

November 28, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

**RE: Au-Train Hydroelectric Project – FERC #10856
UP Hydro LLC
Minimum Flow Deviation Article 401/402**

Dear Ms. Bose:

On behalf of UP Hydro LLC, Licensee, Renewable World Energies, LLC (RWE) is submitting a report concerning *Minimum Flow Deviations* at the Au-Train hydroelectric facility.

The first deviation occurred on November 19, 2016 at 1600 hours. It ended at 2100 hours. The total duration of the event appears to be approximately 5 hours. The required project minimum flow is 50 CFS. The lowest discharge recorded was 23 CFS (27 CFS lower than minimum). The project was shut down by a power outage. Heavy snow and high winds caused a tree to fall on the project's transmission line. The line has been repaired by local contractors. Per the 2014 Operations and Compliance plan, the licensee is required to start a siphon, within 4 hours of a power outage or emergency, capable of supplying 10 CFS to maintain adequate flows downstream following power outages and other emergencies when the reservoir level is less than 778.0 feet. Staff was unable to start the siphon system due to hazardous weather conditions providing unsafe access to the system. The project was brought back on line at 2100 hours with a minimum flow of 67 CFS restored to the river.

The deviation occurred on November 22, 2016 at 0615 hours. It ended at 1815 hours. The total duration of the event appears to be approximately 12 hours. The required project minimum flow is 50 CFS. The lowest discharge recorded was 24 CFS (26 CFS lower than minimum). The project was shut down by an electrical problem in the powerhouse. Per the 2014 Operations and Compliance plan, the licensee is required to start a siphon, within 4 hours of a power outage or emergency, capable of supplying 10 CFS to maintain adequate flows downstream following power outages and other emergencies when the reservoir level is less than 778.0 feet. Staff was able to start the siphon system at 1500 hours. The delay in starting the siphon was due to staff belief that the project would be back online before the 4 hour time period.

Corporate Office

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Once it was determined that the problem would require more time to correct, staff began starting the siphon at 1200 hours. Ice and weather prevented immediate startup of the siphon. The project was brought back on line at 1815 hours with a minimum flow of 149 CFS restored to the river.

The License made every attempt to minimize the duration of the event. During this time the HWL was maintained within operational limits. No adverse environmental impacts were noted. This report is being filed with the agencies as noted below.

If you have any questions concerning this submittal, please contact me at the Renewable World Energies, LLC offices @ 855-994-9376 Ext 102. I can also be reached by e-mail at jason@rwehydro.com.

Sincerely,
Renewable World Energies, LLC
Agent for Licensee

Mr. Jason Kreuzscher
Vice President

Attachments: Data Graph
Data Table

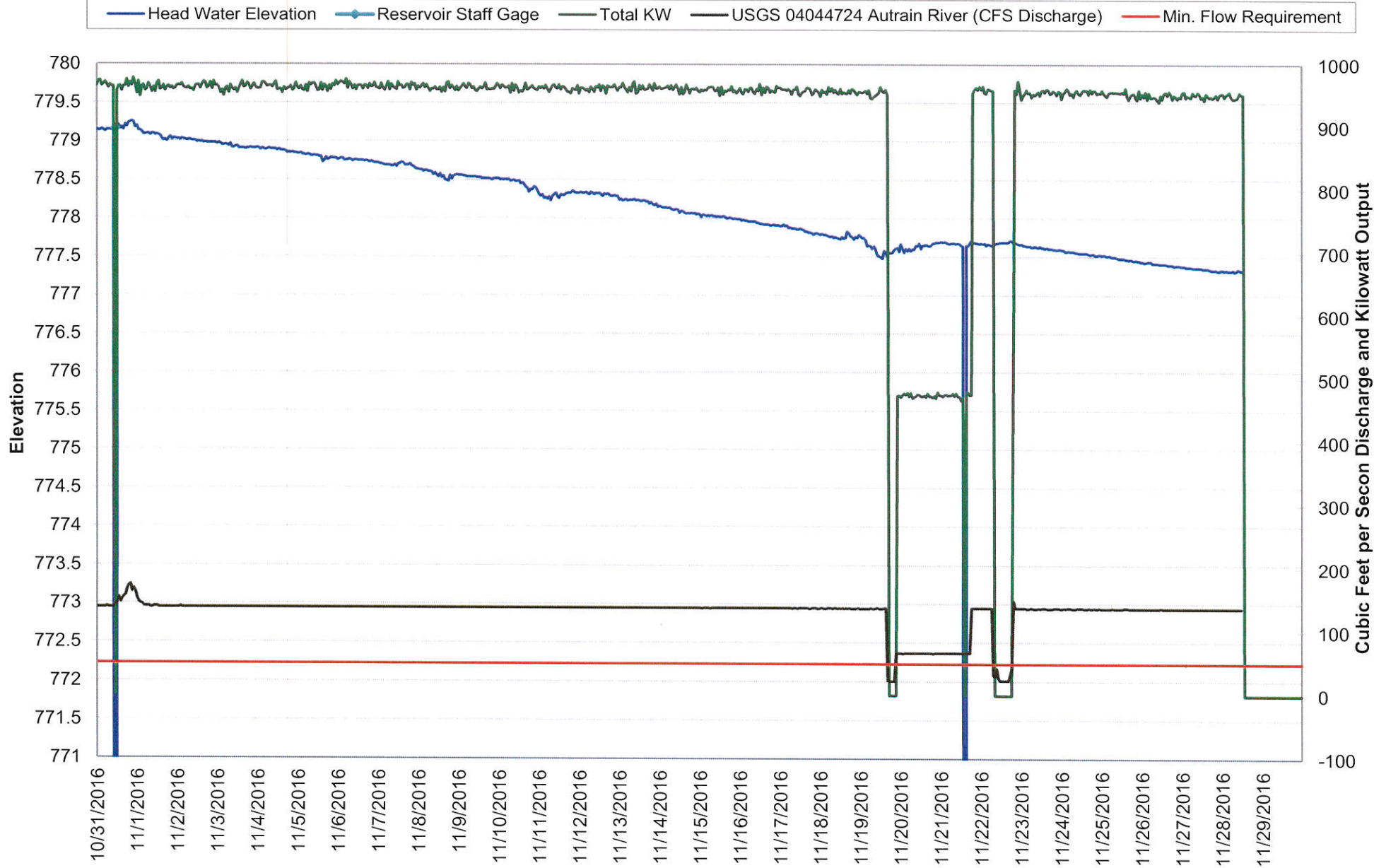
Cc:
Mr. Kyle Kruger, MDNR – Via E-Mail
Ms. Elle Gulotty, MDNR – Via E-Mail
Mr. Burr Fisher, USFWS – Via E-Mail
RWE, Corporate

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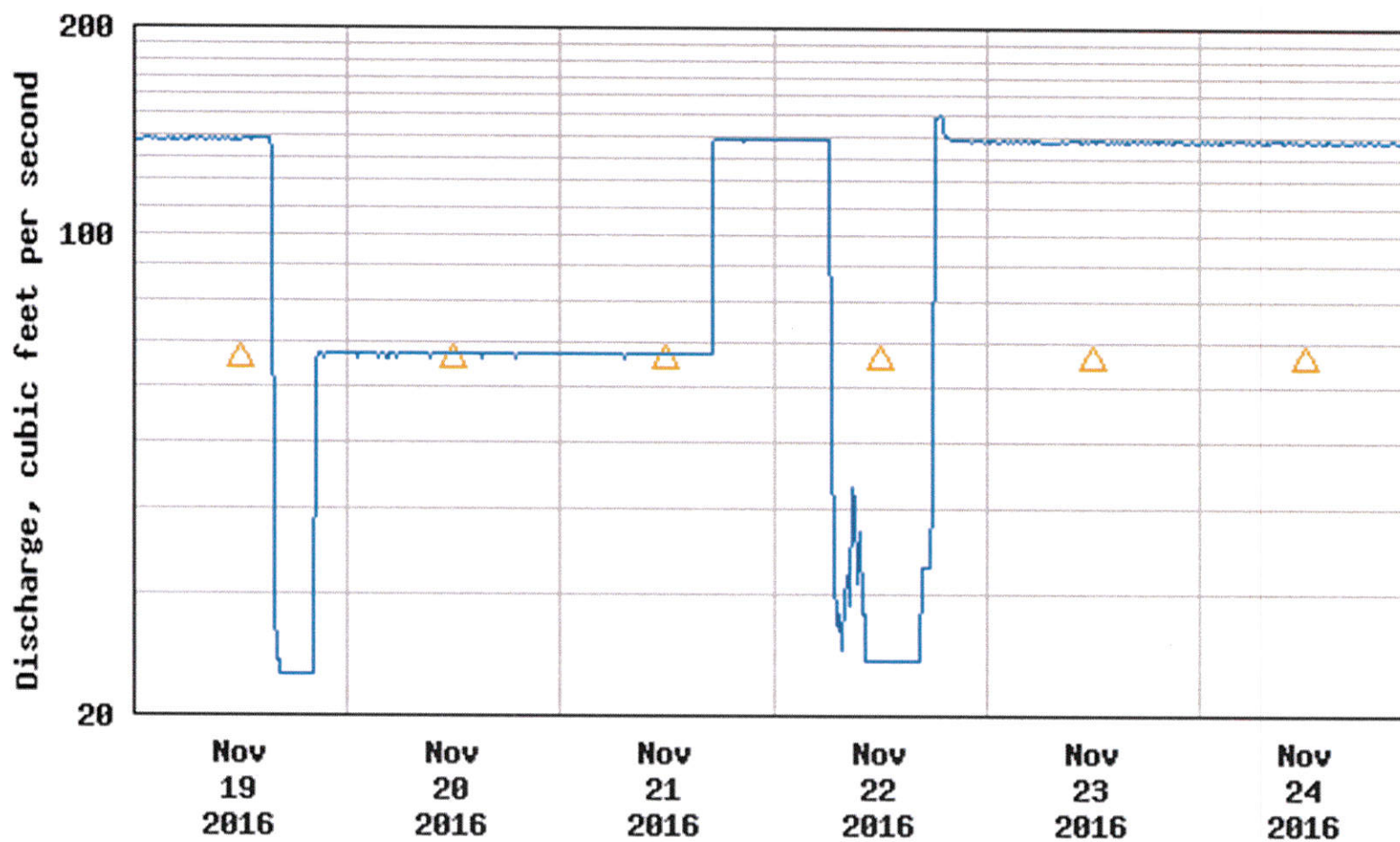
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Autrain Electronic Data November 2016 FERC # 10856



USGS 04044724 AU TRAIN RIVER AT FOREST LAKE, MI



----- Provisional Data Subject to Revision -----

△ Median daily statistic (22 years) — Discharge

Autrain November 2016 Deviation

| Date | Time | Head Water Elevation | Gen#1 KW | Gen#2 KW | Total KW | USGS 04044724 Autrain River (CFS Discharge) | Target Operating Elevation | Min. Flow Requirement |
|------------|----------|----------------------|----------|----------|----------|--|----------------------------------|--------------------------|
| 11/19/2016 | 0:00:00 | 777.77 | 480.20 | 475.77 | 956 | 137 | 776 | 50 |
| | 1:00:00 | 777.75 | 482.46 | 472.57 | 955 | 137 | 776 | 50 |
| | 2:00:00 | 777.75 | 485.54 | 470.29 | 956 | 137 | 776 | 50 |
| | 3:00:00 | 777.72 | 481.26 | 476.77 | 958 | 137 | 776 | 50 |
| | 4:00:00 | 777.64 | 483.59 | 469.92 | 954 | 137 | 776 | 50 |
| | 5:00:00 | 777.65 | 484.76 | 474.69 | 959 | 137 | 776 | 50 |
| | 6:00:00 | 777.64 | 472.68 | 474.13 | 947 | 138 | 776 | 50 |
| | 7:00:00 | 777.61 | 467.03 | 478.15 | 945 | 137 | 776 | 50 |
| | 8:00:00 | 777.64 | 472.11 | 476.65 | 949 | 137 | 776 | 50 |
| | 9:00:00 | 777.6 | 475.09 | 475.57 | 951 | 138 | 776 | 50 |
| | 10:00:00 | 777.53 | 477.42 | 474.93 | 952 | 138 | 776 | 50 |
| | 11:00:00 | 777.51 | 486.76 | 468.71 | 955 | 137 | 776 | 50 |
| | 12:00:00 | 777.5 | 485.15 | 478.93 | 964 | 137 | 776 | 50 |
| | 13:00:00 | 777.48 | 480.18 | 477.31 | 957 | 137 | 776 | 50 |
| | 14:00:00 | 777.58 | 481.24 | 474.35 | 956 | 138 | 776 | 50 |
| | 15:00:00 | 777.56 | 480.36 | 479.66 | 960 | 138 | 776 | 50 |
| | 16:00:00 | 777.5 | 477.84 | 473.84 | 952 | 24 | 776 | 50 |
| | 17:00:00 | 777.56 | 0.27 | 0.09 | 0 | 23 | 776 | 50 |
| | 18:00:00 | 777.55 | 0.21 | 0.12 | 0 | 23 | 776 | 50 |
| | 19:00:00 | 777.56 | 0.29 | 0.13 | 0 | 23 | 776 | 50 |
| | 20:00:00 | 777.59 | -0.05 | -0.05 | 0 | 23 | 776 | 50 |
| | 21:00:00 | 777.61 | 0.18 | 0.09 | 0 | 67 | 776 | 50 |
| | 22:00:00 | 777.62 | 0.12 | 473.99 | 474 | 67 | 776 | 50 |
| | 23:00:00 | 777.57 | 0.20 | 474.59 | 475 | 67 | 776 | 50 |
| 11/20/2016 | 0:00:00 | 777.67 | 0.21 | 471.7 | 472 | 67 | 776 | 50 |
| | 1:00:00 | 777.61 | 0.13 | 475.32 | 475 | 66 | 776 | 50 |
| | 2:00:00 | 777.56 | 0.13 | 478.08 | 478 | 67 | 776 | 50 |
| | 3:00:00 | 777.61 | 0.21 | 475.81 | 476 | 67 | 776 | 50 |
| | 4:00:00 | 777.58 | 0.09 | 479.16 | 479 | 67 | 776 | 50 |
| | 5:00:00 | 777.61 | 0.14 | 472.72 | 473 | 67 | 776 | 50 |
| | 6:00:00 | 777.58 | 0.26 | 478.65 | 479 | 67 | 776 | 50 |
| | 7:00:00 | 777.6 | 0.18 | 469.84 | 470 | 67 | 776 | 50 |
| | 8:00:00 | 777.6 | 0.25 | 471.96 | 472 | 67 | 776 | 50 |
| | 9:00:00 | 777.65 | 0.18 | 473.47 | 474 | 67 | 776 | 50 |
| | 10:00:00 | 777.64 | 0.09 | 476.95 | 477 | 67 | 776 | 50 |
| | 11:00:00 | 777.68 | 0.14 | 475.6 | 476 | 67 | 776 | 50 |
| | 12:00:00 | 777.61 | 0.12 | 473.18 | 473 | 67 | 776 | 50 |
| | 13:00:00 | 777.65 | 0.23 | 472.95 | 473 | 67 | 776 | 50 |
| | 14:00:00 | 777.65 | 0.12 | 474.72 | 475 | 67 | 776 | 50 |
| | 15:00:00 | 777.66 | 0.25 | 471.52 | 472 | 67 | 776 | 50 |
| | 16:00:00 | 777.65 | 0.06 | 478.24 | 478 | 67 | 776 | 50 |
| | 17:00:00 | 777.64 | 0.05 | 473.44 | 473 | 67 | 776 | 50 |
| | 18:00:00 | 777.65 | 0.14 | 473.61 | 474 | 67 | 776 | 50 |
| | 19:00:00 | 777.68 | 0.21 | 471.07 | 471 | 66 | 776 | 50 |
| | 20:00:00 | 777.68 | 0.20 | 474.02 | 474 | 67 | 776 | 50 |
| | 21:00:00 | 777.69 | 0.25 | 469.99 | 470 | 67 | 776 | 50 |
| | 22:00:00 | 777.69 | 0.21 | 479.94 | 480 | 67 | 776 | 50 |
| | 23:00:00 | 777.69 | 0.11 | 474.94 | 475 | 67 | 776 | 50 |
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| | 1:00:00 | 777.69 | 0.12 | 473.02 | 473 | 67 | 776 | 50 |
| | 2:00:00 | 777.7 | 0.23 | 475.33 | 476 | 67 | 776 | 50 |
| | 3:00:00 | 777.69 | 0.09 | 476.58 | 477 | 67 | 776 | 50 |
| | 4:00:00 | 777.68 | 0.11 | 474.21 | 474 | 67 | 776 | 50 |
| | 5:00:00 | 777.67 | 0.19 | 474.65 | 475 | 67 | 776 | 50 |
| | 6:00:00 | 777.68 | 0.19 | 474.76 | 475 | 67 | 776 | 50 |
| | 7:00:00 | 777.68 | 0.26 | 477.71 | 478 | 67 | 776 | 50 |
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| | 9:00:00 | 777.67 | 0.09 | 478.32 | 478 | 67 | 776 | 50 |
| | 10:00:00 | 777.68 | 0.22 | 472.9 | 473 | 67 | 776 | 50 |
| | 11:00:00 | 777.67 | 0.23 | 472.66 | 473 | 67 | 776 | 50 |
| | 12:00:00 | 777.65 | 0.06 | 466.38 | 466 | 67 | 776 | 50 |
| | 13:00:00 | 777.64 | 0.08 | 470.83 | 471 | 67 | 776 | 50 |
| | 14:00:00 | 0 | 0.00 | 0 | 0 | 67 | 776 | 50 |
| | 15:00:00 | 777.65 | 0.22 | 477.44 | 478 | 67 | 776 | 50 |
| | 16:00:00 | 777.64 | 0.25 | 480.04 | 480 | 67 | 776 | 50 |

| | | | | | | | | |
|-------------------|----------|--------|--------|--------|-----|-----|-----|----|
| | 17:00:00 | 777.68 | 0.05 | 475.47 | 476 | 67 | 776 | 50 |
| | 18:00:00 | 777.71 | 0.35 | 475.12 | 475 | 138 | 776 | 50 |
| | 19:00:00 | 777.68 | 477.96 | 476.35 | 954 | 138 | 776 | 50 |
| | 20:00:00 | 777.69 | 482.34 | 478.06 | 960 | 138 | 776 | 50 |
| | 21:00:00 | 777.68 | 482.61 | 480.71 | 963 | 138 | 776 | 50 |
| | 22:00:00 | 777.68 | 486.44 | 473.14 | 960 | 138 | 776 | 50 |
| | 23:00:00 | 777.67 | 488.57 | 476.34 | 965 | 138 | 776 | 50 |
| 11/22/2016 | 0:00:00 | 777.68 | 482.98 | 477.07 | 960 | 138 | 776 | 50 |
| | 1:00:00 | 777.67 | 487.71 | 477.64 | 965 | 138 | 776 | 50 |
| | 2:00:00 | 777.68 | 483.46 | 471.44 | 955 | 138 | 776 | 50 |
| | 3:00:00 | 777.65 | 479.71 | 473.73 | 953 | 138 | 776 | 50 |
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| | 6:00:00 | 777.65 | 479.11 | 479.47 | 959 | 138 | 776 | 50 |
| | 7:00:00 | 777.65 | 483.10 | 475.54 | 959 | 32 | 776 | 50 |
| | 8:00:00 | 777.67 | 0.18 | 0.36 | 1 | 30 | 776 | 50 |
| | 9:00:00 | 777.68 | 0.13 | 0.08 | 0 | 43 | 776 | 50 |
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| | 11:00:00 | 777.69 | 0.05 | 0.01 | 0 | 24 | 776 | 50 |
| | 12:00:00 | 777.69 | 0.13 | 0.01 | 0 | 24 | 776 | 50 |
| | 13:00:00 | 777.69 | 0.13 | 0.01 | 0 | 24 | 776 | 50 |
| | 14:00:00 | 777.69 | 0.14 | 0.02 | 0 | 24 | 776 | 50 |
| | 15:00:00 | 777.69 | 0.08 | 0.01 | 0 | 24 | 776 | 50 |
| | 16:00:00 | 777.69 | -0.05 | -0.05 | 0 | 24 | 776 | 50 |
| | 17:00:00 | 777.71 | 0.07 | 0.02 | 0 | 33 | 776 | 50 |
| | 18:00:00 | 777.71 | -0.01 | -0.02 | 0 | 43 | 776 | 50 |
| | 19:00:00 | 777.69 | 0.46 | 510.52 | 511 | 149 | 776 | 50 |
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| | 4:00:00 | 777.64 | 481.79 | 472.3 | 954 | 137 | 776 | 50 |
| | 5:00:00 | 777.64 | 483.82 | 471.74 | 956 | 138 | 776 | 50 |
| | 6:00:00 | 777.63 | 481.82 | 465.83 | 948 | 138 | 776 | 50 |
| | 7:00:00 | 777.63 | 481.93 | 470.69 | 953 | 137 | 776 | 50 |
| | 8:00:00 | 777.64 | 482.06 | 468.82 | 951 | 137 | 776 | 50 |
| | 9:00:00 | 777.63 | 477.29 | 476.04 | 953 | 137 | 776 | 50 |
| | 10:00:00 | 777.62 | 487.75 | 468.8 | 957 | 138 | 776 | 50 |
| | 11:00:00 | 777.64 | 478.43 | 471.9 | 950 | 137 | 776 | 50 |
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| | 18:00:00 | 777.61 | 483.08 | 471.63 | 955 | 137 | 776 | 50 |
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| 11/24/2016 | 0:00:00 | 777.59 | 478.21 | 467.21 | 945 | 137 | 776 | 50 |

Document Content(s)

16-11-22 JPK ATRN Min Flow Dev To FERC.PDF.....1-6