

**Real-Time Water Quality Monitoring Network
Calibration and Maintenance Schedule
Nalcor Energy – Churchill River**

The water quality probe is periodically removed to undergo necessary maintenance and calibration. Some of these removals are necessary to perform scheduled maintenance while others may be done in response to sudden fouling of the sensors or loss of calibration.

The maintenance/calibration process involves removing the water quality probe from the water body for cleaning, replacement of sensors and fluids, calibration and testing in a temperature-controlled laboratory. This usually takes place over a period of two days but may take longer for specific sites or to address unique problems.

NF03OE0001 – Churchill River Above Upper Muskrat Falls

Item Number	Date and time instrument was removed (mm/dd/yy)		Date and time instrument was reinstalled (mm/dd/yy)		Reason	Remarks
1			09/28/08	16:00	Maintenance/Calibration	Initial Installation
2	10/25/08	8:30			Maintenance/Calibration	Winter Removal
3			06/01/09	15:05		Initial Installation after winter months
4	06/24/09	14:30	06/24/09	14:30	Maintenance/Calibration	
5	07/20/09	9:45	07/20/09	9:45	Maintenance/Calibration	
6	09/01/09	15:02	09/01/09	15:02	Maintenance/Calibration	
7	09/23/09	17:27	09/23/09	17:27	Maintenance/Calibration	
8	11/02/09	12:45			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
9			05/20/10	14:27		Initial Installation after winter months

10	06/23/10	16:00	06/23/10	16:00	Maintenance/Calibration	
11	07/23/10	16:02	07/23/10	16:02	Maintenance/Calibration	
12	08/22/10	14:30	08/22/10	14:30	Maintenance/Calibration	
13	09/21/10	14:00	09/21/10	14:00	Maintenance/Calibration	
14	11/02/10	16:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
15			05/26/11	14:07		Initial Installation after winter months
16	06/29/11	12:42	06/29/11	12:45	Maintenance/Calibration	
17	08/02/11	16:00	08/02/11	16:00	Maintenance/Calibration	
18	09/01/11	13:30	09/01/11	14:05	Maintenance/Calibration	
19	10/04/11	15:45	10/04/11	15:45	Maintenance/Calibration	
20	10/05/11	11:37	10/05/11	11:40	Replaced next day because sensor not working	
21	11/01/11	17:19			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
22			06/29/12	18:30		Initial Installation after winter months
23	07/24/12	16:00	07/24/12	16:00	Maintenance/Calibration	
24	08/21/12	14:30	08/21/12	14:30	Maintenance/Calibration	
25	09/25/12	15:30	09/25/12	15:20	Maintenance/Calibration	
26	11/01/12	12:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in

						the spring when ice conditions allow.
27			05/24/13	10:05		Initial Installation after winter months
28	06/27/13	09:30	06/27/13	9:30	Maintenance/Calibration	
29	08/08/13	16:00	08/08/13	16:00	Maintenance/Calibration	
30	09/12/13	13:00	09/12/13		Maintenance/Calibration	
31	10/11/13	11:30	10/11/13	12:00	Maintenance/Calibration	
32	11/06/13	14:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
33			05/29/14	15:15		Initial Installation after winter months
34	06/25/14	16:25	06/25/14	16:25	Maintenance/Calibration	
35	07/23/14	10:40	07/23/14	10:40	Maintenance/Calibration	
36	08/14/14	12:30	08/14/14	12:45	Maintenance/Calibration	
37	10/01/14	11:55	10/01/14	11:00	Maintenance/Calibration	
38	11/05/14	11:15			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
39			05/27/15	10:30		Initial Installation after winter months
40	06/24/15	12:00	06/24/15	12:50	Maintenance/Calibration	
41	08/05/15	11:00	08/05/15	11:15	Maintenance/Calibration	
42	09/01/15	12:15	09/01/15	12:30	Maintenance/Calibration	
43	09/30/15	13:00	09/30/15	13:10	Maintenance/Calibration	

44	11/06/15	09:20			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
45			05/25/16	12:00		Initial Installation after winter months
46	06/29/16	14:00	06/29/16	14:20	Maintenance/Calibration	
47	08/03/16	11:30	08/03/16	11:30	Maintenance/Calibration	
48	09/15/16	13:00	09/15/16	13:30	Maintenance/Calibration	
49	10/11/16	10:50				Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
Instrument was not deployed in spring/summer/fall 2017						
Instrument was not deployed in spring/summer/fall 2018						
Instrument was not deployed in spring/summer/fall 2019						
Instrument was not deployed in spring/summer/fall 2020						

NF03OE0013 – Churchill River Below Metchin River

Item Number	Date and time instrument was removed (mm/dd/yy)		Date and time instrument was reinstalled (mm/dd/yy)		Reason	Remarks
1			09/26/08	15:00	Maintenance/Calibration	Initial Installation
2	10/24/08	3:30			Maintenance/Calibration	Winter Removal
3			06/01/09	9:45		Initial Installation after winter months
4	06/24/09	9:01	06/24/09	9:15	Maintenance/Calibration	
5	07/20/09	17:44	07/20/09	17:44	Maintenance/Calibration	
6	09/01/09	11:15	09/01/09	11:15	Maintenance/Calibration	
7	09/23/09	9:17	09/23/09	9:17	Maintenance/Calibration	
8	11/02/09	10:11			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
9			05/17/10	09:11		Initial Installation after winter months
10	06/23/10	09:21	06/23/10	09:45	Maintenance/Calibration	
11	07/23/10	09:25	07/23/10	09:25	Maintenance/Calibration	
12	08/22/10	11:45	08/22/10	11:56	Maintenance/Calibration	
13	09/21/10	11:45	09/21/10	09:55	Maintenance/Calibration	
14	11/02/10	13:21			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
15			05/27/11	12:02		Initial Installation after winter months
16	06/29/11	09:02	06/29/11	09:20	Maintenance/Calibration	
17	08/02/11	09:19	08/02/11	09:20	Maintenance/Calibration	
18	09/01/11	10:38	09/01/11	10:51	Maintenance/Calibration	
19	10/04/11	12:15	10/04/11	12:15	Maintenance/Calibration	
20	11/01/11	10:56			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
21			06/29/12	11:30		Initial Installation after winter months
22	07/24/12	10:30	07/24/12	13:30	Maintenance/Calibration	
23	08/21/12	12:30	08/21/12	12:30	Maintenance/Calibration	

24	09/25/12	10:20	09/25/12	16:00	Maintenance/Calibration	
25	10/31/12	16:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
26			05/23/13	12:40		Initial Installation after winter months
27	06/26/13	12:51	06/26/13	12:51	Maintenance/Calibration	
28	08/08/13	12:20	08/08/13	12:20	Maintenance/Calibration	
29	09/14/13	14:00	09/14/13		Maintenance/Calibration	
30	10/10/13	14:10	10/10/13		Maintenance/Calibration	
31	11/06/13	10:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
32			05/29/14	11:30		Initial Installation after winter months
33	06/25/14	12:00	06/25/14	12:00	Maintenance/Calibration	
34	07/22/14	12:00	07/22/14	12:10	Maintenance/Calibration	
35	08/12/14	11:15	08/12/14	11:15	Maintenance/Calibration	
36	09/30/14	10:30				Station discontinued
37			09/29/17	11:20		Station reinstated
38	11/02/17	11:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
39			08/17/18	15:00		Initial Installation after winter months
40	11/15/18	13:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
41			06/11/19	12:00		Initial Installation after winter months
42	07/16/19	10:45	07/16/19	11:00	Maintenance/Calibration	
43	09/03/19	10:45	09/03/19	10:55	Maintenance/Calibration	
44	10/29/19	10:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the

						spring when ice conditions allow.
45			07/15/20	1150		Initial Installation after winter months
46	09/01/20	1245	09/01/20	1300	Maintenance/Calibration	
47	10/27/20	1300			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.

NF03OE0050 – Churchill River 6.15km Below Muskrat Falls

Item Number	Date and time instrument was removed (mm/dd/yy)		Date and time instrument was reinstalled (mm/dd/yy)		Reason	Remarks
1			09/28/08	11:15	Maintenance/Calibration	Initial Installation
2	10/25/08	9:10			Maintenance/Calibration	Winter Removal
3			06/01/09	19:01		Initial Installation after winter months
4	06/24/09	16:54	06/24/09	16:54	Maintenance/Calibration	
5	07/20/09	9:21	07/20/09	9:21	Maintenance/Calibration	
6	09/01/09	16:15	09/01/09	16:15	Maintenance/Calibration	
7	09/22/09	16:22	09/22/09	16:22	Maintenance/Calibration	
8	11/02/09	13:10			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
9			05/20/10	15:15		Initial Installation after winter months
10	06/23/10	16:25	06/23/10	16:25	Maintenance/Calibration	
11	07/23/10	16:55	07/23/10	16:55	Maintenance/Calibration	
12	08/22/10	15:20	08/22/10	15:30	Maintenance/Calibration	
13	09/21/10	15:00	09/21/10	15:00	Maintenance/Calibration	
14	11/03/10	09:38			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
15			05/27/11	15:05		Initial Installation after winter months
16	06/29/11	13:50	06/29/11	13:50	Maintenance/Calibration	
17	08/02/11	16:30	08/02/11	16:30	Maintenance/Calibration	
18	08/03/11	09:30	08/03/11	16:30	Replaced next day because sensor not working	
19	09/01/11	14:30	09/01/11	14:30	Maintenance/Calibration	
20	09/02/11	09:10	09/02/11	09:15	Replaced next day because sensor not working	
21	10/04/11		10/04/11	12:20	Maintenance/Calibration	
22	11/02/11	14:30			Winter Removal	Instrument was removed for the

						winter season. It will be reinstalled in the spring when ice conditions allow.
23			06/29/12	17:45		Initial Installation after winter months
24	07/24/12	16:40	07/24/12	16:40	Maintenance/Calibration	
25	08/22/12	12:30	08/22/12	12:30	Maintenance/Calibration	
26	09/25/12	16:00	09/26/12	10:40	Maintenance/Calibration	
27	11/01/12				Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
28			05/24/13	13:00		Initial Installation after winter months
29	06/27/13	10:25	06/27/13	10:25	Maintenance/Calibration	
30	08/09/13	9:30	08/09/13	09:30	Maintenance/Calibration	
31	09/12/13	14:00	09/12/13	14:00	Maintenance/Calibration	
32	10/11/13	12:30	10/11/13	12:30	Maintenance/Calibration	
33	11/08/13	11:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
34			06/25/14	17:35		Initial Installation after winter months
35	07/23/14	11:20			Maintenance/Calibration	
						Instrument removed due to intense silt movement (i.e. sonde buried). It will be reinstalled when sediment dissipates.
36			09/02/15	11:05		Initial Installation after sediment dissipated.
37	10/01/15	12:00	10/01/15	12:05	Maintenance/Calibration	
38	11/06/15	10:10			Winter Removal	Instrument was removed for the winter season. It will be reinstalled

						in the spring when ice conditions allow.
39			06/30/16	12:30		Initial Installation after winter months
40	08/03/16	11:50	08/03/16	12:05	Maintenance/Calibration	
41	09/15/16	14:00	09/15/16	14:10	Maintenance/Calibration	
42	11/08/16	12:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
43			05/31/17	11:40		Initial Installation after winter months
44	07/05/17	12:10	07/05/17	11:50	Maintenance/Calibration	
45	08/10/17	12:45	08/10/17	12:55	Maintenance/Calibration	
46	09/27/17	12:00	09/27/17	12:00	Maintenance/Calibration	
47	11/01/17	12:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
48			05/29/18	11:00		Initial Installation after winter months
49	07/10/18	11:33	07/10/18	11:45	Maintenance/Calibration	
50	08/29/18	9:45	08/29/18	9:50	Maintenance/Calibration	
51	09/26/18	11:00	09/26/18	11:20	Maintenance/Calibration	
52	10/31/18	11:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
53			05/28/19	13:30		Initial Installation after winter months
54	07/09/19	14:10	07/09/19	14:20	Maintenance/Calibration	
55	09/04/19	09:50	09/04/19	10:00	Maintenance/Calibration	
56	10/04/19	11:20	10/04/19	11:30	Maintenance/Calibration	
57	10/30/19	09:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when

						ice conditions allow.
58			06/29/20	15:45		Initial Installation after winter months
59	08/13/20	13:35	08/13/20	13:50	Maintenance/Calibration	
60	09/22/20	13:05	09/22/20	13:30	Maintenance/Calibration	
61	11/04/20	12:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.

NF03OE0051 – Churchill River Below Grizzle Rapids

Item Number	Date and time instrument was removed (mm/dd/yy)		Date and time instrument was reinstalled (mm/dd/yy)		Reason	Remarks
1			09/27/08	16:00	Maintenance/Calibration	Initial Installation
2	10/24/08	16:50			Maintenance/Calibration	Winter Removal
3			06/24/09	12:00	Initial Installation after winter months	Other Churchill instruments were deployed earlier in June; however, there was an ice-wall at this station.
4	07/20/09	11:25	07/20/09	11:25	Maintenance/Calibration	
5	09/01/09	13:27	09/01/09	13:27	Maintenance/Calibration	
6	09/22/09	13:55	09/22/09	13:55	Maintenance/Calibration	
7	11/02/09	11:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
8			06/24/10	09:30	Initial Installation after winter months	Other Churchill instruments were deployed earlier in May; however, there was an ice-wall at this station.
9	07/23/10	15:03	07/23/10	15:03	Maintenance/Calibration	
10	08/22/10	13:35	08/22/10	13:35	Maintenance/Calibration	
11	09/21/10	13:00	09/21/10	13:00	Maintenance/Calibration	
12	11/02/10	15:15			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
13			06/29/11	11:45	Initial Installation after winter months	Other Churchill instruments were deployed earlier in May; however, there was an ice-wall at this station.
14	08/02/11	14:45	08/02/11	14:45	Maintenance/Calibration	
15	09/01/11	12:54	09/01/11	13:05	Maintenance/Calibration	

16	10/04/11	14:45	10/04/11	14:45	Maintenance/Calibration	
17	11/01/11	16:12			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
18			06/29/12	13:10		Initial Installation after winter months
19	07/24/12	15:00	07/24/12	15:00	Maintenance/Calibration	
20	08/21/12	13:46	08/21/12	13:46	Maintenance/Calibration	
21	09/25/12	14:14	09/25/12	14:30	Maintenance/Calibration	
22	11/07/12				Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
23			05/23/13	16:00		Initial Installation after winter months
24	06/26/13	16:10	06/26/13	16:10	Maintenance/Calibration	
25	08/08/13	14:00	08/08/13	13:30	Maintenance/Calibration	
26	09/14/13		09/14/13		Maintenance/Calibration	
27	10/10/13	10:00	10/10/13	10:00	Maintenance/Calibration	
28	11/06/13	08:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
29			06/25/14	15:50		Initial Installation after winter months
30	07/22/14	14:20	07/22/14	14:20	Maintenance/Calibration	
31	08/12/14	17:00	08/12/14	17:00	Maintenance/Calibration	
32	10/01/14	10:00	10/01/14	10:00	Maintenance/Calibration	
33	11/05/14	10:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
34			06/24/15	11:30		Initial Installation after winter months
35	08/05/15	09:45	08/05/15	09:45	Maintenance/Calibration	

36	09/01/15	11:05	09/01/15	11:35	Maintenance/Calibration	
37	09/30/15	11:30	09/30/15	11:30	Maintenance/Calibration	
38	11/10/15	12:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
39			06/29/16	10:00		Initial Installation after winter months
40	08/03/16	10:30	08/03/16	10:45	Maintenance/Calibration	
41	09/15/16	10:20	09/15/16	10:50	Maintenance/Calibration	
42	10/26/16	13:00			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
Station at below Grizzle Rapids discontinued; moved to above Grizzle Rapids						
1			07/12/17	12:30		Initial Installation after winter months
2	08/10/17	10:00	08/10/17	10:30	Maintenance/Calibration	
3	09/29/17	09:30	09/29/17	10:00	Maintenance/Calibration	
4	11/01/17	10:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
5			07/13/18	13:40		Initial Installation after winter months
6	08/17/18	16:30	08/17/18	16:45	Maintenance/Calibration	
7	10/12/18	09:50	10/12/18	10:00	Maintenance/Calibration	
8	11/15/18	10:30			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
9			07/03/19	14:45		Initial Installation after winter months
10	09/03/19	13:30	09/03/19	13:45	Maintenance/Calibration	
11	10/04/19	10:00	10/04/19	10:30	Maintenance/Calibration	
12	10/29/19	15:00			Winter Removal	Instrument was

						removed for the winter season. It will be reinstalled in the spring when ice conditions allow.
13			06/29/20	14:30		Initial Installation after winter months
14	08/13/20	11:50	08/13/20	12:05	Maintenance/Calibration	
15	09/22/20	12:00	09/22/20	12:20	Maintenance/Calibration	
16	11/06/20	13:10			Winter Removal	Instrument was removed for the winter season. It will be reinstalled in the spring when ice conditions allow.