

DEEP CREEK HYDROELECTRIC STATION
MARYLAND DEPARTMENT of the ENVIRONMENT
WATER APPROPRIATION
PERMIT NO. GA92S009 (03)
GARRETT COUNTY, MARYLAND

2002 ANNUAL REPORT

January 2003

BY

RELIANT ENERGY MARYLAND HOLDINGS, LLC

**DEEP CREEK HYDROELECTRIC STATION
MDE WATER APPROPRIATION PERMIT NO. GA92S009 (03)
ANNUAL REPORT for 2001**

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DEEP CREEK HYDROELECTRIC STATION
MDE WATER APPROPRIATION PERMIT NO. GA92S009 (03)
ANNUAL REPORT for 2002

1.0 SUMMARY

Reliant Energy Maryland Holdings, LLC (Permittee) holds Water Appropriation Permit GA92S009(03) issued by the Maryland Department of the Environment (Department). Permit GA92S009(03) provides for the continued operation of the Deep Creek Hydroelectric Station.

Permit Condition 23 requires the Permittee to submit an annual report to the Department, including data and information as specified in Permit Conditions 15-19 and 21.

1.1 Lake Level Monitoring

Appendix A contains daily water level data for 2002. Lake levels exceeded the desired end of the month Upper Rule Band by 0.25 feet in April, and by 0.9 feet in June. The maximum desirable reservoir levels at the end of each month were attained in January through March, May, July, August and October. Reservoir levels were 1.1 feet, 1.36 feet and 1.70 feet below the upper rule band in September, November, and December respectively. Water levels in the reservoir were maintained above the Lower Rule Band for the entire year, with the exception of several days in July between the 2nd and the 13th, and the 16th and 22nd.

The reservoir levels were near the Upper Rule Band starting at the end of February, throughout March, and then exceeded the upper rule band from the end of March until early May. Rainfall was interspersed, often delivering in excess of one inch, and as much as 3.7 inches in a few days time, throughout the three month period. The rainfall total for the period was 19.25 inches. The rain was enough to keep the reservoir from operating within the rule bands between March 22 and May 31, on May 9 and 19, and June 2.

Levels were then attained until a period between July 2 and July 13, July 16 and July 21, when elevations just slightly under the targeted elevation of the Lower Rule Band, ranging between 0.003 feet and 0.068 feet. The elevations for the remainder of the year occurred within the rule bands, except for July 19 and November 6 because of almost 1” of rainfall preceding each of those dates. The highest reservoir level occurred on April 29-30, and again on May 2-3, at an elevation of 2461.2 feet, 0.3 feet above the Upper Rule Band.

1.2 Temperature Monitoring

The Permittee monitored water temperature in the Youghiogheny River in accordance with “Deep Creek Station, Water Temperature Enhancement Plan” (approved June 8, 1996, revised September 2001). The Plan was designed to maintain river water temperatures below 25°C in the Youghiogheny River. The Permittee released water in accordance with the Water Temperature Enhancement Plan on 26 days in 2002. River water temperatures exceeded 25°C on June 23, 26, 27 and 30; July 2, 4, 9, 17, 20, 21 and 24; and August 11, 17, 18, 21 and 22.

The temperature enhancement protocol was not required on July 16 and 31 since river flows at Oakland exceeded 100 cfs, and the protocol did not require releases on August 4, 6, and 8, as temperatures were not predicted to exceed 25°C. All other releases were made according to the protocol. The duration of the release on June 12 was longer than required, as the lake level had exceeded the upper rule band due to rainfall.

Days when temperatures exceeded 25°C and days when temperature enhancement releases were made are summarized in Appendix B. Log sheets for each of these dates also are enclosed in Appendix B.

1.3 Minimum Flow Release Monitoring

The Permittee operated the flow bypass in accordance with the "Deep Creek Station Flow Bypass Operation Protocol" (May 1995, revised September 2001). Minimum bypass flows were required on 34 dates between July 8 and October 10, 2002. Flows required by the protocol ranged from 2-cfs to 8-cfs in July, August, and October. September required operation of the bypass throughout almost the entire month, with 12 days discharging between 15-cfs and 20-cfs. Appendix C provides a summary of flow bypass data for 2001. A record of the U.S. Geological Survey data from the Oakland gaging station also is presented in Appendix C.

1.4 Dissolved Oxygen (DO) Monitoring

The Permittee operated the dissolved oxygen enhancement weir during 2002 in accordance with the "Dissolved Oxygen (DO) Enhancement Operations and Monitoring Protocol" approved by the Department on January 6, 1995. Data obtained from DO monitoring in 2002 are included in Appendix D.

The DO levels in the tailrace first fell below 6.0 mg/l on July 19, when the Permittee measured DO levels of 5.78 mg/l. Additionally there were two dates where DO levels measured 5.97 mg/l on August 2 and again on August 26. Both units were operating on all three dates. However two of the four sluice gates were closed for the later two readings. DO values were low on August 30 and September 6, (6.05 mg/l and 6.02 mg/l respectively) but above the standard of 6.0

mg/l. August 23 and September 9 both had a DO reading of exactly 6.0 mg/l. All remaining readings were above 6.0 mg/l.

1.5 **Releases Unsuitable for Whitewater Recreation**

Permit Condition 19 outlines several operating rules designed to enhance whitewater boating opportunities in the Youghiogheny River. One operating rule restricts generation during certain times of the day unless flows suitable for whitewater boating also occur.

The specific criteria for this operating rule:

- apply only from April 15 through October 15,
- apply only when the lake is between the upper and lower rule bands,
- may be suspended during emergency conditions described in Condition 14, and
- prohibit releases between 1600 hours and 0800 hours of the following morning unless:
 1. a release providing three consecutive hours suitable for whitewater boating occurs during the 0800 to 1600 hour period immediately preceding the release.
 2. a release providing three consecutive hours suitable for whitewater boating occurs during the 0800 to 1600 hour period immediately following the release.

Condition 19 requires the Permittee to document "times and dates when generation releases not suitable for whitewater recreation occurred." Using the criteria above, generation releases not suitable for whitewater recreation did not occur during 2002.

1.6 **Zebra Mussel Monitoring**

Artificial substrates placed at the station intake area during 2002 showed no signs of the zebra mussel infestation.

APPENDIX A

LAKE LEVEL DATA

Deep Creek Lake Level 2002

Month	Day	Lake Level	Rain Fall	Month	Day	Lake Level	Rain Fall	Month	Day	Lake Level	Rain Fall
Jan	1	2455.8	0.00	Feb	1	2457.6	0.20	Mar	1	2457.8	0.00
	2	2456.0	0.00		2	2457.6	0.00		2	2457.8	0.45
	3	2456.0	0.00		3	2457.6	0.00		3	2457.9	0.10
	4	2455.9	0.00		4	2457.6	0.25		4	2457.9	0.05
	5	2455.9	0.00		5	2457.6	0.00		5	2457.9	0.00
	6	2455.9	5.00		6	2457.6	0.00		6	2457.9	0.00
	7	2455.9	0.13		7	2457.5	0.12		7	2457.9	0.00
	8	2456.0	0.00		8	2457.5	0.00		8	2457.9	0.00
	9	2456.0	0.00		9	2457.5	0.00		9	2457.9	0.00
	10	2456.0	0.07		10	2457.5	0.60		10	2457.9	0.00
	11	2456.1	0.50		11	2457.5	0.20		11	2457.9	0.00
	12	2456.1	0.00		12	2457.7	0.00		12	2457.9	0.00
	13	2456.2	0.05		13	2457.6	0.00		13	2457.9	0.10
	14	2456.2	0.05		14	2457.6	0.00		14	2458.0	0.00
	15	2456.3	0.02		15	2457.5	0.00		15	2458.0	0.05
	16	2456.3	0.00		16	2457.5	0.20		16	2458.0	1.20
	17	2456.3	0.00		17	2457.6	0.06		17	2458.1	0.20
	18	2456.3	0.00		18	2457.6	0.00		18	2458.2	0.40
	19	2456.4	0.25		19	2457.7	0.00		19	2458.3	0.55
	20	2456.4	0.00		20	2457.7	0.20		20	2458.3	1.20
	21	2456.4	0.00		21	2457.7	0.00		21	2458.9	0.10
	22	2456.5	0.00		22	2457.7	0.25		22	2459.0	0.00
	23	2456.5	0.00		23	2457.7	0.00		23	2459.2	0.00
	24	2456.6	1.25		24	2457.7	0.00		24	2459.3	0.00
	25	2456.9	0.00		25	2457.7	0.00		25	2459.4	0.00
	26	2457.1	0.00		26	2457.8	0.10		26	2459.5	0.80
	27	2457.2	0.00		27	2457.8	0.15		27	2459.5	0.03
	28	2457.3	0.00		28	2457.8	0.00		28	2459.5	0.00
	29	2457.3	0.00						29	2459.5	0.00
	30	2458.2	0.00						30	2459.5	0.20
	31	2457.5	0.00						31	2459.5	1.00
Total			7.32				2.33				6.43

Deep Creek Lake Level 2002

Month	Day	Level	Change	Month	Day	Level	Change	Month	Day	Level	Change
Apr	1	2459.7	0.05	May	1	2461.1	0.15	Jun	1	2460.9	0.70
	2	2459.8	0.00		2	2461.2	0.78		2	2461.1	0.00
	3	2459.9	0.05		3	2461.2	0.00		3	2460.7	0.00
	4	2460.0	0.00		4	0.0	0.00		4	2460.7	0.40
	5	2460.0	0.00		5	0.0	0.00		5	2460.6	0.07
	6	2460.1	0.05		6	2460.9	0.10		6	2460.6	0.45
	7	2460.2	0.00		7	2460.9	0.80		7	2460.6	0.00
	8	2460.2	0.00		8	2461.0	0.37		8	2460.7	0.00
	9	2460.2	0.40		9	2461.1	0.00		9	2460.6	0.00
	10	2460.2	0.00		10	2460.9	0.00		10	2460.6	0.00
	11	2460.3	0.00		11	2460.9	0.00		11	2460.6	0.00
	12	2460.3	0.00		12	2460.8	0.37		12	2460.5	0.43
	13	2460.3	0.20		13	2461.0	0.50		13	2460.5	0.51
	14	2460.4	0.90		14	2460.9	0.30		14	2460.5	0.51
	15	2460.5	0.35		15	2461.0	0.10		15	2460.5	0.00
	16	2460.6	0.00		16	2461.0	0.00		16	2460.5	0.00
	17	2460.6	0.00		17	2460.9	0.45		17	2460.5	0.15
	18	2460.7	0.00		18	2461.0	1.42		18	2460.4	0.00
	19	2460.7	0.75		19	2461.1	0.12		19	2460.4	0.00
	20	2460.7	0.25		20	2461.0	0.04		20	2460.4	0.00
	21	2460.8	1.25		21	2461.0	0.00		21	2460.4	0.00
	22	2461.0	0.15		22	2461.0	0.00		22	2460.4	0.00
	23	2460.9	0.00		23	2461.0	0.00		23	2460.4	0.00
	24	2461.1	0.00		24	2461.0	0.35		24	2460.3	0.00
	25	2461.0	0.25		25	2460.9	0.00		25	2460.2	0.00
	26	2460.9	0.00		26	2461.0	0.00		26	2460.1	0.00
	27	2460.9	0.30		27	2461.0	0.00		27	2460.1	0.35
	28	2461.0	1.60		28	2460.9	0.00		28	2460.1	0.00
	29	2461.2	0.12		29	2460.9	0.15		29	2460.1	0.00
	30	2461.2	0.15		30	2460.9	0.00		30	2460.1	0.00
				31	2460.9	0.00					
Total		6.82				6.00					3.57

Deep Creek Lake Level 2002

Month	Day	Lake Level	Rain Fall	Month	Day	Lake Level	Rain Fall	Month	Day	Lake Level	Rain Fall
Jul	1	2460.1	0.00	Aug	1	2459.3	0.00	Sep	1	2458.2	0.00
	2	2459.9	0.00		2	2459.3	0.03		2	2458.2	0.00
	3	2459.9	0.00		3	2459.2	0.00		3	2458.1	0.00
	4	2459.9	0.05		4	2459.3	0.10		4	2458.1	0.00
	5	2459.8	0.00		5	2459.2	0.00		5	2458.1	0.00
	6	2459.7	0.00		6	2459.2	0.25		6	2458.0	0.00
	7	2459.6	0.00		7	2459.2	0.10		7	2458.0	0.00
	8	2459.6	0.00		8	2459.2	0.00		8	2457.9	0.00
	9	2459.5	0.25		9	2459.2	0.00		9	2457.9	0.00
	10	2459.5	0.00		10	2459.1	0.00		10	2457.8	0.00
	11	2459.6	0.00		11	2459.0	0.00		11	2457.8	0.00
	12	2459.6	0.00		12	2459.0	0.00		12	2457.7	0.00
	13	2459.6	0.00		13	2458.9	0.00		13	2457.7	0.00
	14	2459.6	1.08		14	2458.8	0.00		14	2457.6	0.05
	15	2459.6	0.00		15	2458.8	0.00		15	2457.6	0.28
	16	2459.5	0.00		16	2458.8	0.00		16	2457.6	0.00
	17	2459.5	0.00		17	2458.7	0.00		17	2457.5	0.02
	18	2459.5	0.25		18	2458.7	0.17		18	2457.5	0.00
	19	2459.4	0.95		19	2458.6	0.05		19	2457.5	0.34
	20	2459.5	0.00		20	2458.6			20	2457.5	0.03
	21	2459.4	0.00		21	2458.5	0.05		21	2457.4	0.00
	22	2459.3	0.00		22	2458.6	0.00		22	2457.4	0.15
	23	2459.3	0.12		23	2458.3	0.00		23	2457.4	0.60
	24	2459.3	0.23		24	2458.5	0.15		24	2457.3	0.00
	25	2459.3	0.00		25	2458.5	1.00		25	2457.3	0.00
	26	2459.3	0.02		26	2458.5	0.00		26	2457.3	0.05
	27	2459.3	0.60		27	2458.4	0.00		27	2457.3	1.25
	28	2459.3	1.36		28	2458.3	0.00		28	2457.4	n/a
	29	2459.5	0.00		29	2458.3	0.05		29	2457.4	0.00
	30	2459.4	0.00		30	2458.3	0.00		30	2457.4	0.00
	31	2459.3	0.00		31	2458.2	0.00				
Total			4.91				1.95				2.77

Deep Creek Lake Level 2002

Month	Day	Level	Change	Month	Day	Level	Change	Month	Day	Level	Change
Oct	1	2457.3		Nov	1	2457.5	0.00	Dec	1	2456.5	0.20
	2	2457.3	0.00		2	2457.5	0.15		2	2456.5	0.20
	3	2457.3	0.00		3	2457.5	0.00		3	2456.5	0.00
	4	2457.3	0.15		4	2457.5	0.00		4	2456.6	0.00
	5	2457.3	0.15		5	2457.5	0.00		5	2456.6	0.60
	6	2457.3	0.00		6	2458.6	0.90		6	2456.7	0.00
	7	2457.3	0.00		7	2457.7	0.40		7	2456.5	0.00
	8	2457.2	0.00		8	2457.7	0.05		8	2456.5	0.00
	9	2457.2	0.00		9	2457.8	0.00		9	2456.6	0.00
	10	2457.2	0.00		10	2457.9	0.05		10	2456.8	0.00
	11	2457.2	0.50		11	2457.8	0.37		11	2456.8	0.00
	12	2457.2	0.80		12	2457.7	0.60		12	2456.8	0.25
	13	2457.2	0.05		13	2457.8	0.00		13	2456.8	0.05
	14	2457.2	0.10		14	2457.8	0.00		14	2456.9	0.57
	15	2457.2	0.50		15	2457.7	0.00		15	2456.8	0.65
	16	2457.2	0.70		16	2457.7	0.40		16	2456.3	0.00
	17	2457.3	0.10		17	2457.7	0.47		17	2456.9	0.03
	18	2457.3	0.00		18	2457.6	0.00		18	2456.6	0.00
	19	2457.3	0.25		19	2457.5	0.03		19	2456.5	0.05
	20	2457.4	0.10		20	2457.4	0.35		20	2456.5	0.00
	21	2457.4	0.00		21	2457.4	0.00		21	2456.5	0.47
	22	2457.4	0.00		22	2457.3	0.25		22	2456.5	0.00
	23	2457.3	0.00		23	2457.0	0.05		23	2456.5	0.23
	24	2457.3	0.00		24	2456.8	0.00		24	2456.5	0.00
	25	2457.3	0.40		25	2456.8	0.00		25	2456.5	0.15
	26	2457.3	0.20		26	2456.7	0.06		26	2456.5	0.55
	27	2457.3	0.00		27	2456.7	0.20		27	2456.4	0.05
	28	2457.3	0.03		28	2456.5	0.00		28	2456.3	0.00
	29	2457.3	0.05		29	2456.5	0.00		29	2456.3	0.00
	30	2457.5	1.30		30	2456.5	0.30		30	2456.3	0.00
	31	2457.5	0.20						31	2456.2	0.10
Total			5.58				4.63			Year Total	56.46

APPENDIX B

TEMPERATURE MONITORING AND RELEASE REPORTS

MAXIMUM DAILY RIVER WATER TEMPERATURES

Daily maximum river water temperatures in the Youghiogheny River at Sang Run are presented on the following tables. The data were collated and provided by Versar, Inc., consultant to the MDNR Power Plant Assessment Division (PPAD).

The column labeled "SMAX" lists the arithmetic means of the daily maximum water temperatures, in degrees C, measured by two "Tempmentors" placed in the river by the MDNR. The column labeled "PenSmax" lists the maximum water temperatures, in degrees C, measured by the Permittee's temperature monitor at the Sang Run Bridge. PPAD and Versar analyze the data to evaluate the Water Temperature Enhancement Plan used by the Permittee to determine the need and timing of daily temperature releases.

Days when temperatures exceeded 25°C and days when temperature enhancement releases were made are summarized in the following tables. Log sheets for each of these dates also are enclosed.

Exceedance Of 25°C at Sang Run Temperature Probe

DATE	DURATION	MAXIMUM
July 3, 2002	13:00 - 1320	25.45
July 4, 2002	13:00 - 1340	25.35
July 16, 2002	15:00 - 19:50	26.44
July 17, 2002	14:00 - 14:40	25.46
July 20, 2002	14:00 - 14:50	25.47
July 31, 2002	13:30 - 21:10	27.75
August 4, 2002	13:50 – 22:00	28.45
August 6, 2002	15:00 – 19:10	26.20
August 8, 2002	16:30 – 19:20	25.74
August 13, 2002	16:50 – 17:00	25.32
August 18, 2002	14:50 – 16:40	26.24
August 20, 2002	15:50 – 17:40	25.76
August 24, 2002	16:40 17:10 – 17:30 17:50	25.09 25.15 25.0
August 25, 2002	14:50 – 18:00	25.37

2002 Dates & Times of Temperature Enhancement Releases

Date	Start Time	Stop Time	River Flow (cfs)
June 4	9:57	14:57	90
June 12	11:30	15:30	77
June 23	14:00	16:00	42
June 25	13:00	18:00	34
June 26	12:30	14:38	29
June 27	12:45	15:20	29
June 30	10:58	13:20	42
July 2	11:00	13:50	26
July 3	10:55	13:07	24
July 4	11:00	13:30	21
July 5	10:00	15:10	88
July 9	12:35	14:39	15
July 17	12:30	14:35	77
July 20	12:30	14:30	67
July 21	11:00	13:05	79
July 23	11:00	13:10	33
August 11	12:30	13:30	26
August 13	8:00	10:00	22
August 14	11:00	14:10	20
August 15	7:35	11:00	18
August 17	12:30	14:30	18
August 18	14:00	15:00	17
August 20	15:05	16:05	30

Date	Start Time	Stop Time	River Flow (cfs)
August 21	12:30	13:30	43
August 22	11:00	13:00	24
August 23	10:00	13:00	17

**Deep Creek Station
 Youghiohony River
 Maximum Daily Temperature Data - 2002**

<u>June</u>	<u>Smax</u>	<u>PenSmax</u>	<u>July</u>	<u>Smax</u>	<u>PenSmax</u>	<u>August</u>	<u>Smax</u>	<u>PenSmax</u>
1		20.10		23.81	22.23		25.02	24.18
2		21.33		26.23	24.83		24.33	23.69
3		18.49		27.64	25.45		24.67	23.62
4		19.48		26.23	25.35		28.37	28.45
5		23.48		25.02	23.54		24.5	23.82
6		20.15		22.29	21.90		25.88	26.20
7		21.51		24.50	24.39		24.16	24.28
8		23.21		22.46	22.84		25.19	25.74
9		23.93		25.19	24.84		22.46	23.43
10		20.36		23.13	23.10		25.36	24.32
11		24.88		23.47	23.98		26.05	24.53
12		21.64		21.96	22.83		22.29	22.53
13		21.8		22.13	22.03		25.19	25.32
14		20.13		20.81	20.59		24.16	23.54
15		19.02		22.46	23.25		24.50	24.79
16		19.98		26.40	26.44		22.79	23.19
17		17.55		26.40	25.46		23.13	22.78
18	22.29	21.86		22.46	22.12		26.05	26.24
19	21.79	20.58		22.79	22.62		22.46	22.60
20	24.33	23.86		26.05	25.47		25.19	25.76
21	21.63	22.04		25.02	24.06		25.02	23.92
22	27.11	27.05		24.50	23.17		23.81	23.00
23	26.76	26.53		25.19	24.28		22.29	22.62
24	22.63	21.20		21.30	21.18		24.84	25.15
25	25.88	25.15		22.97	22.73		25.88	25.37
26	27.64	26.24		21.63	21.88		21.79	22.38
27	24.67	24.48		22.29	22.21		24.16	24.35
28	20.32	20.37		22.46	23.03		21.30	21.62
29	26.58	26.35		23.47	23.58		20.32	20.41
30	23.47	22.67		24.84	24.68		21.30	22.24
31		20.10		27.83	27.75		21.30	21.88

Youghiogheny River Water Temperature Enhancement Plan

90 = CFS River Flow at Oakland

June 4, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	23.68	Check again at 0900
	<=30	26.08	Check again at 0900
0900	> 30	23.52	Check again at 1100
	<=30	25.92	Release at 1100 for 2 hours
1100	All	-0.90	No further predictions necessary today
1200	All	4.15	No further predictions necessary today
1400	All	6.76	No further predictions necessary today
1500	All	4.60	No further predictions necessary today

Tair	31.11	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	17.21	River Temp Sang Run @700
T9	17.42	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	90.00	River Flow at Oakland

88
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

REL 614 ✓
9:57-14:57
NO WIRE RE
TEMP REL / COST

Youghiogheny River Water Temperature Enhancement Plan

77 = CFS River Flow at Oakland

June 12, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	23.92	Check again at 0900
	<=30	25.80	Check again at 0900
0900	> 30	24.65	Check again at 1100
	<=30	26.53	Release at 1100 for 2 hours
1100	All	25.70	Release at 1230 for 2 hours
1200	All	2.51	No further predictions necessary today
1400	All	6.48	Temperature Plan not required today
1500	All	4.47	Temperature Plan not required today

Tair	28.33	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	19.02	River Temp Sang Run @700
T9	19.75	River Temp Sang Run @900
T11	20.97	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	77.00	River Flow at Oakland

83 Air Temp, Elkins WV - Degree F
PTCLDY Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

48 = CFS River Flow at Oakland

June 22, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	> 30	18.78	No further predictions necessary today
	< = 30	19.50	No further predictions necessary today
0900	> 30	17.03	No further predictions necessary today
	< = 30	17.75	No further predictions necessary today
1100	All	12.78	No further predictions necessary today
1200	All	11.28	No further predictions necessary today
1400	All	6.31	No further predictions necessary today
1500	All	4.39	No further predictions necessary today

Tair	26.67	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	0.00	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	48.00	River Flow at Oakland

80
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

42 = CFS River Flow at Oakland

June 23, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	24.98	Check again at 0900
	<=30	25.46	Check again at 0900
0900	> 30	24.67	Check again at 1100
	<=30	25.15	Check again at 1100
1100	All	25.50	Release at 1230 for 2 hours
1200	All	3.30	No further predictions necessary today
1400	All	6.48	No further predictions necessary today
1500	All	4.47	No further predictions necessary today

Tair	28.33	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	18.03	River Temp Sang Run @700
T9	17.97	River Temp Sang Run @900
T11	19.77	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	42.00	River Flow at Oakland

83
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

34 = CFS River Flow at Oakland

June 25, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.45	Check again at 0900
	<=30	25.61	Check again at 0900
0900	> 30	25.84	Check again at 1100
	<=30	26.00	Release at 1100 for 2 hours
1100	All	25.39	Check again at 1200
1200	All	26.08	Release ASAP - not later than 1230 for 1 hour
1400	All	-6.43	No further predictions necessary today
1500	All	-2.25	No further predictions necessary today

Tair	28.89	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	17.94	River Temp Sang Run @700
T9	18.48	River Temp Sang Run @900
T11	19.90	River Temp Sang Run @1100
T12	21.61	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	34.00	River Flow at Oakland

84
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

29 = CFS River Flow at Oakland

June 26, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	24.34	Check again at 0900
	<=30	24.30	Check again at 0900
0900	> 30	25.00	Check again at 1100
	<=30	24.96	Check again at 1100
1100	All	26.09	Release at 1230 for 2 hours
1200	All	1.99	No further predictions necessary today
1400	All	6.42	No further predictions necessary today
1500	All	4.44	No further predictions necessary today

Print Info for file

Tair	27.78	Air Temp, Elkins WV - Degree C
CCF	100.00	Cloud Cover Factor, Elkins WV
T7	18.72	River Temp Sang Run @700
T9	19.50	River Temp Sang Run @900
T11	21.66	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	29.00	River Flow at Oakland

82
TSTRMS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

25 = CFS River Flow at Oakland

June 27, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.98	Check again at 0900
	<=30	25.78	Check again at 0900
0900	> 30	25.00	Check again at 1100
	<=30	24.80	Check again at 1100
1100	All	25.64	Release at 1230 for 2 hours
1200	All	1.78	No further predictions necessary today
1400	All	6.59	No further predictions necessary today
1500	All	4.52	No further predictions necessary today

Print Info for file

Tair	29.44	Air Temp, Elkins WV - Degree C
CCF	100.00	Cloud Cover Factor, Elkins WV
T7	21.51	River Temp Sang Run @700
T9	20.77	River Temp Sang Run @900
T11	21.80	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	25.00	River Flow at Oakland

85
TSTRMS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

42 = CFS River Flow at Oakland

June 30, 2002

[Print Info for file](#)

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	26.57	Release at 1100 for 2 hours
	<=30	27.05	Release at 1100 for 2 hours
0900	> 30	2.71	No further predictions necessary today
	<=30	3.19	No further predictions necessary today
1100	All	13.46	No further predictions necessary today
1200	All	11.87	No further predictions necessary today
1400	All	6.59	No further predictions necessary today
1500	All	4.52	No further predictions necessary today

Tair	29.44	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	19.71	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	42.00	River Flow at Oakland

85
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

26 = CFS River Flow at Oakland

July 2, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	26.11	Check again at 0900
	<=30	25.95	Check again at 0900
0900	> 30	26.40	Release at 1100 for 2 hours
	<=30	26.24	Release at 1100 for 2 hours
1100	All	-4.02	No further predictions necessary today
1200	All	2.25	No further predictions necessary today
1400	All	6.59	No further predictions necessary today
1500	All	4.52	No further predictions necessary today

Tair	29.44	Air Temp, Elkins WV - Degree C
CCF	64.00	Cloud Cover Factor, Elkins WV
T7	19.98	River Temp Sang Run @700
T9	20.35	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	26.00	River Flow at Oakland

85
SHWRS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

24 = CFS River Flow at Oakland

July 3, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30 <=30	26.62 26.38	Release at 1100 for 2 hours Check again at 0900
0900	> 30 <=30	26.89 26.65	Release at 1100 for 2 hours Release at 1100 for 2 hours
1100	All	-3.41	No further predictions necessary today
1200	All	2.72	No further predictions necessary today
1400	All	6.76	No further predictions necessary today
1500	All	4.60	No further predictions necessary today

Print Info for file

Tair	31.11	Air Temp, Elkins WV - Degree C
CCF	64.00	Cloud Cover Factor, Elkins WV
T7	19.68	River Temp Sang Run @700
T9	20.11	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	24.00	River Flow at Oakland

88
SHWRS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

21 = CFS River Flow at Oakland

July 4, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	27.40	Release at 1100 for 2 hours
	<=30	27.04	Release at 1100 for 2 hours
0900	> 30	2.46	No further predictions necessary today
	<=30	2.10	No further predictions necessary today
1100	All	13.39	No further predictions necessary today
1200	All	11.83	No further predictions necessary today
1400	All	6.71	No further predictions necessary today
1500	All	4.58	No further predictions necessary today

Print Info for file

Tair	30.56	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	20.57	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	21.00	River Flow at Oakland

87
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

88 = CFS River Flow at Oakland

July 5, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30 <=30	24.11 26.43	Check again at 0900 Release at 1100 for 2 hours
0900	> 30 <=30	24.48 26.80	Check again at 1100 Release at 1100 for 2 hours
1100	All	-4.70	No further predictions necessary today
1200	All	1.87	No further predictions necessary today
1400	All	6.48	No further predictions necessary today
1500	All	4.47	No further predictions necessary today

Tair	28.33	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	20.90	River Temp Sang Run @700
T9	21.18	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	88.00	River Flow at Oakland

83
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

15 = CFS River Flow at Oakland

July 9, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	24.46	Check again at 0900
	<=30	23.86	Check again at 0900
0900	> 30	25.13	Check again at 1100
	<=30	24.53	Check again at 1100
1100	All	25.50	Release at 1230 for 2 hours
1200	All	2.86	No further predictions necessary today
1400	All	6.48	No further predictions necessary today
1500	All	4.47	No further predictions necessary today

Tair	28.33	Air Temp, Elkins WV - Degree C
CCF	100.00	Cloud Cover Factor, Elkins WV
T7	16.87	River Temp Sang Run @700
T9	17.82	River Temp Sang Run @900
T11	20.14	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	15.00	River Flow at Oakland

83
TSTRMS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

110 = CFS River Flow at Oakland

July 16, 2000

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	23.82	Temperature Plan not required today
	<=30	27.02	Temperature Plan not required today
0900	> 30	0.64	Temperature Plan not required today
	<=30	3.84	Temperature Plan not required today
1100	All	13.60	Temperature Plan not required today
1200	All	11.99	Temperature Plan not required today
1400	All	6.65	Temperature Plan not required today
1500	All	4.55	Temperature Plan not required today

Print Info for file

Tair	30.00	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	19.08	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	110.00	River Flow at Oakland

86
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

77 = CFS River Flow at Oakland

July 17, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	> 30 <=30	25.44 ~ 27.32	Check again at 0900 Release at 1100 for 2 hours
0900	> 30 <=30	25.64 ~ 27.52	Check again at 1100 Release at 1100 for 2 hours
1100	All	27.12 ~	Release at 1230 for 2 hours
1200	All	3.15	No further predictions necessary today
1400	All	6.88	No further predictions necessary today
1500	All	4.66	No further predictions necessary today

Tair	32.22	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	19.83	River Temp Sang Run @700
T9	20.18	River Temp Sang Run @900
T11	21.56	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	77.00	River Flow at Oakland

90
MOCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

67 = CFS River Flow at Oakland

July 20, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	24.88	Check again at 0900
	<=30	26.36	Check again at 0900
0900	> 30	25.05	Check again at 1100
	<=30	26.53	Release at 1100 for 2 hours
1100	All	25.80	Release at 1230 for 2 hours
1200	All	1.70	No further predictions necessary today
1400	All	6.42	No further predictions necessary today
1500	All	4.44	No further predictions necessary today

Tair	27.78	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	21.21	River Temp Sang Run @700
T9	21.29	River Temp Sang Run @900
T11	22.06	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	67.00	River Flow at Oakland

82
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

79 = CFS River Flow at Oakland

July 21, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30 <=30	26.34 28.30	Check again at 0900 Release at 1100 for 2 hours
0900	> 30 <=30	26.37 28.33	Release at 1100 for 2 hours Release at 1100 for 2 hours
1100	All	-3.10	No further predictions necessary today
1200	All	3.14	No further predictions necessary today
1400	All	6.88	No further predictions necessary today
1500	All	4.66	No further predictions necessary today

Tair	32.22	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	20.75	River Temp Sang Run @700
T9	20.83	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	79.00	River Flow at Oakland

90
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

33 = CFS River Flow at Oakland

July 23, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	28.70	Release at 1100 for 2 hours
	<=30	28.82	Release at 1100 for 2 hours
0900	> 30	3.57	No further predictions necessary today
	<=30	3.69	No further predictions necessary today
1100	All	14.56	No further predictions necessary today
1200	All	12.82	No further predictions necessary today
1400	All	7.05	No further predictions necessary today
1500	All	4.74	No further predictions necessary today

Tair	33.89	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	20.69	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	33.00	River Flow at Oakland

93
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

151 = CFS River Flow at Oakland

July 30, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	19.49	Temperature Plan not required today
	<=30	24.33	Temperature Plan not required today
0900	> 30	-6.22	Temperature Plan not required today
	<=30	-1.38	Temperature Plan not required today
1100	All	10.86	Temperature Plan not required today
1200	All	9.61	Temperature Plan not required today
1400	All	5.51	Temperature Plan not required today
1500	All	4.01	Temperature Plan not required today

Tair	18.89	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	21.72	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	151.00	River Flow at Oakland

66
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

80 = CFS River Flow at Oakland

August 4, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	>30	21.00	No further predictions necessary today
	<=30	23.00	No further predictions necessary today
0900	> 30	-3.72	No further predictions necessary today
	<=30	-1.72	No further predictions necessary today
1100	All	10.03	No further predictions necessary today
1200	All	8.90	No further predictions necessary today
1400	All	5.16	No further predictions necessary today
1500	All	3.84	No further predictions necessary today

Tair	15.56	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	20.94	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	80.00	River Flow at Oakland

60
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

93 = CFS River Flow at Oakland

August 6, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	20.41	No further predictions necessary today
	<=30	22.93	No further predictions necessary today
0900	> 30	-4.09	No further predictions necessary today
	<=30	-1.57	No further predictions necessary today
1100	All	10.03	No further predictions necessary today
1200	All	8.90	No further predictions necessary today
1400	All	5.16	No further predictions necessary today
1500	All	3.84	No further predictions necessary today

Print Info for file

Tair	15.56	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	20.75	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	93.00	River Flow at Oakland

60
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

50 = CFS River Flow at Oakland

August 8, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	18.69	No further predictions necessary today
	<=30	19.49	No further predictions necessary today
0900	> 30	-1.27	No further predictions necessary today
	<=30	-0.47	No further predictions necessary today
1100	All	8.39	No further predictions necessary today
1200	All	7.47	No further predictions necessary today
1400	All	4.48	No further predictions necessary today
1500	All	3.52	No further predictions necessary today

Tair	8.89	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	16.91	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	50.00	River Flow at Oakland

48
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

26 = CFS River Flow at Oakland

August 11, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.49	Check again at 0900
	<=30	25.33	Check again at 0900
0900	> 30	25.37	Check again at 1100
	<=30	25.21	Check again at 1100
1100	All	25.22	Check again at 1200
1200	All	25.45	Release ASAP - not later than 1230 for 1 hour
1400	All	-6.26	No further predictions necessary today
1500	All	-2.15	No further predictions necessary today

Print Info for file

Tair	27.78	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	18.17	River Temp Sang Run @700
T9	18.24	River Temp Sang Run @900
T11	19.83	River Temp Sang Run @1100
T12	21.14	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	26.00	River Flow at Oakland

82
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

22 = CFS River Flow at Oakland

August 13, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	27.10	Release at 1100 for 2 hours
	<=30	26.78	Release at 1100 for 2 hours
0900	> 30	27.48	Release at 1100 for 2 hours
	<=30	27.16	Release at 1100 for 2 hours
1100	All	21.94	No further predictions necessary today
1200	All	2.88	No further predictions necessary today
1400	All	6.54	No further predictions necessary today
1500	All	4.50	No further predictions necessary today

Tair	28.89	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	19.44	River Temp Sang Run @700
T9	19.80	River Temp Sang Run @900
T11	17.95	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	22.00	River Flow at Oakland

84
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

20 = CFS River Flow at Oakland

August 14, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30 <=30	26.43 26.03	Release at 1100 for 2 hours Check again at 0900
0900	> 30 <=30	26.43 26.03	Release at 1100 for 2 hours Release at 1100 for 2 hours
1100	All	-3.01	No further predictions necessary today
1200	All	2.82	No further predictions necessary today
1400	All	6.54	No further predictions necessary today
1500	All	4.50	No further predictions necessary today

Tair	28.89	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	19.19	River Temp Sang Run @700
T9	19.31	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	20.00	River Flow at Oakland

84
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

18 = CFS River Flow at Oakland

August 15, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.77	Check again at 0900
	<=30	25.29	Check again at 0900
0900	> 30	25.95	Release at 1100 for 2 hours
	<=30	25.47	Check again at 1100
1100	All	23.41	Check again at 1200
1200	All	22.27	No further predictions necessary today
1400	All	-4.98	No further predictions necessary today
1500	All	-1.48	No further predictions necessary today

Print Info for file

Tair	26.67	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	19.09	River Temp Sang Run @700
T9	19.31	River Temp Sang Run @900
T11	19.36	River Temp Sang Run @1100
T12	18.81	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	18.00	River Flow at Oakland

80
MOCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

18 = CFS River Flow at Oakland

August 17, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.23	Check again at 0900
	<=30	24.75	Check again at 0900
0900	> 30	25.48	Check again at 1100
	<=30	25.00	Check again at 1100
1100	All	25.65	Release at 1230 for 2 hours
1200	All	1.75	No further predictions necessary today
1400	All	6.25	No further predictions necessary today
1500	All	4.36	No further predictions necessary today

Print Info for file

Tair	26.11	Air Temp, Elkins WV - Degree C
CCF	64.00	Cloud Cover Factor, Elkins WV
T7	19.61	River Temp Sang Run @700
T9	19.87	River Temp Sang Run @900
T11	21.60	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	18.00	River Flow at Oakland

79
SHWRS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

· Youghiogheny River Water Temperature Enhancement Plan

17 = CFS River Flow at Oakland

August 18, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.09	Check again at 0900
.	<=30	24.57	Check again at 0900
0900	> 30	25.21	Check again at 1100
	<=30	24.69	Check again at 1100
1100	All	24.20	Check again at 1200
1200	All	25.07	Check again at 1400
1400	All	25.71	Release ASAP - not later than 1430 for 1 hour
1500	All	-2.65	No further predictions necessary today

Print Info for file

Tair	26.67	Air Temp, Elkins WV - Degree C
CCF	100.00	Cloud Cover Factor, Elkins WV
T7	20.57	River Temp Sang Run @700
T9	20.73	River Temp Sang Run @900
T11	21.23	River Temp Sang Run @1100
T12	22.54	River Temp Sang Run @1200
T14	24.28	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	17.00	River Flow at Oakland

80
TSTRMS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

30 = CFS River Flow at Oakland

August 20, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.28	Check again at 0900
	<=30	25.28	Check again at 0900
0900	> 30	25.22	Check again at 1100
	<=30	25.22	Check again at 1100
1100	All	24.21	Check again at 1200
1200	All	24.37	Check again at 1400
1400	All	24.83	Check again at 1500
1500	All	25.18	Release ASAP - not later than 1530 for 1 hour

Tair	25.00	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	20.65	River Temp Sang Run @700
T9	20.50	River Temp Sang Run @900
T11	20.94	River Temp Sang Run @1100
T12	21.64	River Temp Sang Run @1200
T14	23.36	River Temp Sang Run @1400
T15	24.23	River Temp Sang Run @1500
Q	30.00	River Flow at Oakland

77
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

43 = CFS River Flow at Oakland

August 21, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.17	Check again at 0900
	<=30	25.69	Check again at 0900
0900	> 30	25.19	Check again at 1100
	<=30	25.71	Check again at 1100
1100	All	25.35	Check again at 1200
1200	All	25.52	Release ASAP - not later than 1230 for 1 hour
1400	All	-6.43	No further predictions necessary today
1500	All	-2.24	No further predictions necessary today

Tair	26.67	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	18.32	River Temp Sang Run @700
T9	18.40	River Temp Sang Run @900
T11	19.96	River Temp Sang Run @1100
T12	21.23	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	43.00	River Flow at Oakland

80
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

24 = CFS River Flow at Oakland

August 22, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	27.18	Release at 1100 for 2 hours
	<=30	26.94	Release at 1100 for 2 hours
0900	> 30	3.70	No further predictions necessary today
	<=30	3.46	No further predictions necessary today
1100	All	13.46	No further predictions necessary today
1200	All	11.87	No further predictions necessary today
1400	All	6.59	No further predictions necessary today
1500	All	4.52	No further predictions necessary today

Tair	29.44	Air Temp, Elkins WV - Degree C
CCF	1.00	Cloud Cover Factor, Elkins WV
T7	19.36	River Temp Sang Run @700
T9	0.00	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	24.00	River Flow at Oakland

85
SUNNY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

17 = CFS River Flow at Oakland

August 23, 2002

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	25.95	Check again at 0900
	<=30	25.43	Check again at 0900
0900	> 30	26.65	Release at 1100 for 2 hours
	<=30	26.13	Release at 1100 for 2 hours
1100	All	-5.77	No further predictions necessary today
1200	All	1.08	No further predictions necessary today
1400	All	6.31	No further predictions necessary today
1500	All	4.39	No further predictions necessary today

Tair	26.67	Air Temp, Elkins WV - Degree C
CCF	64.00	Cloud Cover Factor, Elkins WV
T7	21.10	River Temp Sang Run @700
T9	21.64	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	17.00	River Flow at Oakland

80
SHWRS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

16 = CFS River Flow at Oakland

August 24, 2002

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30	24.57	Check again at 0900
	<=30	24.01	Check again at 0900
0900	> 30	24.29	Check again at 1100
	<=30	23.73	Check again at 1100
1100	All	24.27	Check again at 1200
1200	All	24.39	Check again at 1400
1400	All	24.38	Check again at 1500
1500	All	24.66	No further predictions necessary today

Print Info for file

Tair	24.44	Air Temp, Elkins WV - Degree C
CCF	100.00	Cloud Cover Factor, Elkins WV
T7	21.03	River Temp Sang Run @700
T9	20.75	River Temp Sang Run @900
T11	21.69	River Temp Sang Run @1100
T12	22.36	River Temp Sang Run @1200
T14	23.39	River Temp Sang Run @1400
T15	24.00	River Temp Sang Run @1500
Q	16.00	River Flow at Oakland

76
TSTRMS

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

Youghiogheny River Water Temperature Enhancement Plan

93 = CFS River Flow at Oakland

August 25, 2003

Print Info for file

Time	Oakland Flow CFS	Predicted Maximum River Water Temperature Degree C	Deep Creek Action
0700	<30 <=30	22.52 25.04	No further predictions necessary today Check again at 0900
0900	> 30 <=30	22.92 25.44	No further predictions necessary today Check again at 1100
1100	All	-5.79	No further predictions necessary today
1200	All	0.92	No further predictions necessary today
1400	All	6.02	No further predictions necessary today
1500	All	4.25	No further predictions necessary today

Tair	23.89	Air Temp, Elkins WV - Degree C
CCF	36.00	Cloud Cover Factor, Elkins WV
T7	21.01	River Temp Sang Run @700
T9	21.17	River Temp Sang Run @900
T11	0.00	River Temp Sang Run @1100
T12	0.00	River Temp Sang Run @1200
T14	0.00	River Temp Sang Run @1400
T15	0.00	River Temp Sang Run @1500
Q	93.00	River Flow at Oakland

75
PTCLDY

Air Temp, Elkins WV - Degree F
Cloud Cover, Elkins WV

APPENDIX C

BYPASS FLOW OPERATION RECORD

BYPASS FLOW OPERATION

The flow bypass protocol requires the Permittee to maintain a minimum flow of 40 cfs in the Youghiogheny River immediately downstream of the tailrace. Starting June 1, and continuing through November 30, the Permittee monitors the river flows at the Oakland gage. When flows at the Oakland gage fall below 26 cfs, the Permittee may be required to open a bypass valve to release enough water to maintain 40 cfs in the river immediately below the tailrace.

The following table summarizes flow bypass data for June through November 2002, when flows in the Youghiogheny River were less than 26 cfs. Flow data were obtained from the USGS recording at the Oakland gage, direct readings from the USGS Oakland gage, or from the tailrace gage at the station, per guidance provided in the protocol. Valve opening was determined from Table 3 of the protocol based on station operating status.

Data from the USGS gaging station at Oakland are also provided. Data for 2002 are provisional data. USGS data represent daily mean flows and may not agree with instantaneous data collected by the Permittee throughout the year.

**Deep Creek Station
Flow Bypass Operation - 2002**

			Bypass Operation	
Month	Day	Flow at Oakland	Bypass Flow	% Open
June	27	25.0	0	CLOSED
July	3	24.0	0	CLOSED
July	4	21.0	0	CLOSED
July	7	21.0	0	CLOSED
July	8	17.0	5	26
July	9	15.0	8	30
July	10	15.0	8	30
August	12	25.0	0	CLOSED
August	13	22.0	0	CLOSED
August	14	20.0	0	CLOSED
August	15	18.0	3	23
August	16	18.0	3	23
August	17	18.0	3	23
August	18	17.0	5	26
August	19	17.0	5	26
August	22	24.0	0	CLOSED
August	23	17.0	5	26
August	24	16.0	6	27
August	28	22.0	0	CLOSED
August	29	21.0	0	CLOSED
August	30	22.0	0	CLOSED
August	31	18.0	3	23
September	1	15.0	8	30
September	2	14.0	9	32
September	3	13.0	11	35
September	4	12.0	12	36
September	5	11.0	14	39
September	6	11.0	14	39
September	8	10.0	15	40
September	9	8.0	18	44
September	10	8.0	20	47
September	11	7.5	20	47
September	12	7.5	20	47
September	13	7.0	21	48
September	14	6.0	21	48
September	15	6.5	17	42
September	16	9.3	9	32

**Deep Creek Station
Flow Bypass Operation - 2002**

			Bypass Operation	
Month	Day	Flow at Oakland	Bypass Flow	% Open

September	17	14.0	8	30
September	18	15.0	3	23
September	20	17.0	5	26
September	21	11.0	14	39
September	22	10.0	15	40
September	23	22.0	0	CLOSED
September	25	18.0	3	CLOSED
September	26	20.0	0	CLOSED
October	5	24	0	CLOSED
October	6	21	0	CLOSED
October	7	20	0	CLOSED
October	8	19	2	22
October	9	18	3	23
October	10	17	5	26
October	11	32	0	CLOSED
September	15	6.5	17	42
September	16	9.3	9	32
September	17	14.0	8	30
September	18	15.0	3	23
September	20	17.0	5	26
September	21	11.0	14	39
September	22	10.0	15	40
September	23	22.0	0	CLOSED
September	25	18.0	3	CLOSED
September	26	20.0	0	CLOSED
October	5	24	0	CLOSED
October	6	21	0	CLOSED
October	7	20	0	CLOSED
October	8	19	2	22
October	9	18	3	23
October	10	17	5	26
October	11	32	0	CLOSED
October	6	21	0	CLOSED

46 days

U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

STATION NUMBER 03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD. SOURCE AGENCY USGS STATE 24 COUNTY 023
 LATITUDE 392517.9 LONGITUDE 0792529.6 NAD83 DRAINAGE AREA 134.00* CONTRIBUTING DRAINAGE AREA DATUM 2353.61 NGVD29
 Date Processed: 2003-01-21 14:46 By jlgiffi

WORKING RECORD
 DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	18	33	67	240	142	1210	665	132	26	97	19
2	17	19	29	58	215	160	764	1600	113	24	76	18
3	19	21	26	58	187	217	542	1250	89	22	62	16
4	19	26	25	55	178	211	395	693	110	20	102	15
5	22	27	23	53	159	194	302	684	112	54	65	14
6	23	25	22	55	208	224	254	384	126	29	112	13
7	27	23	29	64	139	156	217	667	221	19	66	12
8	30	22	49	65	141	140	187	826	131	16	46	12
9	30	21	232	61	136	128	175	847	101	14	37	11
10	23	20	131	108	134	122	262	803	87	340	31	11
11	14	20	97	686	319	102	193	540	75	181	28	11
12	14	19	82	536	265	101	165	402	65	70	26	9.9
13	13	18	70	337	244	104	168	442	300	46	24	9.3
14	15	18	85	247	198	109	208	725	160	262	21	8.9
15	43	18	117	227	184	93	1380	727	160	161	19	10
16	35	18	84	198	174	133	1060	492	114	89	19	14
17	30	18	87	174	166	174	654	393	88	61	20	15
18	31	18	597	157	143	308	446	2070	74	48	18	16
19	24	18	412	133	133	339	339	1450	62	52	19	17
20	21	19	275	178	155	2090	628	877	54	83	21	16
21	19	22	202	154	259	2310	793	603	47	60	21	14
22	18	23	154	160	225	1160	2150	413	40	42	20	14
23	18	22	137	121	192	754	1290	315	36	34	17	17
24	17	20	174	1350	168	565	810	254	33	32	---	17
25	17	28	141	1650	157	426	634	245	30	34	---	16
26	17	92	131	830	154	485	462	193	26	225	---	26
27	17	52	101	512	158	1000	347	161	25	1010	---	179
28	18	52	98	347	130	643	2220	152	45	746	26	266
29	18	44	91	277	---	470	1750	157	48	272	25	94
30	18	36	74	255	---	381	971	205	32	388	25	54
31	18	---	74	280	---	423	---	143	---	130	21	---
TOTAL	666	797	3882	9453	5161	13848	20976	19178	2536	4590	---	965.1
MEAN	21.48	26.57	125.2	304.9	184.3	446.7	699.2	618.6	84.53	148.1	---	32.17
MAX	43	92	597	1650	319	2310	2220	2070	221	1010	---	266
MIN	13	18	22	53	130	93	165	143	25	14	---	8.9
CFSM	0.16	0.20	0.93	2.28	1.38	3.33	5.22	4.62	0.63	1.10	---	0.24
IN.	0.18	0.22	1.08	2.62	1.43	3.84	5.82	5.32	0.70	1.27	---	0.27

Provisional

Provisional

U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

STATION NUMBER 03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD SOURCE AGENCY USGS STATE 24 COUNTY 023
 LATITUDE 392517.9 LONGITUDE 0792529.6 NAD83 DRAINAGE AREA 134.00* CONTRIBUTING DRAINAGE AREA DATUM 2153.61 NGVD29
 Date Processed: 2003-01-21 14:31 By jlgiffi

WORKING RECORD
 DISCHARGE SAT-DISCHARGE, in CFS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	439	249	1220	---	---	---	---	---	---	---	---
2	30	335	285	1690	---	---	---	---	---	---	---	---
3	26	254	195	1150	---	---	---	---	---	---	---	---
4	24	207	175	830	---	---	---	---	---	---	---	---
5	22	198	120	624	---	---	---	---	---	---	---	---
6	21	907	105	493	---	---	---	---	---	---	---	---
7	20	900	122	392	---	---	---	---	---	---	---	---
8	18	625	134	338	---	---	---	---	---	---	---	---
9	18	422	112	378	---	---	---	---	---	---	---	---
10	19	320	112	452	---	---	---	---	---	---	---	---
11	103	299	117	339	---	---	---	---	---	---	---	---
12	191	485	140	301	---	---	---	---	---	---	---	---
13	104	779	168	290	---	---	---	---	---	---	---	---
14	78	513	552	241	---	---	---	---	---	---	---	---
15	61	371	421	186	---	---	---	---	---	---	---	---
16	306	307	378	183	---	---	---	---	---	---	---	---
17	406	697	315	166	---	---	---	---	---	---	---	---
18	242	719	269	150	---	---	---	---	---	---	---	---
19	163	689	253	139	---	---	---	---	---	---	---	---
20	211	863	1840	130	---	---	---	---	---	---	---	---
21	187	657	1510	---	---	---	---	---	---	---	---	---
22	142	504	898	---	---	---	---	---	---	---	---	---
23	112	394	803	---	---	---	---	---	---	---	---	---
24	90	323	565	---	---	---	---	---	---	---	---	---
25	79	341	470	---	---	---	---	---	---	---	---	---
26	157	321	366	---	---	---	---	---	---	---	---	---
27	144	304	283	---	---	---	---	---	---	---	---	---
28	116	263	240	---	---	---	---	---	---	---	---	---
29	271	235	215	---	---	---	---	---	---	---	---	---
30	1010	249	189	---	---	---	---	---	---	---	---	---
31	646	---	254	---	---	---	---	---	---	---	---	---
TOTAL	5055	13920	11855	---	---	---	---	---	---	---	---	---
MEAN	163.1	464.0	382.4	---	---	---	---	---	---	---	---	---
MAX	1010	907	1840	---	---	---	---	---	---	---	---	---
MIN	18	198	105	---	---	---	---	---	---	---	---	---
AC-FT	10030	27610	23510	---	---	---	---	---	---	---	---	---
CFSM	1.22	3.46	2.85	---	---	---	---	---	---	---	---	---
IN.	1.40	3.86	3.29	---	---	---	---	---	---	---	---	---

Provisional

ZUIZ
DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG

Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION		DO MEASUREMENTS		NO. UNITS GENERATING	TIMES OF GENERATION	SIJICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERATING TAILRACE ELEV
	TIME	TEMP °C	DO (mg/l)	DOWNSTREAM FROM WEIR					
	TIME	TEMP °C	DO (mg/l)	TIME	TEMP °C	DO (mg/l)			
1-02	—	—	STATION	UNATTENDED	—	—	OPEN	—	2028.1
2-02	—	—	STATION	UNATTENDED	—	—	OPEN	—	2028.1
3-02	10:00	20.8	8.21	10:15	13.4	11.1	OPEN	2022.1	2028.1
4-02	—	—	unscheduled	—	—	—	OPEN	2022.4	2028.1
5-02	—	—	unscheduled	—	—	—	OPEN	2022.2	2028.1
6-02	—	—	unscheduled	—	—	—	OPEN	2022.1	2028.1
7-02	10:00	21.2	8.17	10:30	13.2	10.9	OPEN	2022.6	2028.1
8-02	—	—	—	—	—	—	OPEN	—	—
9-02	—	—	STATION	UNATTENDED	—	—	OPEN	—	2028.1
10-02	10:00	22.2	7.84	10:15	11.7	10.5	OPEN	2022.0	2028.1
11-02	—	—	unscheduled	—	—	—	OPEN	2022.0	2028.1
12-02	—	—	unscheduled	—	—	—	OPEN	2022.0	2028.1
13-02	—	—	—	—	—	—	OPEN	2022.0	—
14-02	10:00	22.9	7.68	10:15	11.9	9.11	OPEN	2022.4	2028.1
15-02	—	—	—	—	—	—	OPEN	—	—
16-02	—	—	—	—	—	—	OPEN	—	—
6-17-02	10:10	18.8	8.58	10:15	15.0	8.26	OPEN	2022.1	2028.1
5-18-02	—	—	—	—	—	—	OPEN	2022.0	—
5-19-02	—	—	unscheduled	—	—	—	OPEN	2022.0	2028.1
6-20-02	—	—	unscheduled	—	—	—	OPEN	2021.9	2028.1

FROM

7002
DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG

(Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION		DO MEASUREMENTS		NO. UNITS GENERATING	TIMES OF GENERATION	SLUICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERATING TAILRACE ELEV
	TIME	TEMP °C	DO (mg/l)	DOWNSTREAM FROM WEIR					
	TIME	TEMP °C	DO (mg/l)	TIME	TEMP °C	DO (mg/l)			
21-02	10:00	22.0	8.04	10:10	12.2	7.40	OPEN	2021.9	2028.1
22-02							OPEN		
23-02			STATION	UNATTENDED			OPEN		2028.1
24-02	10:20	23.5	7.47	10:30	14.6	7.44	OPEN	2021.8	2028.1
25-02							OPEN	2021.7	2028.1
26-02							OPEN	2021.7	2028.1
27-02							OPEN	2021.6	2028.1
28-02	10:15	23.1	7.51	10:30	14.6	7.44	OPEN	2021.9	2028.1
29-02							OPEN		
30-02			STATION	UNATTENDED			OPEN		2028.1
1-02	10:00	22.8	7.99	10:15	12.2	6.70	OPEN	2021.7	2028.1
2-02							OPEN	2021.7	2028.1
3-02							OPEN	2021.6	2028.1
4-02			STATION	UNATTENDED			OPEN		2028.1
5-02	10:20	24.4	7.54	10:30	15.0	7.19	OPEN	2021.7	2028.1
6-02			STATION	UNATTENDED			OPEN		2028.1
7-02							OPEN		2028.1
8-02	10:30	24.5	8.18	10:40	15.1	6.63	OPEN	2021.7	2028.1
9-02			UNscheduled				OPEN	2021.7	2028.1
10-02			UNscheduled				OPEN	2021.8	2028.1

FROM

2002

DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG

(Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION			DO MEASUREMENTS DOWNSTREAM FROM WEIR			NO. UNITS GENERATING	TIMES OF GENERATION	SLUICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERATING TAILRACE ELEV
	TIME	TEMP °C	DO (mg/L)	TIME	TEMP °C	DO (mg/L)					
7-11-02							No generation		open	2022.6	
7-12-02	10:20	18.4	8.68	10:30	15.4	6.60	2 @ 100%	1000 - 1300	OPEN	2021.9	2028.1
7-13-02							No generation		open		
7-14-02							No generation		open		
7-15-02	10:15	14.9	7.56	10:30	15.4	6.20	2 @ 100%	1000 - 1300	open	2022.4	2028.1
7-16-02							No generation		open	2022.0	
7-17-02							2 @ 100%	12:30 - 14:35	open	2021.9	2028.1
7-18-02							2 @ 100%	0900 - 1500	open	2021.8	2028.1
7-19-02	10:15	23.7	7.85	10:30	15.5	5.78	2 @ 100%	10:00 - 13:00	open	2021.8	2028.1
7-20-02							2 @ 100%	12:30 - 14:57	open		2028.1
7-21-02							2 @ 100%	1100 - 1305	open		2028.1
7-22-02	11:25	26.4	7.40	11:30	16.0	6.61	2 @ 100%	10:00 - 15:10	closed	2021.9	2028.5
7-23-02								1100 - 13:10 + 14:20 - 15:10	open 1'	2021.8	2028.5
7-24-02								1100 - 13:10	closed	2021.8	2028.5
7-25-02							No generation		closed	2021.8	
7-26-02	11:20	19.5	8.52	11:30	17.4	6.46	2 @ 100%	10:10 - 1300	open 1'	2021.9	2028.1
7-27-02							No generation		closed		
7-28-02							2 @ 100%	17:10 - 19:16	open 1'		2028.5
7-29-02	10:20	27.7	7.29	10:30	16.1	6.21	2 @ 100%	1000 - 1305 + 15:15 - 1700	closed	2022.8	2028.5
7-30-02							2 @ 100%	13:20 - 17:19	open 1'	2022.8	2028.5

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**LUUK
DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG**

(Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION			DO MEASUREMENTS		NO. UNITS GENERATING	TIMES OF GENERATION	SLUICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERAT TAILRA ELEV
	TIME	TEMP °C	DO (mg/L)	TIME	TEMP °C					
8/02										
8-3-02							No Generation	2 closed 2 open 1'	2022.3	
8-1-02				unscheduled			1025-1400	2 closed 2 open 1'	2022.1	2028.5
8-3-02	10:20	22.8	7.98	10:30	16.1	2 @ 100%	10:00 - 14:00	2 closed 2 open 1'	2022.1	2028.5
8-3-02				unscheduled		2 @ 100%	1000 - 1300	2 closed 2 open 1'		2028.5
8-4-02							No Generation	2 closed 2 open 1'		
8-5-02	10:30	23.1	7.94	10:40	15.8	2 @ 100%	1000 - 1300	2 closed 2 open 1'	2022.2	2028.5
8-6-02							No Generation	2 closed 2 open 1'	2022.0	
8-7-02							No Generation	2 closed 2 open 1'	2022.0	
8-8-02							No Generation	2 closed 2 open 1'	2021.9	
8-9-02	10:30	17.9	8.24	10:40	16.1	2 @ 100%	1000 - 1300	2 closed 2 open 1'	2021.9	2028.5
8-10-02				unscheduled		2 @ 100%	1300 - 1500	2 closed 2 open 1'		2028.5
8-11-02				unscheduled		2 @ 100%	1230 - 1330	2 closed 2 open 1'		2028.5
8-12-02	10:35	24.4	7.74	10:40	16.5	2 @ 100%	1000 - 1335	2 closed 2 open 1'	2021.8	2028.5
8-13-02				unscheduled		2 @ 100%	0800 - 1000 + 1430 - 1550	2 closed 2 open 1'	2021.8	2028.5
8-14-02				unscheduled		2 @ 100%	1100 - 1410	2 closed 2 open 1'	2021.7	2028.5
8-15-02				unscheduled		2 @ 100%	0735 - 1100	2 closed 2 open 1'	2021.7	2028.5
8-16-02	10:40	23.6	7.87	10:50	16.6	2 @ 100%	1000 - 1300 BPO	2 closed 2 open 1'	2021.7	2028.5
8-17-02				unscheduled		2 @ 100%	1000 - 1300 BPO	2 closed 2 open 1'		2028.5
8-18-02				unscheduled		2 @ 100%	1400 - 1500 BPO	2 closed 2 open 1'		2028.5
8-19-02	10:35	24.0	7.79	10:45	17.0	2 @ 100%	1000 - 1300 BPO	2 closed 2 open 1'	2021.7	2028.5

2002

DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG

(Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION			DO MEASUREMENTS			NO. UNITS GENERATING	TIMES OF GENERATION	SLUICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERATING TAILRACE ELEV
	TIME	TEMP °C	DO (mg/l)	DOWNSTREAM FROM WEIR	TEMP °C	DO (mg/l)					
1-20-02			unscheduled				2 @ 100%	1500 - 1605	2 closed	2021.7	2028.5
1-21-02			unscheduled				2 @ 100%	1230 - 1330	2 open / 1 closed	2021.7	2028.5
1-22-02			unscheduled				2 @ 100%	1100 - 1300	2 closed / 2 open / 1 closed	2021.8	2028.5
1-23-02	10:10	23.9	7.83	10:45	17.2	6.00	2 @ 100%	1000 - 1300	2 closed / 2 open / 1 closed	2021.8	2028.5
1-24-02								no generation	2 open / 1 closed		
1-25-02								no generation	2 closed / 2 open / 1 closed		
1-26-02	10:40	20.9	8.29	10:45	17.8	5.97	2 @ 100%	1000 - 1300	2 closed / 2 open / 1 closed	2021.8	2028.5
1-27-02								no generation	2 closed / 2 open / 1 closed	2021.8	
1-28-02								no generation	2 closed / 2 open / 1 closed	2021.7	
1-29-02								no generation	2 closed / 2 open / 1 closed	2021.7	
1-30-02	0:00	18.3	7.85	10:50	18.1	6.02	2 @ 100%	1000 - 1300	2 closed / 2 open / 1 closed	2021.7	2028.5
1-31-02			unscheduled				2 @ 100%	1000 - 1300	2 closed / 2 open / 1 closed		2028.5
2-1-02								no generation	2 closed / 2 open / 1 closed		2028.5
2-2-02			unscheduled				2 @ 100%	1500 - 1300	2 closed / 2 open / 1 closed		2028.5
2-3-02			unscheduled				2 @ 100%	1030 - 1200	2 closed / 2 open / 1 closed	2021.7	2028.5
2-4-02								no generation	2 closed / 2 open / 1 closed	2021.7	
2-5-02								no generation	2 closed / 2 open / 1 closed	2021.7	
2-6-02	10:40	19.5	8.50	10:45	18.2	6.05		1000 - 1300	2 closed / 2 open / 1 closed	2021.7	2028.5
2-7-02								no generation	2 closed / 2 open / 1 closed	2021.7	
2-8-02								no generation	2 closed / 2 open / 1 closed	2021.7	

FROM 10:15AM 2002 01 01

2002

DEEP CREEK STATION
DISSOLVED OXYGEN MONITORING LOG

(Instrument Calibrated to 2000 ft. MSL)

DATE	INSTRUMENT CALIBRATION		DO MEASUREMENTS		NO. UNITS GENERATING	TIMES OF GENERATION	SLUICE GATE POSITION	NON-OPERATING TAILRACE ELEV	OPERATING TAILRACE ELEV	
	TIME	TEMP °C	DO (mg/L)	DOWNSTREAM FROM WEIR						
	TIME	TEMP °C	DO (mg/L)	TIME	TEMP °C	DO (mg/L)				
9-9-02	1120	19.6	8.50	1125	18.6	6.00	2 @ 100%	2 closed 2 open 1'	2021.6	2028.5
9-10-02								2 closed 2 open 1'	2021.6	
9-11-02								2 closed 2 open 1'	2021.6	
9-12-02								2 closed 2 open 1'	2021.7	
9-13-02	1130	17.2	8.90	1105	18.5	6.62	2 @ 100%	2 closed 2 open 1'	2021.7	2028.5
9-14-02								2 closed 2 open 1'		
9-15-02								2 closed 2 open 1'		
9-16-02	1035	21.2	8.23	1040	18.6	6.64	2 @ 100%	2 closed 2 open 1'	2021.8	2028.5
9-17-02								2 closed 2 open 1'		
9-18-02	1040	17.4	8.86	1045	18.8	6.59	2 @ 100%	2 closed 2 open 1'	2021.7	2028.5
9-19-02	1035	21.1	8.29	1040	19.3	6.69	2 @ 100%	2 closed 2 open 1'	2021.7	2028.5
9-20-02	1040	20.9	8.13	1045	19.0	6.68	2 @ 100%	2 closed 2 open 1'	2021.7	2028.5
9-21-02								2 closed 2 open 1'		
9-22-02								2 closed 2 open 1'		
9-23-02	1040	21.0	8.38	1045	19.1	6.72	2 @ 100%	2 closed 2 open 1'	2021.8	2028.5
9-24-02								2 closed 2 open 1'	2021.8	
9-25-02								2 closed 2 open 1'	2021.8	
9-26-02								2 closed 2 open 1'	2021.7	
9-27-02	1045	17.7	8.82	1050	19.1	7.04	2 @ 100%	2 closed 2 open 1'	2021.7	2028.5
9-28-02								2 closed 2 open 1'		

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225 Greenfield Parkway, Suite 201
Liverpool, NY 13088

Federal Express

January 31, 2003

Mr. Matthew G. Pajerowski, Chief
Water Rights Division
Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

***RE: Water Appropriation and Use Permit No. GA92S009(03)
2002 Annual Report***

Dear Mr. Pajerowski:

In accordance with Condition 23 of Permit No. GA92S009(03), Reliant Energy Maryland Holdings, LLC, submits the attached annual report for the Deep Creek Hydroelectric Station.

If you have any questions on the attached report, please call me at 413-2839.

Sincerely yours,

William Friers
Manager, Hydro Control

Attachment

cc: R. I. McLean
S. P. Schreiner