2001 | 7.3 | 7.7 | 2/13/2001 | 11 | 19 |
| 693 | 2/14/2001 | 7.4 | 7.7 | 2/14/2001 | 12 | 19 |
| 694 | 2/15/2001 | 7.7 | 7.7 | 2/15/2001 | 12 | 19 |
| 695 | 2/16/2001 | 6.9 | 7.7 | 2/16/2001 | 12 | 19 |
| 696 | 2/17/2001 | 6.7 | 7.7 | 2/17/2001 | 11 | 19 |
| 697 | 2/18/2001 | 6.6 | 7.7 | 2/18/2001 | 8 | 19 |
| 698 | 2/20/2001 | 7.1 | 7.7 | 2/20/2001 | 11 | 19 |
| 699 | 2/21/2001 | 7.3 | 7.7 | 2/21/2001 | 13 | 19 |
| 700 | 2/22/2001 | 7.2 | 7.7 | 2/22/2001 | 8 | 19 |
| 701 | 2/23/2001 | 7.7 | 7.7 | 2/23/2001 | 11 | 19 |
| 702 | 2/24/2001 | 7.5 | 7.7 | 2/24/2001 | 8 | 19 |
| 703 | 2/25/2001 | 7.7 | 7.7 | 2/25/2001 | 9 | 19 |
| 704 | 2/26/2001 | 7.5 | 7.7 | 2/26/2001 | 12 | 19 |
| 705 | 2/27/2001 | 7.2 | 7.7 | 2/27/2001 | 12 | 19 |
| 706 | 2/28/2001 | 7.1 | 7.7 | 2/28/2001 | 10 | 19 |
| 707 | 3/1/2001 | 7.6 | 7.7 | 3/1/2001 | 8 | 19 |
| 708 | 3/2/2001 | 7.0 | 7.7 | 3/2/2001 | 10 | 19 |
| 709 | 3/3/2001 | 7.0 | 7.7 | 3/3/2001 | 10 | 19 |
| 710 | 3/4/2001 | 6.8 | 7.7 | 3/4/2001 | 11 | 19 |
| 711 | 3/5/2001 | 7.0 | 7.7 | 3/5/2001 | 10 | 19 |
| 712 | 3/6/2001 | 7.1 | 7.7 | 3/6/2001 | 9 | 19 |
| 713 | 3/7/2001 | 7.5 | 7.7 | 3/7/2001 | 11 | 19 |
| 714 | 3/8/2001 | 7.7 | 7.7 | 3/8/2001 | 9 | 19 |
| 715 | 3/9/2001 | 7.6 | 7.7 | 3/9/2001 | 10 | 20 |
| 716 | 3/10/2001 | 7.2 | 7.7 | 3/10/2001 | 9 | 20 |
| 717 | 3/11/2001 | 7.4 | 7.7 | 3/11/2001 | 9 | 20 |
| 718 | 3/12/2001 | 7.4 | 7.7 | 3/12/2001 | 12 | 20 |
| 719 | 3/13/2001 | 8.0 | 7.7 | 3/13/2001 | 10 | 20 |
| 720 | 3/14/2001 | 7.6 | 7.7 | 3/14/2001 | 10 | 20 |
| 721 | 3/15/2001 | 7.5 | 7.8 | 3/15/2001 | 10 | 20 |
| 722 | 3/16/2001 | 7.7 | 7.8 | 3/16/2001 | 10 | 20 |
| 723 | 3/17/2001 | 7.3 | 7.8 | 3/17/2001 | 11 | 20 |
| 724 | 3/18/2001 | 8.3 | 7.8 | 3/18/2001 | 10 | 20 |
| 725 | 3/19/2001 | 7.5 | 7.8 | 3/19/2001 | 9 | 20 |
| 726 | 3/20/2001 | 7.5 | 7.8 | 3/20/2001 | 10 | 20 |
| 727 | 3/21/2001 | 7.2 | 7.8 | 3/21/2001 | 13 | 20 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 728 | 3/22/2001 | 7.6 | 7.8 | 3/22/2001 | 12 | 20 |
| 729 | 3/23/2001 | 7.6 | 7.8 | 3/23/2001 | 14 | 20 |
| 730 | 3/24/2001 | 7.2 | 7.8 | 3/24/2001 | 11 | 20 |
| 731 | 3/25/2001 | 6.4 | 7.8 | 3/25/2001 | 13 | 20 |
| 732 | 3/26/2001 | 7.5 | 7.8 | 3/26/2001 | 11 | 20 |
| 733 | 3/27/2001 | 7.5 | 7.8 | 3/27/2001 | 12 | 20 |
| 734 | 3/28/2001 | 7.3 | 7.8 | 3/28/2001 | 10 | 20 |
| 735 | 3/29/2001 | 7.2 | 7.8 | 3/29/2001 | 11 | 20 |
| 736 | 3/30/2001 | 6.5 | 7.8 | 3/30/2001 | 12 | 20 |
| 737 | 3/31/2001 | 6.8 | 7.8 | 3/31/2001 | 11 | 20 |
| 738 | 4/1/2001 | 7.4 | 7.6 | 4/1/2001 | 11 | 20 |
| 739 | 4/2/2001 | 7.3 | 7.8 | 4/2/2001 | 12 | 20 |
| 740 | 4/3/2001 | 7.3 | 7.8 | 4/3/2001 | 13 | 20 |
| 741 | 4/4/2001 | 7.0 | 7.8 | 4/4/2001 | 11 | 20 |
| 742 | 4/5/2001 | 7.2 | 7.8 | 4/5/2001 | 13 | 20 |
| 743 | 4/6/2001 | 7.5 | 7.8 | 4/6/2001 | 14 | 20 |
| 744 | 4/7/2001 | 7.3 | 7.8 | 4/7/2001 | 14 | 20 |
| 745 | 4/8/2001 | 6.8 | 7.8 | 4/8/2001 | 13 | 20 |
| 746 | 4/9/2001 | 6.5 | 7.8 | 4/9/2001 | 13 | 20 |
| 747 | 4/10/2001 | 7.7 | 7.8 | 4/10/2001 | 16 | 20 |
| 748 | 4/11/2001 | 7.2 | 7.8 | 4/11/2001 | 16 | 20 |
| 749 | 4/12/2001 | 7.5 | 7.8 | 4/12/2001 | 16 | 20 |
| 750 | 4/13/2001 | 7.1 | 7.8 | 4/13/2001 | 15 | 20 |
| 751 | 4/14/2001 | 7.2 | 7.8 | 4/14/2001 | 13 | 20 |
| 752 | 4/15/2001 | 6.6 | 7.8 | 4/15/2001 | 13 | 20 |
| 753 | 4/16/2001 | 7.5 | 7.8 | 4/16/2001 | 14 | 20 |
| 754 | 4/17/2001 | 7.2 | 7.8 | 4/17/2001 | 13 | 20 |
| 755 | 4/18/2001 | 7.6 | 7.8 | 4/18/2001 | 12 | 20 |
| 756 | 4/19/2001 | 7.5 | 7.8 | 4/19/2001 | 12 | 20 |
| 757 | 4/20/2001 | 7.6 | 7.8 | 4/20/2001 | 12 | 20 |
| 758 | 4/21/2001 | 7.4 | 7.8 | 4/21/2001 | 13 | 20 |
| 759 | 4/22/2001 | 7.3 | 7.8 | 4/22/2001 | 15 | 20 |
| 760 | 4/23/2001 | 7.5 | 7.8 | 4/23/2001 | 17 | 20 |
| 761 | 4/24/2001 | 7.3 | 7.8 | 4/24/2001 | 17 | 20 |
| 762 | 4/25/2001 | 7.2 | 7.8 | 4/25/2001 | 13 | 20 |
| 763 | 4/26/2001 | 7.1 | 7.8 | 4/26/2001 | 14 | 20 |
| 764 | 4/27/2001 | 7.2 | 7.8 | 4/27/2001 | 13 | 20 |
| 765 | 4/28/2001 | 7.6 | 7.8 | 4/28/2001 | 15 | 20 |
| 766 | 4/29/2001 | 7.5 | 7.8 | 4/29/2001 | 14 | 20 |
| 767 | 4/30/2001 | 7.3 | 7.8 | 4/30/2001 | 13 | 20 |
| 768 | 5/1/2001 | 7.6 | 7.8 | 5/1/2001 | 17 | 20 |
| 769 | 5/2/2001 | 7.4 | 7.8 | 5/2/2001 | 17 | 20 |
| 770 | 5/3/2001 | 7.5 | 7.8 | 5/3/2001 | 17 | 20 |
| 771 | 5/4/2001 | 7.5 | 7.8 | 5/4/2001 | 18 | 20 |
| 772 | 5/5/2001 | 7.2 | 7.8 | 5/5/2001 | 18 | 20 |
| 773 | 5/6/2001 | 7.2 | 7.8 | 5/6/2001 | 18 | 21 |
| 774 | 5/7/2001 | 7.5 | 7.8 | 5/7/2001 | 16 | 21 |
| 775 | 5/8/2001 | 7.6 | 7.8 | 5/8/2001 | 18 | 21 |
| 776 | 5/9/2001 | 7.8 | 7.8 | 5/9/2001 | 16 | 21 |
| 777 | 5/10/2001 | 7.6 | 7.8 | 5/10/2001 | 16 | 21 |
| 778 | 5/11/2001 | 7.6 | 7.8 | 5/11/2001 | 18 | 21 |
| 779 | 5/12/2001 | 7.6 | 7.8 | 5/12/2001 | 18 | 21 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 780 | 5/13/2001 | 7.3 | 7.8 | 5/13/2001 | 17 | 21 |
| 781 | 5/14/2001 | 7.6 | 7.8 | 5/14/2001 | 16 | 21 |
| 782 | 5/15/2001 | 7.8 | 7.8 | 5/15/2001 | 18 | 21 |
| 783 | 5/16/2001 | 7.9 | 7.8 | 5/16/2001 | 18 | 21 |
| 784 | 5/17/2001 | 7.5 | 7.8 | 5/17/2001 | 18 | 21 |
| 785 | 5/18/2001 | 7.4 | 7.8 | 5/18/2001 | 17 | 21 |
| 786 | 5/19/2001 | 7.7 | 7.8 | 5/19/2001 | 18 | 21 |
| 787 | 5/20/2001 | 7.6 | 7.8 | 5/20/2001 | 18 | 21 |
| 788 | 5/21/2001 | 7.3 | 7.8 | 5/21/2001 | 18 | 21 |
| 789 | 5/22/2001 | 7.3 | 7.8 | 5/22/2001 | 20 | 21 |
| 790 | 5/23/2001 | 7.0 | 7.9 | 5/23/2001 | 19 | 21 |
| 791 | 5/24/2001 | 7.3 | 7.9 | 5/24/2001 | 17 | 21 |
| 792 | 5/25/2001 | 7.3 | 7.9 | 5/25/2001 | 18 | 21 |
| 793 | 5/26/2001 | 6.1 | 7.9 | 5/26/2001 | 18 | 21 |
| 794 | 5/27/2001 | 7.3 | 7.9 | 5/27/2001 | 18 | 21 |
| 795 | 5/28/2001 | 6.4 | 7.9 | 5/28/2001 | 17 | 21 |
| 796 | 5/29/2001 | 7.7 | 7.9 | 5/29/2001 | 19 | 21 |
| 797 | 5/30/2001 | 7.3 | 7.9 | 5/30/2001 | 17 | 21 |
| 798 | 5/31/2001 | 7.6 | 7.9 | 5/31/2001 | 16 | 21 |
| 799 | 6/1/2001 | 7.2 | 7.9 | 6/1/2001 | 17 | 21 |
| 800 | 6/2/2001 | 7.0 | 7.9 | 6/2/2001 | 18 | 21 |
| 801 | 6/3/2001 | 6.9 | 7.9 | 6/3/2001 | 17 | 21 |
| 802 | 6/4/2001 | 7.5 | 7.9 | 6/4/2001 | 18 | 21 |
| 803 | 6/5/2001 | 7.0 | 7.9 | 6/5/2001 | 20 | 21 |
| 804 | 6/6/2001 | 7.2 | 7.9 | 6/6/2001 | 19 | 21 |
| 805 | 6/7/2001 | 7.4 | 7.9 | 6/7/2001 | 19 | 21 |
| 806 | 6/8/2001 | 7.2 | 7.9 | 6/8/2001 | 21 | 21 |
| 807 | 6/9/2001 | 7.1 | 7.9 | 6/9/2001 | 21 | 21 |
| 808 | 6/10/2001 | 7.2 | 7.9 | 6/10/2001 | 19 | 21 |
| 809 | 6/11/2001 | 7.5 | 7.9 | 6/11/2001 | 18 | 21 |
| 810 | 6/12/2001 | 7.5 | 7.9 | 6/12/2001 | 22 | 21 |
| 811 | 6/13/2001 | 7.7 | 7.9 | 6/13/2001 | 23 | 21 |
| 812 | 6/14/2001 | 7.5 | 7.9 | 6/14/2001 | 23 | 21 |
| 813 | 6/15/2001 | 7.7 | 7.9 | 6/15/2001 | 23 | 21 |
| 814 | 6/16/2001 | 7.9 | 7.9 | 6/16/2001 | 23 | 21 |
| 815 | 6/17/2001 | 7.8 | 7.9 | 6/17/2001 | 20 | 21 |
| 816 | 6/18/2001 | 8.2 | 7.9 | 6/18/2001 | 21 | 21 |
| 817 | 6/19/2001 | 7.5 | 7.9 | 6/19/2001 | 21 | 21 |
| 818 | 6/20/2001 | 7.6 | 7.9 | 6/20/2001 | 23 | 21 |
| 819 | 6/21/2001 | 7.8 | 7.9 | 6/21/2001 | 21 | 21 |
| 820 | 6/22/2001 | 7.7 | 7.9 | 6/22/2001 | 22 | 21 |
| 821 | 6/23/2001 | 7.3 | 7.9 | 6/23/2001 | 22 | 21 |
| 822 | 6/24/2001 | 7.4 | 7.9 | 6/24/2001 | 22 | 21 |
| 823 | 6/25/2001 | 7.7 | 7.9 | 6/25/2001 | 20 | 21 |
| 824 | 6/27/2001 | 6.9 | 7.9 | 6/27/2001 | 22 | 21 |
| 825 | 6/28/2001 | 7.5 | 7.9 | 6/28/2001 | 21 | 21 |
| 826 | 6/29/2001 | 7.4 | 7.9 | 6/29/2001 | 23 | 21 |
| 827 | 6/30/2001 | 7.4 | 7.9 | 6/30/2001 | 23 | 21 |
| 828 | 7/1/2001 | 7.6 | 7.9 | 7/1/2001 | 24 | 21 |
| 829 | 7/2/2001 | 7.6 | 7.9 | 7/2/2001 | 22 | 21 |
| 830 | 7/3/2001 | 7.2 | 7.9 | 7/3/2001 | 22 | 21 |
| 831 | 7/4/2001 | 7.2 | 7.9 | 7/4/2001 | 22 | 21 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 832 | 7/5/2001 | 7.9 | 7.9 | 7/5/2001 | 22 | 21 |
| 833 | 7/6/2001 | 6.8 | 7.9 | 7/6/2001 | 21 | 21 |
| 834 | 7/7/2001 | 7.7 | 7.9 | 7/7/2001 | 19 | 22 |
| 835 | 7/8/2001 | 7.6 | 7.9 | 7/8/2001 | 21 | 22 |
| 836 | 7/9/2001 | 7.6 | 7.9 | 7/9/2001 | 22 | 22 |
| 837 | 7/10/2001 | 7.7 | 7.9 | 7/10/2001 | 23 | 22 |
| 838 | 7/11/2001 | 8.0 | 7.9 | 7/11/2001 | 26 | 22 |
| 839 | 7/12/2001 | 7.8 | 7.9 | 7/12/2001 | 20 | 22 |
| 840 | 7/13/2001 | 7.8 | 7.9 | 7/13/2001 | 21 | 22 |
| 841 | 7/14/2001 | 7.6 | 7.9 | 7/14/2001 | 19 | 22 |
| 842 | 7/15/2001 | 7.4 | 8.0 | 7/15/2001 | 19 | 22 |
| 843 | 7/16/2001 | 7.6 | 8.0 | 7/16/2001 | 20 | 22 |
| 844 | 7/17/2001 | 7.9 | 8.0 | 7/17/2001 | 22 | 22 |
| 845 | 7/18/2001 | 7.9 | 8.0 | 7/18/2001 | 23 | 22 |
| 846 | 7/19/2001 | 8.0 | 8.0 | 7/19/2001 | 23 | 22 |
| 847 | 7/20/2001 | 7.8 | 8.0 | 7/20/2001 | 21 | 22 |
| 848 | 7/21/2001 | 7.8 | 8.0 | 7/21/2001 | 20 | 22 |
| 849 | 7/22/2001 | 7.7 | 8.0 | 7/22/2001 | 19 | 22 |
| 850 | 7/23/2001 | 7.7 | 8.0 | 7/23/2001 | 22 | 22 |
| 851 | 7/24/2001 | 8.3 | 8.0 | 7/24/2001 | 25 | 22 |
| 852 | 7/25/2001 | 8.0 | 8.0 | 7/25/2001 | 24 | 22 |
| 853 | 7/26/2001 | 8.1 | 8.0 | 7/26/2001 | 24 | 22 |
| 854 | 7/27/2001 | 7.4 | 8.0 | 7/27/2001 | 24 | 22 |
| 855 | 7/28/2001 | 7.6 | 8.0 | 7/28/2001 | 23 | 22 |
| 856 | 7/29/2001 | 7.0 | 8.0 | 7/29/2001 | 21 | 22 |
| 857 | 7/30/2001 | 6.7 | 8.0 | 7/30/2001 | 22 | 22 |
| 858 | 7/31/2001 | 7.6 | 8.0 | 7/31/2001 | 22 | 22 |
| 859 | 8/1/2001 | 7.6 | 8.0 | 8/1/2001 | 21 | 22 |
| 860 | 8/2/2001 | 7.2 | 8.0 | 8/2/2001 | 21 | 22 |
| 861 | 8/3/2001 | 8.0 | 8.0 | 8/3/2001 | 21 | 22 |
| 862 | 8/4/2001 | 7.2 | 8.0 | 8/4/2001 | 22 | 22 |
| 863 | 8/5/2001 | 7.7 | 8.0 | 8/5/2001 | 23 | 22 |
| 864 | 8/6/2001 | 7.9 | 8.0 | 8/6/2001 | 24 | 22 |
| 865 | 8/7/2001 | 7.7 | 8.0 | 8/7/2001 | 25 | 22 |
| 866 | 8/8/2001 | 7.8 | 8.0 | 8/8/2001 | 26 | 22 |
| 867 | 8/9/2001 | 7.2 | 8.0 | 8/9/2001 | 24 | 22 |
| 868 | 8/10/2001 | 7.3 | 8.0 | 8/10/2001 | 25 | 22 |
| 869 | 8/11/2001 | 7.3 | 8.0 | 8/11/2001 | 24 | 22 |
| 870 | 8/12/2001 | 7.3 | 8.0 | 8/12/2001 | 24 | 22 |
| 871 | 8/13/2001 | 7.8 | 8.0 | 8/13/2001 | 24 | 22 |
| 872 | 8/14/2001 | 7.5 | 8.0 | 8/14/2001 | 24 | 22 |
| 873 | 8/15/2001 | 7.8 | 8.0 | 8/15/2001 | 24 | 22 |
| 874 | 8/16/2001 | 7.6 | 8.0 | 8/16/2001 | 23 | 22 |
| 875 | 8/17/2001 | 7.7 | 8.0 | 8/17/2001 | 24 | 22 |
| 876 | 8/18/2001 | 6.6 | 8.0 | 8/18/2001 | 23 | 22 |
| 877 | 8/19/2001 | 8.1 | 8.0 | 8/19/2001 | 23 | 22 |
| 878 | 8/20/2001 | 7.9 | 8.0 | 8/20/2001 | 24 | 22 |
| 879 | 8/21/2001 | 7.7 | 8.0 | 8/21/2001 | 22 | 22 |
| 880 | 8/22/2001 | 7.7 | 8.0 | 8/22/2001 | 22 | 22 |
| 881 | 8/23/2001 | 7.1 | 8.0 | 8/23/2001 | 22 | 22 |
| 882 | 8/24/2001 | 7.1 | 8.0 | 8/24/2001 | 23 | 22 |
| 883 | 8/25/2001 | 6.9 | 8.0 | 8/25/2001 | 23 | 22 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 884 | 8/26/2001 | 6.9 | 8.0 | 8/26/2001 | 22 | 22 |
| 885 | 8/27/2001 | 8.0 | 8.0 | 8/27/2001 | 23 | 22 |
| 886 | 8/28/2001 | 7.8 | 8.0 | 8/28/2001 | 23 | 22 |
| 887 | 8/29/2001 | 7.8 | 8.0 | 8/29/2001 | 24 | 22 |
| 888 | 8/30/2001 | 8.2 | 8.1 | 8/30/2001 | 24 | 22 |
| 889 | 8/31/2001 | 8.3 | 8.1 | 8/31/2001 | 23 | 22 |
| 890 | 9/1/2001 | 8.1 | 8.1 | 9/1/2001 | 24 | 22 |
| 891 | 9/2/2001 | 7.0 | 8.1 | 9/2/2001 | 21 | 22 |
| 892 | 9/3/2001 | 7.0 | 8.1 | 9/3/2001 | 21 | 22 |
| 893 | 9/4/2001 | 7.6 | 8.1 | 9/4/2001 | 26 | 22 |
| 894 | 9/5/2001 | 8.1 | 8.1 | 9/5/2001 | 23 | 22 |
| 895 | 9/6/2001 | 8.1 | 8.1 | 9/6/2001 | 21 | 22 |
| 896 | 9/7/2001 | 7.6 | 8.1 | 9/7/2001 | 23 | 22 |
| 897 | 9/8/2001 | 6.9 | 8.1 | 9/8/2001 | | |
| 898 | 9/9/2001 | 7.1 | 8.1 | 9/9/2001 | | |
| 899 | 9/10/2001 | 8.3 | 8.1 | 9/10/2001 | | |
| 900 | 9/11/2001 | 8.0 | 8.1 | 9/11/2001 | | |
| 901 | 9/12/2001 | 7.8 | 8.1 | 9/12/2001 | | |
| 902 | 9/13/2001 | 7.8 | 8.1 | 9/13/2001 | | |
| 903 | 9/14/2001 | 8.0 | 8.1 | 9/14/2001 | | |
| 904 | 9/15/2001 | 7.5 | 8.1 | 9/15/2001 | | |
| 905 | 9/17/2001 | 8.2 | 8.1 | 9/17/2001 | | -- |
| 906 | 9/18/2001 | 8.0 | 8.1 | 9/18/2001 | 24 | 23 |
| 907 | 9/19/2001 | 8.2 | 8.1 | 9/19/2001 | 20 | 23 |
| 908 | 9/20/2001 | 8.2 | 8.1 | 9/20/2001 | 21 | 23 |
| 909 | 9/21/2001 | 7.9 | 8.1 | 9/21/2001 | 23 | 23 |
| 910 | 9/24/2001 | 8.3 | 8.1 | 9/24/2001 | 22 | 23 |
| 911 | 9/25/2001 | 7.6 | 8.1 | 9/25/2001 | 24 | 23 |
| 912 | 9/26/2001 | 7.7 | 8.1 | 9/26/2001 | 20 | 23 |
| 913 | 9/27/2001 | 7.7 | 8.1 | 9/27/2001 | 19 | 23 |
| 914 | 9/28/2001 | 7.8 | 8.1 | 9/28/2001 | 19 | 23 |
| 915 | 10/1/2001 | 7.9 | 8.1 | 10/1/2001 | 20 | 23 |
| 916 | 10/2/2001 | 7.8 | 8.1 | 10/2/2001 | 22 | 23 |
| 917 | 10/3/2001 | 8.1 | 8.1 | 10/3/2001 | 20 | 23 |
| 918 | 10/4/2001 | 7.6 | 8.1 | 10/4/2001 | 22 | 23 |
| 919 | 10/5/2001 | 8.0 | 8.2 | 10/5/2001 | 20 | 23 |
| 920 | 10/8/2001 | 7.9 | 8.2 | 10/8/2001 | 17 | 23 |
| 921 | 10/9/2001 | 7.9 | 8.2 | 10/9/2001 | 18 | 23 |
| 922 | 10/10/2001 | 8.2 | 8.2 | 10/10/2001 | 13 | 23 |
| 923 | 10/11/2001 | 7.5 | 8.2 | 10/11/2001 | 20 | 23 |
| 924 | 10/12/2001 | 8.1 | 8.2 | 10/12/2001 | 19 | 23 |
| 925 | 10/15/2001 | 7.7 | 8.2 | 10/15/2001 | 17 | 23 |
| 926 | 10/16/2001 | 7.6 | 8.2 | 10/16/2001 | 20 | 23 |
| 927 | 10/17/2001 | 7.7 | 8.2 | 10/17/2001 | 16 | 23 |
| 928 | 10/18/2001 | 7.5 | 8.2 | 10/18/2001 | 13 | 23 |
| 929 | 10/19/2001 | 7.7 | 8.2 | 10/19/2001 | 16 | 23 |
| 930 | 10/22/2001 | 7.4 | 8.2 | 10/22/2001 | 16 | 23 |
| 931 | 10/23/2001 | 7.4 | 8.2 | 10/23/2001 | 20 | 23 |
| 932 | 10/24/2001 | 7.3 | 8.2 | 10/24/2001 | 21 | 23 |
| 933 | 10/25/2001 | 7.4 | 8.2 | 10/25/2001 | 21 | 23 |
| 934 | 10/26/2001 | 7.7 | 8.2 | 10/26/2001 | 16 | 23 |
| 935 | 10/29/2001 | 7.1 | 8.2 | 10/29/2001 | 16 | 23 |

90th percentile

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 936 | 10/30/2001 | 7.7 | 8.2 | 10/30/2001 | 10 | 23 |
| 937 | 10/31/2001 | 6.9 | 8.2 | 10/31/2001 | 19 | 23 |
| 938 | 11/1/2001 | 7.5 | 8.2 | 11/1/2001 | 17 | 23 |
| 939 | 11/2/2001 | 7.9 | 8.2 | 11/2/2001 | 18 | 23 |
| 940 | 11/5/2001 | 7.3 | 8.2 | 11/5/2001 | 19 | 23 |
| 941 | 11/6/2001 | 7.1 | 8.2 | 11/6/2001 | 19 | 23 |
| 942 | 11/7/2001 | 7.4 | 8.2 | 11/7/2001 | 14 | 23 |
| 943 | 11/8/2001 | 7.0 | 8.2 | 11/8/2001 | 16 | 23 |
| 944 | 11/9/2001 | 7.3 | 8.2 | 11/9/2001 | 17 | 23 |
| 945 | 11/12/2001 | 7.0 | 8.2 | 11/12/2001 | 18 | 23 |
| 946 | 11/13/2001 | 6.6 | 8.3 | 11/13/2001 | 18 | 23 |
| 947 | 11/14/2001 | 7.2 | 8.3 | 11/14/2001 | 13 | 23 |
| 948 | 11/15/2001 | 7.1 | 8.3 | 11/15/2001 | 15 | 23 |
| 949 | 11/16/2001 | 7.3 | 8.3 | 11/16/2001 | 17 | 23 |
| 950 | 11/19/2001 | 7.3 | 8.3 | 11/19/2001 | 16 | 23 |
| 951 | 11/20/2001 | 7.0 | 8.3 | 11/20/2001 | 17 | 23 |
| 952 | 11/24/2001 | 7.3 | 8.3 | 11/24/2001 | 18 | 23 |
| 953 | 11/25/2001 | 7.0 | 8.3 | 11/25/2001 | 17 | 23 |
| 954 | 11/26/2001 | 7.3 | 8.3 | 11/26/2001 | 17 | 23 |
| 955 | 11/27/2001 | 6.9 | 8.3 | 11/27/2001 | 18 | 23 |
| 956 | 11/28/2001 | 7.2 | 8.3 | 11/28/2001 | 19 | 23 |
| 957 | 11/29/2001 | 8.0 | 8.3 | 11/29/2001 | 18 | 23 |
| 958 | 11/30/2001 | 8.3 | 8.3 | 11/30/2001 | 19 | 24 |
| 959 | 12/3/2001 | 7.5 | 8.3 | 12/3/2001 | 18 | 24 |
| 960 | 12/4/2001 | 7.4 | 8.3 | 12/4/2001 | 18 | 24 |
| 961 | 12/5/2001 | 7.8 | 8.3 | 12/5/2001 | 15 | 24 |
| 962 | 12/6/2001 | 7.9 | 8.3 | 12/6/2001 | 16 | 24 |
| 963 | 12/7/2001 | 7.3 | 8.3 | 12/7/2001 | 19 | 24 |
| 964 | 12/9/2001 | 7.0 | 8.3 | 12/9/2001 | 12 | 24 |
| 965 | 12/10/2001 | 7.1 | 8.3 | 12/10/2001 | 9 | 24 |
| 966 | 12/11/2001 | 7.4 | 8.3 | 12/11/2001 | 16 | 24 |
| 967 | 12/12/2001 | 7.4 | 8.3 | 12/12/2001 | 14 | 24 |
| 968 | 12/13/2001 | 6.8 | 8.3 | 12/13/2001 | 17 | 24 |
| 969 | 12/14/2001 | 7.7 | 8.3 | 12/14/2001 | 16 | 24 |
| 970 | 12/17/2001 | 6.9 | 8.3 | 12/17/2001 | 12 | 24 |
| 971 | 12/18/2001 | 6.9 | 8.3 | 12/18/2001 | 18 | 24 |
| 972 | 12/19/2001 | 7.0 | 8.4 | 12/19/2001 | 15 | 24 |
| 973 | 12/20/2001 | 7.9 | 8.4 | 12/20/2001 | 11 | 24 |
| 974 | 12/21/2001 | 7.5 | 8.4 | 12/21/2001 | 11 | 24 |
| 975 | 1/2/2002 | 7.6 | 8.4 | 1/2/2002 | 4 | 24 |
| 976 | 1/7/2002 | 7.0 | 8.4 | 1/7/2002 | 10 | 24 |
| 977 | 1/8/2002 | 6.9 | 8.4 | 1/8/2002 | 9 | 24 |
| 978 | 1/9/2002 | 6.6 | 8.4 | 1/9/2002 | 8 | 24 |
| 979 | 1/10/2002 | 8.0 | 8.4 | 1/10/2002 | 9 | 24 |
| 980 | 1/11/2002 | 7.4 | 8.4 | 1/11/2002 | 12 | 24 |
| 981 | 1/14/2002 | 7.0 | 8.4 | 1/14/2002 | 11 | 24 |
| 982 | 1/15/2002 | 7.5 | 8.5 | 1/15/2002 | 11 | 24 |
| 983 | 1/16/2002 | 7.0 | 8.5 | 1/16/2002 | 10 | 24 |
| 984 | 1/17/2002 | 7.0 | 8.5 | 1/17/2002 | 11 | 24 |
| 985 | 1/18/2002 | 7.1 | 8.6 | 1/18/2002 | 9 | 25 |
| 986 | 1/22/2002 | 7.5 | 8.6 | 1/22/2002 | 10 | 25 |
| 987 | 1/23/2002 | 7.9 | 8.6 | 1/23/2002 | 9 | 25 |

JJ Wright MS Effluent pH & Temp Data from 1/1/1999 to 1/31/2002

| | | | | | | |
|---|---|---|---|---|---|---|
| 988 | 1/24/2002 | 7.1 | 8.7 | 1/24/2002 | 13 | 25 |
| 989 | 1/25/2002 | 7.8 | 8.7 | 1/25/2002 | 12 | 25 |
| 990 | 1/26/2002 | 7.4 | 8.8 | 1/26/2002 | 8 | 25 |
| 991 | 1/28/2002 | 6.8 | 8.8 | 1/28/2002 | 11 | 25 |
| 992 | 1/29/2002 | 6.8 | 8.8 | 1/29/2002 | 14 | 26 |
| 993 | 1/30/2002 | 7.4 | 8.9 | 1/30/2002 | 14 | 26 |
| 994 | 1/31/2002 | 7.2 | 8.9 | 1/31/2002 | 13 | 26 |

**VaFWIS - Department of Game and Inland Fisheries**

38,09,22.9 -77,35,51.0
**is the Search Point**

Submit Cancel

**Search Point**

- **Change** to "clicked" map point
- **Fixed** at 38,09,22.9 - 77,35,51.0

Display **Search Point** is not in center at map center

**Show Position Rings**

Yes No

1 mile and 1/4 mile at the **Search Point**

**Show Search Area**

Yes No

2 Search distance miles radius

**Search Point** is at map center

**Base Map** Choices

Topography

**Map Overlay** Choices

Current List: Position, Search

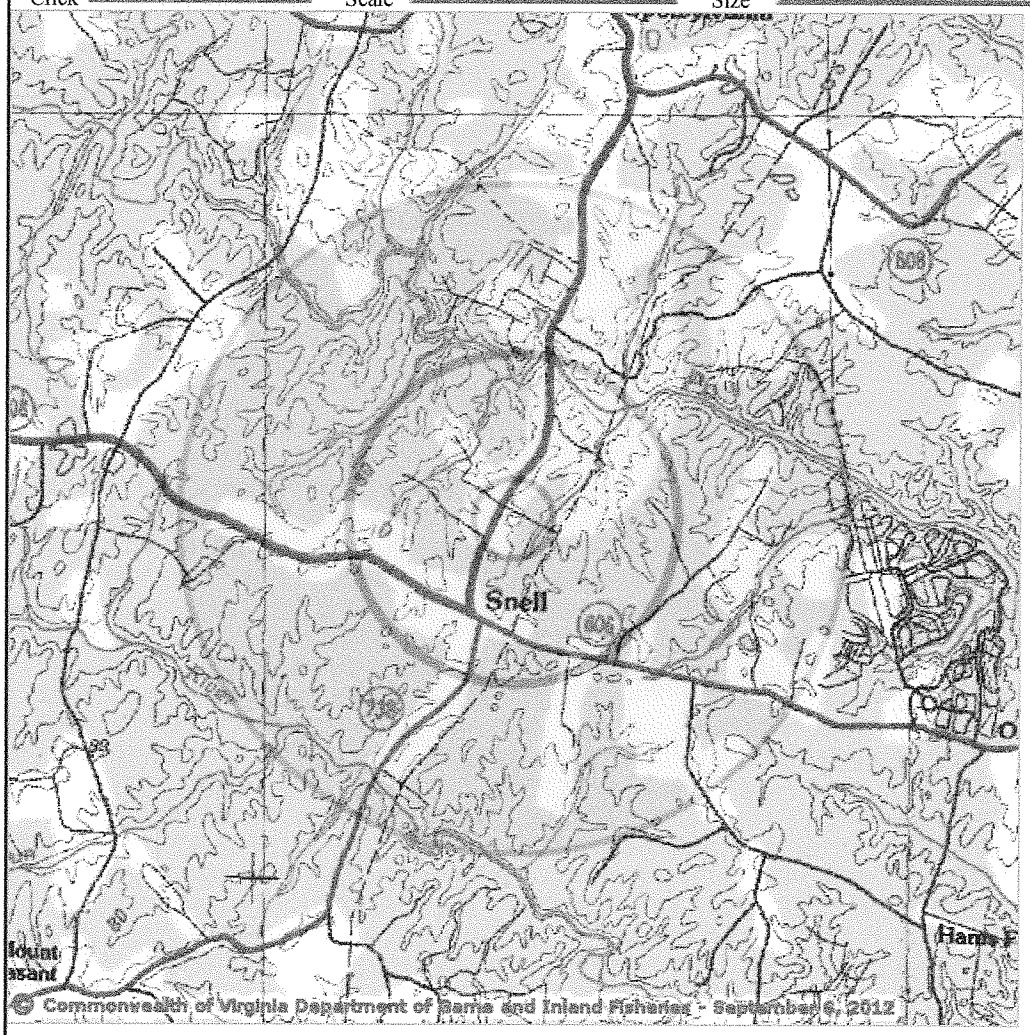
**Map Overlay Legend**

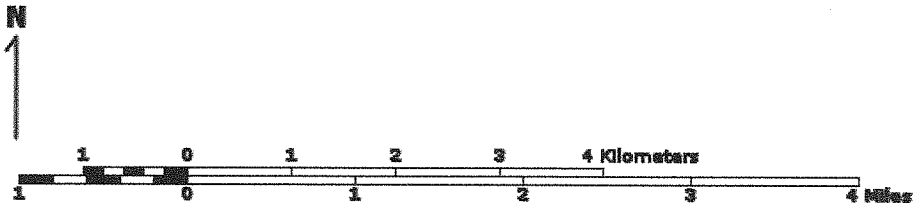
**Position Rings 1 mile and 1/4 mile at the Search Point**

**2 mile radius Search Area**

Refresh Browser Page

Map Click Pan | Map Scale In Zoom Out | Screen Size Small Size Big | Help




Point of Search 38,09,22.9 -77,35,51.0

Map Location 38,09,22.9 -77,35,51.0

Select **Coordinate System:**

- Degrees,Minutes,Seconds Latitude - Longitude
- Decimal Degrees Latitude - Longitude
- Meters UTM NAD83 East North Zone
- Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 267615 and top 4231152. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Attachment 8

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2012-09-06 11:30:45 (qa/qc June 12, 2012 14:14 - tn=424357 dist=3218 I )

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
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# VaFWIS Initial Project Assessment Report Compiled on 9/6/2012, 11:27:41 AM

Help

Known or likely to occur within a **2 mile radius around point 38,09,23.0 77,35,51.0** in **177 Spotsylvania County, VA**

View Map of Site Location

393 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (16 species with Status* or Tier I** or Tier II** )

| BOVA Code | Status* | Tier** | Common Name | Scientific Name | Confirmed | Database(s) |
|---|---|---|---|---|---|---|
| 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | Yes | TEWaters,Habitat,SppObs |
| 040129 | ST | I | Sandpiper, upland | Bartramia longicauda | | BOVA |
| 040293 | ST | I | Shrike, loggerhead | Lanius ludovicianus | | BOVA |
| 040093 | FSST | II | Eagle, bald | Haliaeetus leucocephalus | | BOVA |
| 040292 | ST | | Shrike, migrant loggerhead | Lanius ludovicianus migrans | | BOVA |
| 100248 | FS | I | Fritillary, regal | Speyeria idalia idalia | | BOVA |
| 060029 | FS | III | Lance, yellow | Elliptio lanceolata | Yes | SppObs |
| 030063 | CC | III | Turtle, spotted | Clemmys guttata | | BOVA |
| 010077 | | I | Shiner, bridle | Notropis bifrenatus | Yes | BOVA,Habitat,SppObs |
| 040225 | | I | Sapsucker, yellow-bellied | Sphyrapicus varius | | BOVA |
| 040319 | | I | Warbler, black-throated green | Dendroica virens | | BOVA |
| 010432 | | II | Madtom, spotted-margin | Noturus insignis ssp 1 | Yes | SppObs |
| 040052 | | II | Duck, American black | Anas rubripes | | BOVA |
| 040105 | | II | Rail, king | Rallus elegans | | BOVA |
| 040320 | | II | Warbler, cerulean | Dendroica cerulea | | BOVA |
| 040266 | | II | Wren, winter | Troglodytes troglodytes | | BOVA |
| 030068 | | III | Turtle, eastern box | Terrapene carolina carolina | | BOVA |
| 040094 | | III | Harrier, northern | Circus cyaneus | | BOVA |
| 040034 | | III | Heron, tricolored | Egretta tricolor | | BOVA |
| 040036 | | III | Night-heron, yellow-crowned | Nyctanassa violacea violacea | | BOVA |

To view **All 393 species** View 393

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Bat Colonies or Hibernacula: **Not Known**

**Anadromous Fish Use Streams**

N/A

**Colonial Water Bird Survey**

N/A

**Threatened and Endangered Waters** ( 1 Reach )

View Map of All Threatened and Endangered Waters

| Stream Name | T&E Waters Species | | | | | | View Map |
|---|---|---|---|---|---|---|---|
| | Highest TE* | BOVA Code, Status*, Tier**, Common & Scientific Name | | | | | |
| Po River (02080105) | FESE | 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | Yes |

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

N/A

**Bald Eagle Nests**

N/A

**Habitat Predicted for Aquatic WAP Tier I & II Species** ( 4 Reaches )

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

| Stream Name | Tier Species | | | | | | View Map |
|---|---|---|---|---|---|---|---|
| | Highest TE* | BOVA Code, Status*, Tier**, Common & Scientific Name | | | | | |
| Ta River (20801051) | FESE | 010077 | | I | Shiner, bridle | Notropis bifrenatus | Yes |
| | | 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bluff Run (20801051) | FESE | 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | Yes |
| Po River (20801051) | FESE | 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | Yes |
| Ta River (20801051) | FESE | 060003 | FESE | II | Wedgemussel, dwarf | Alasmidonta heterodon | Yes |

**Habitat Predicted for Terrestrial WAP Tier I & II Species**

N/A

**Public Holdings:**

N/A

Compiled on 9/6/2012, 11:27:41 AM I424356.0 report=IPA searchType= R dist= 3218 poi= 38,09,23.0 77,35,51.0

PixelSize=64; Anadromous=0.043838; BECAR=0.035093; Bats=0.02395; Buffer=0.180294; County=0.084204; Impediments=0.030886; Init=0.219337; PublicLands=0.045603; SppObs=1.675736; TEWaters=0.087101; TierReaches=0.102792; TierTerrestrial=0.079025; Total=2.468571; Trout=0.039066

9/6/2012 12:19:32 PM

Facility = J J Wright Educational & Cultural Center
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 6.95
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

# observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
# < Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 6.95
Average Weekly limit = 6.95
Average Monthly LImit = 6.95

The data are:

9

VA 0061301

# COMMONWEALTH of VIRGINIA

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193-1453
(703) 583-3800 *fax* (703) 583-3801
http://www.deq.state.va.us

Dennis H. Treacy
Director

Gregory L. Clayton
Regional Director

April 29, 1999

Dr. James A. Meyer, Ed.D.
Assistant Superintendent of Schools
Spotsylvania County School Board
7565 Courthouse Drive
Spotsylvania, VA 22553

RE: Plans and Specifications for the Berkeley Elementary and J.J. Wright Middle Schools Wastewater Treatment Facilities

Dear Dr. Meyer:

The plans and specifications for the above-referenced project are approved by the Department of Environmental Quality. This action is in accordance with a letter report from the Virginia Department of Health **conditionally approving** this project. A copy is enclosed for your information. You are expected to comply with the condition that the Operation and Maintenance Manual, Sludge Management Plan, and the Sand Filter Closure Plan be submitted to the Department of Health and the Department of Environmental Quality for review and approval prior to the issuance of a final Certificate to Operate.

This document constitutes your Certificate to Construct as required by Section 2.04.04 of the Virginia *Sewerage Regulations*.

As the owner of these facilities you will be required to comply with the following sections of the Virginia *Sewerage Regulations*: Section 2.05 (Statement Required Upon Completion of Construction) and Section 2.06 (Issuance of the Certificate to Operate).

The Department of Environmental Quality approval does not relieve the owner of the responsibility of operating the facility in a consistent manner to meet the facility performance requirements or the responsibility for the correction of design and/or operation deficiencies. Nor does this approval relieve the owner from meeting all other applicable laws and regulations.

If you have any questions, or if in the next thirty (30) days you or your engineers would like to pick up and retain our copy of the approved plans and specifications, please contact Anna Tuthill at (703) 583-3837.

Sincerely,

for Dennis H. Treacy
Director

Enclosures

cc: E.R. Sutherland, Clifford and Associates
Doug Crooks, Superintendent of Wastewater, Spotsylvania County
Cal Sawyer, P.E., VDH--Division of Wastewater Engineering
J. S. Desai, P.E., VDH-Culpeper
File

RECEIVED
APR 8 1999
Northern VA. Region
Dept. of Env. Quality

# COMMONWEALTH of VIRGINIA

*Department of Health*
P O BOX 2448
RICHMOND, VA 23218
TDD 1-800-828-1120

APR 07 1999

SUBJECT: Spotsylvania County
Sewerage: Spotsylvania County Schools
Berkeley Elementary and
J. J. Wright Middle Schools WTF

Department of Environmental Quality
Water Regional Office
13901 Crown Court
Woodbridge, Virginia 22193

Attention: Mr. Gregory L. Clayton
Regional Director

Dear Mr. Clayton:

The Preliminary Engineering Report (PER), plans and specifications, for the upgrade (nitrification) of the Wastewater Treatment Facilities for the Berkeley Elementary and J. J. Wright Middle Schools, Spotsylvania County School Board as prepared by Clifford and Associates have been received by this Department. The PER includes pages 1 through 16 entitled Wastewater Treatment Upgrade and is dated June 1998. The plans include sheets 1 through 6 entitled Spotsylvania County Public Schools, Wastewater Treatment Facilities Improvement and are dated October 1998.

This project has been designed for average flows of .0075 and .0053 MGD for J. J. Wright and Berkeley schools respectively or equivalent school populations of 553 and 362 students.

The proposed facilities have been designed to comply with the existing effluent limits of 24 mg/l BOD, 24 mg/l TSS and new, May 30, 2001, standards for ammonia for Berkeley of 1.7 mg/l and for J. J. Wright of 1.1 mg/l. The project consists of adding extended aeration systems for nitrification and removal of the existing sand filters.

Although the design flow at the J. J. Wright School was projected as 7,500 gpd, the PER lists the permitted flow at 15,000 gpd which should be adjusted accordingly to reflect the actual design capacity.

SUBJECT: Spotsylvania County
Sewerage: Spotsylvania County Schools
Berkeley Elementary and
J. J. Wright Middle Schools WTF

The design consultant also investigated the alternative of pumping to a POTW; but, because of cost, selected the on-site treatment and discharge option.

The evaluation review of these plans and specifications has been confined to technical requirements and design criteria as stipulated in the Commonwealth of Virginia *Sewerage Regulations*. The Operation and Maintenance Manual should include a narrative description of the processes, analyses and calculations necessary to monitor performance, the expected ranges of results, and recommendations for adjustments if those expectations are not met. This guidance is important because the effluent from the septic tank is considered to be equivalent to that of a primary clarifier. The relative concentrations of COD and ammonia are marginally suited for nitrification.

In accordance with the State Water Control Law, Code of Virginia 1950, as amended Title 62.1, Chapter 3.1, Article 4, Section 62.1-44.1.9, Paragraph 3, this letter report is to advise that the previously mentioned PER, plans and specifications are technically adequate and are recommended for approval with the condition that the Operation and Maintenance Manual, Sludge Management Plan, and the Sand Filter Closure Plan be submitted to the Department of Health and Department of Environmental Quality for review and approval prior to the issuance of a final Certificate to Operate.

Issuance of a construction permit or any further action or decision is a matter for your office.

The Department will forward one copy of the PER, plans and specifications with State Health Department stickers to the Department of Environmental Quality's Water Regional Office in Woodbridge and one copy to the owner.

Notification of the Department of Environmental Quality's action should be transmitted to Dr. James Meyer, Spotsylvania County Schools, 7565 Courthouse Drive, Spotsylvania, Virginia 22553; Mr. E. R. Sutherland, Clifford and Associates, 150 C. Olde Greenwich Drive, Fredericksburg, Virginia 22401-4098; the Local Building Code Official; Mr. J. S. Desai, Virginia Department of Health, Culpeper Field Office, 400 Main Street, Culpeper, Virginia 22701; and this Office.

SUBJECT: Spotsylvania County
Sewerage: Spotsylvania County Schools
Berkeley Elementary and
J. J. Wright Middle Schools WTF

Enclosed is a copy of the letters of transmittal dated September 15, 1998 and November 5, 1998.

By direction of the Acting State Health Commissioner.

Sincerely,

C. M. Sawyer, P.E., Director
Division of Wastewater Engineering

c: Dr. James Meyer-Spotsylvania County Schools
Mr. E. R. Sutherland-Clifford and Associates
Mr. J. S. Desai-Culpeper Field Office
Spotsylvania County Health Department

FACILITY: John J Wright Middle School STP
VPDES #: VA0061298

Ammonia Calculation - Acute Ammonia Criteria for Freshwater

| | Temperature | pH | | TIER INFORMATION: 1 |
|---|---|---|---|---|
| DATA ENTRY:-> | 22 | 8.1 | | |

FT
FT=10^((.03)(20-T) = 0.8709636

FPH
FPH=1 if 8.0<=pH<=9.0 = 1.0000000
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = NA
FPH= 1

Acute Criteria Concentration=.52/FT/FPH/2 = 0.2985199

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Acute Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0546650
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C,) pKa = 9.3378765
Total Acute Ammonia Criteria = Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Acute Ammonia Criteria = 0.2985199 / 0.054664989 = Total Ammonia = 5.4608982 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL ACUTE N-NH3 5.4608982 X .824 4.4997801 MG/L = 4.50

Ammonia Calculation - Chronic Ammonia Criteria for Freshwater

| | Temperature | pH | | TIER INFORMATION: 1 |
|---|---|---|---|---|
| DATA ENTRY:-> | 22 | 8.1 | | |

FT
FT=10^((.03)(20-T) = 0.8709636

FPH
FPH=1 if 8.0<=pH<=9.0 = 1.0000000
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = NA
FPH= 1

Ratio
Ratio = 13.5 if 7.7<=pH<=9.0 = 13.5
Ratio = 20.25 x (10^(7.7-pH))/(1+(10^(7.4-pH)) if 6.5<=pH<7.7 = NA

Attachment 11

Ratio = 13.5

Chronic Criteria Concentration=.8/FT/FPH/RATIO = 0.0680387

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Chronic Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0546650
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C) pKa = 9.3378765
Total Chronic Ammonia Criteria=Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Chronic Ammonia Criteria = 0.0680387 / 0.0546650 = Total Ammonia = 1.244649167 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL CHRONIC N-NH3 1.2446492 X .824 1.0255909 MG/L = 1.03

Revised 12/03/97: (i:wdbr1\common\permits\model\newamm)

9/5/2012 4:33:25 PM

Facility = JJ Wright
Chemical = ammonia
Chronic averaging period = 30
WLAa = 4.5
WLAc =
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

# observations = 1
Expected Value = 10
Variance = 36
C.V. = 0.6
97th percentile daily values = 24.3341
97th percentile 4 day average = 16.6379
97th percentile 30 day average= 12.0605
# < Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 4.5
Average Weekly limit = 4.5
Average Monthly LImit = 4.5

The data are:

10

9/6/2012 3:47:03 PM

Facility = J J Wright Educational & Cultural Center
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 19
WLAc =
Q.L. = 100
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

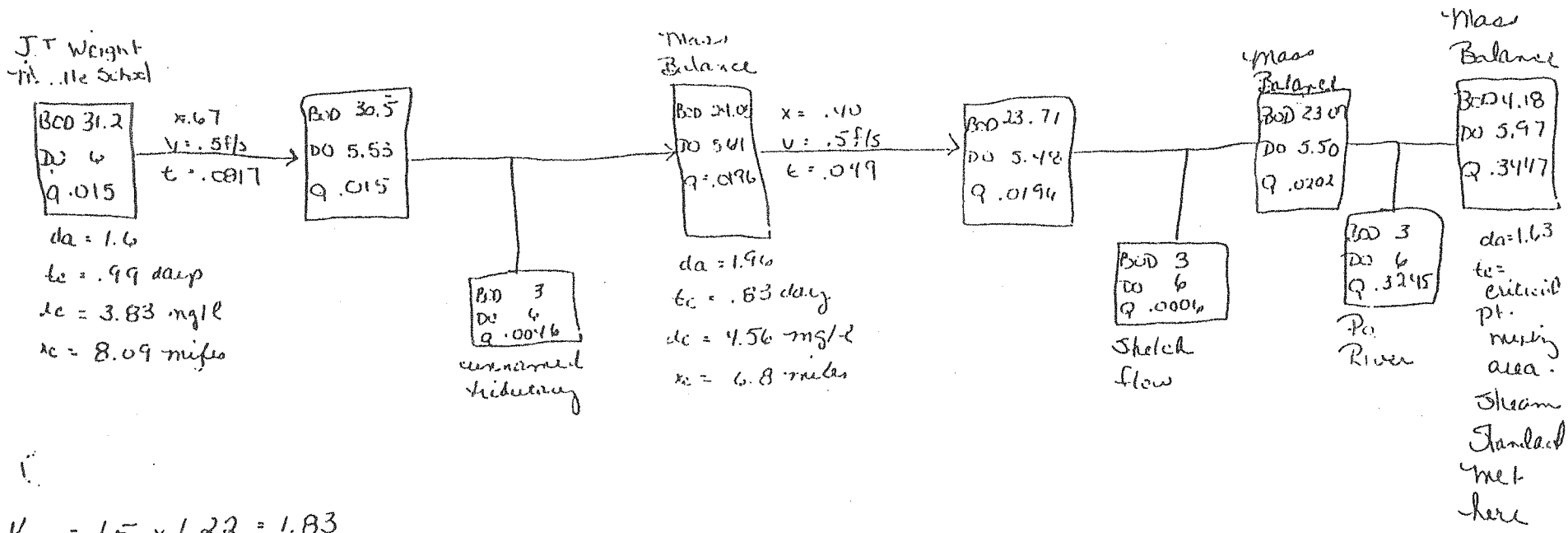
# observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
# < Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 19
Average Weekly limit = 11.3335966321422
Average Monthly LImit = 9.41680211348591

The data are:

200

J. J. Weight Middle School - Spotsylvania → Lyck Basin
Unnamed tributary to Po River
Run for $BOD_5$ - 24 mg/l




$K_{a30} = 1.5 \times 1.22 = 1.83$

$K_{d30} = .2 \times 1.48 = .296$

$L_u = 24 \times 1.3 = 31.2$

JC 1-28-77

Attachment 13

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Spotsylvania County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2012 to 5:00 p.m. on XXX, 2012

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Spotsylvania County School Board, 8020 River Stone Drive, Fredericksburg, VA 22407, VA0061298

PROJECT DESCRIPTION: Spotsylvania County School Board has applied for a reissuance of a permit for the public John J. Wright Educational and Cultural Center. The applicant proposes to release treated sewage wastewaters from public school at a rate of 0.015 million gallons per day into a water body. The sludge will be disposed by hauling it to the Massaponax Wastewater Treatment Plant for final disposal. The facility proposes to release treated sewage in the unnamed tributary to Po River Spotsylvania County in the York River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, $BOD_5$, Total Residual Chlorine, Total Suspended Solids, Ammonia, and Dissolved Oxygen.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Joan C. Crowther
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

***State "Transmittal Checklist" to Assist in Targeting***
***Municipal and Industrial Individual NPDES Draft Permits for Review***

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

| | |
|---|---|
| Facility Name: | John J. Wright Educational and Cultural Center |
| NPDES Permit Number: | VA0061298 |
| Permit Writer Name: | Joan C. Crowther |
| Date: | September 7, 2012 |

**Major** [ ] **Minor** [X ] **Industrial** [ ] **Municipal** [ X ]

| **I.A. Draft Permit Package Submittal Includes:** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Permit Application? | X | | |
| 2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)? | X | | |
| 3. Copy of Public Notice? | X | | |
| 4. Complete Fact Sheet? | X | | |
| 5. A Priority Pollutant Screening to determine parameters of concern? | X | | |
| 6. A Reasonable Potential analysis showing calculated WQBELs? | X | | |
| 7. Dissolved Oxygen calculations? | X | | |
| 8. Whole Effluent Toxicity Test summary and analysis? | | | X |
| 9. Permit Rating Sheet for new or modified industrial facilities? | | | X |

| **I.B. Permit/Facility Characteristics** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Is this a new, or currently unpermitted facility? | | X | |
| 2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit? | X | | |
| 3. Does the fact sheet **or** permit contain a description of the wastewater treatment process? | X | | |
| 4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? | X | | |
| 5. Has there been any change in streamflow characteristics since the last permit was developed? | | X | |
| 6. Does the permit allow the discharge of new or increased loadings of any pollutants? | | X | |
| 7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses? | X | | |
| 8. Does the facility discharge to a 303(d) listed water? | | X | |
| a. Has a TMDL been developed and approved by EPA for the impaired water? | | | X |
| b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit? | | | X |
| c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? | | | X |
| 9. Have any limits been removed, or are any limits less stringent, than those in the current permit? | | X | |
| 10. Does the permit authorize discharges of storm water? | | X | |
| | | | |

| I.B. Permit/Facility Characteristics – cont. | Yes | No | N/A |
|---|---|---|---|
| 11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production? | | X | |
| 12. Are there any production-based, technology-based effluent limits in the permit? | | X | |
| 13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures? | | X | |
| 14. Are any WQBELs based on an interpretation of narrative criteria? | | X | |
| 15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations? | | X | |
| 16. Does the permit contain a compliance schedule for any limit or condition? | | X | |
| 17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)? | | X | |
| 18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated? | X | | |
| 19. Is there any indication that there is significant public interest in the permit action proposed for this facility? | | X | |
| 20. Have previous permit, application, and fact sheet been examined? | X | | |

**Part II. NPDES Draft Permit Checklist**

**Region III NPDES Permit Quality Checklist – for POTWs**
*(To be completed and included in the record only for POTWs)*

| **II.A. Permit Cover Page/Administration** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)? | X | | |
| 2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? | X | | |

| **II.B. Effluent Limits – General Elements** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? | X | | |
| 2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit? | X | | |

| **II.C. Technology-Based Effluent Limits (POTWs)** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH? | X | | |
| 2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133? | X | | |
| a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved? | | | X |
| 3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)? | X | | |
| 4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits? | X | | |
| 5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)? | | X | |
| a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations? | | | X |

| **II.D. Water Quality-Based Effluent Limits** | **Yes** | **No** | **N/A** |
|---|---|---|---|
| 1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality? | X | | |
| 2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL? | | | X |
| 3. Does the fact sheet provide effluent characteristics for each outfall? | X | | |
| 4. Does the fact sheet document that a "reasonable potential" evaluation was performed? | X | | |
| a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures? | X | | |
| b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone? | X | | |
| c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"? | X | | |
| d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)? | | X | |
| e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined? | X | | |

| II.D. Water Quality-Based Effluent Limits – cont. | Yes | No | N/A |
|---|---|---|---|
| 5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet? | X | | |
| 6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established? | X | | |
| 7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? | X | | |
| 8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy? | X | | |

| II.E. Monitoring and Reporting Requirements | Yes | No | N/A |
|---|---|---|---|
| 1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations? | X | | |
| a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? | | | |
| 2. Does the permit identify the physical location where monitoring is to be performed for each outfall? | X | | |
| 3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements? | | X | |
| 4. Does the permit require testing for Whole Effluent Toxicity? | | X | |

| II.F. Special Conditions | Yes | No | N/A |
|---|---|---|---|
| 1. Does the permit include appropriate biosolids use/disposal requirements? | X | | |
| 2. Does the permit include appropriate storm water program requirements? | | | X |

| II.F. Special Conditions – cont. | Yes | No | N/A |
|---|---|---|---|
| 3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements? | | | X |
| 4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? | X | | |
| 5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]? | | X | |
| 6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)? | | X | |
| a. Does the permit require implementation of the "Nine Minimum Controls"? | | | X |
| b. Does the permit require development and implementation of a "Long Term Control Plan"? | | | X |
| c. Does the permit require monitoring and reporting for CSO events? | | | X |
| 7. Does the permit include appropriate Pretreatment Program requirements? | | X | |

| II.G. Standard Conditions | Yes | No | N/A |
|---|---|---|---|
| 1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions? | X | | |

**List of Standard Conditions – 40 CFR 122.41**

| | | |
|---|---|---|
| Duty to comply | Property rights | Reporting Requirements |
| Duty to reapply | Duty to provide information | Planned change |
| Need to halt or reduce activity not a defense | Inspections and entry | Anticipated noncompliance |
| | Monitoring and records | Transfers |
| Duty to mitigate | Signatory requirement | Monitoring reports |
| Proper O & M | Bypass | Compliance schedules |
| Permit actions | Upset | 24-Hour reporting |
| | | Other non-compliance |

| | | | |
|---|---|---|---|
| 2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]? | | X | |

**Part III. Signature Page**

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

| | |
|---|---|
| Name | Joan C. Crowther |
| Title | VPDES Permit Writer |
| Signature | |
| Date | September 7, 2012 |