WESTBANK FIRST NATION

TOMAT CREEK HYDROMETRIC AND WEATHER DATA 2014 SUMMARY

Prepared for the

WESTBANK FIRST NATION

by

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February, 2015

Westbank First Nation – Tomat Creek Hydrometric and Weather Summary

Prepared for the Westbank First Nation

(2014 Report)

1.0 Introduction:

This report summarizes the 2013-2014 Westbank First Nation Tomat Creek hydrometric and storm weather project. The goal of the project is to determine the hydrometric/run-off responses in Tomat Creek following precipitation events.

Three hydrometric stations were installed on October 29, 2013 at Tomat Creek through the Two Eagles Golf Course; two stations along the Tomat Creek mainstem channel and one station at the new Boucherie detention pond, near the outlet. The three stations; Tomat Creek at Elk Road, Tomat Creek above Boucherie Pond and the Boucherie Pond are designed to collect stream levels and pond water levels to determine pre and post storm streamflow/pond responses.

Weather monitoring stations are installed at both IR9 and IR10 drinking water reservoirs to provide precipitation event data. For the purpose of this project, precipitation events are considered as consecutive (or near consecutive) rainfall events that equate to 5mm or greater. In general, less than 5mm rainfall events do not result in significant streamflow responses.

The scope of this report is to provide the summary data for the three hydrometric stations and the two weather stations. The storm data and streamflow response data contained within this report is provided as summary data only and storm specific flood responses and statistics are not reviewed. The complete digital data archives have been submitted to WFN for any further analyses that may be required.

2.0 Data Collection:

The hydrometric data collected conforms to standards outlined in the BC Resource Inventory Standards Committee (RISC) *Manual of British Columbia Hydrometric Standards - Version 1.0, March 2009*. Please refer to the RISC manual for additional details (http://www.ilmb.gov.bc.ca/risc/pubs/aquatic/index.htm).

The continuous hydrometric data (15-minute interval) was collected at the three hydrometric stations from October 29, 2013 through December 31, 2014. Discharges are reported for the Tomat Creek stations and only water level data is reported for the Boucherie Pond. (detailed discharge and water level data is provided in Appendix A).

The maximum field confirmed discharges at the stations are 0.0053 m^3/s at Tomat Creek at Elk Road 0.0041 m^3/s at Tomat Creek above Boucherie Pond. Discharges reported beyond these values are estimated based on extrapolation methods outlined in the RISC standards.

In addition, very low flows are difficult to accurately measure and fit to a stage discharge curve. Although the absolute errors associated with low flow measurements may be very small volumes, the percent error can be very large.

Data is missing from November 22, 2014 through December 31, 2014 at Tomat Creek above Boucherie Pond due to sensor power failure. The power supply was replaced January 15, 2015.

The maximum water level recorded at the Boucherie Pond was 1.576 m, which was beyond the rated maximum scale of the pressure transducer. The sensor was ultimately destroyed by the June flood event and a new sensor is required for this station.

Weather stations were previously installed during 2009 at both IR9 and IR10 drinking water reservoirs. Data collected at the stations includes air temperature, relative humidity, precipitation (at both IR9 and IR10 stations) plus wind speed and wind direction (at IR10 only).

All the data parameters are stored at 15-minute intervals, however only the precipitation and air temperatures are referenced for this project. Complete raw data files were forwarded to WFN staff for archival (data summaries are provided in Appendix A at the end of this report).

A total of 16 storms with >/= 5mm continuous rainfall was identified during the October 2013 through December 2014 period. In some instances, only one of the weather stations met the 5 mm precipitation criterion (refer to Appendix A).

Each of the rain events resulted in increased streamflows and pond levels as anticipated. The increased discharges ranged from +20% to +5,128% discharge following each rain event. The Boucherie Pond levels increased from +35% to +913% following each rain event (refer to Appendix A).

3.0 Conclusions:

- The hydrometric stations were installed October 29, 2013 and were programmed to collect hydrometric data at 15-minute intervals.

- The Tomat Creek above Boucherie Pond sensor experienced a power failure and data is not available from November 22, 2014 through January 15, 2015, at which time the power supply was replaced.

- The Boucherie Pond station was destroyed by floodwaters on June 15, 2014 and must be replaced. Data beyond June 14, 2014 is not available for this station.

- The complete data set for Tomat Creek at Elk Road station (October 2013 through December 2014) is available and referenced in this report.

- All complete data sets for the hydrometric stations have been archived with WFN Staff.

- Data for both weather stations (IR9 and IR10 reservoirs) has also been archived with WFN staff and is also referenced in this document.

- All 16 of the 5mm rainstorm events resulted in increased streamflow and increased pond levels. The magnitude of the increased events ranged widely depending on the pre storm base flows and the magnitude of the storm. Further storm and stream flow analyses are beyond the scope of this report.

4.0 Recommendations:

- Continue to collect and analyze hydrometric and weather data at the stations to develop a database that can be used to define additional runoff and storm response trends.

- Continue to measure stage and discharge during the 2015 open water season to better define the stage discharge relationship at the hydrometric stations.

- Replace the sensor and reconfigure the Boucherie Pond station to ensure station integrity during future flood events.

- Re-survey the installations at the hydrometric stations to ensure the reference gauge elevations remain stable during the 2015 season.

Prepared by Gary Van Emmerik, AScT.

Appendix A

Data

(Adapted from) RISC HYD-01 Description of Hydrometric Station

Original **Y**/N Revised Y/**N**
Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek at Elk Road** EMS ID: n/a
Station #: n/a

Action (Station Established, Relocated, Closed)	Date: (yyyy/mm/dd)	By Whom
Established	*2013/10/29*	*G. Van Emmerik*

Site Description: *stilling well located at the left bank Tomat Creek at Two Eagles Golf Course overflow parking lot. Near cart path to Hole #10.*

Location Type and Region: *Stream station, Okanagan/Kamloops*
Nearest Community: *West Kelowna*
Site Access Description: *HWY 97S to Elk Road. Proceed on Elk Road towards overflow parking lot.*

Drainage Area upstream from Station: ***not reported***
Co-ordinates: ***49°50'20" N, 119°36'15" W (~398 m ASL)***

Water Level Gauge:

Manual	Recorder
Types: ***Standard vertical staff gauge*** Chain Gauge Wire Weight Gauge Reference Marks	Types: Graphical Y/N Digital **Y**/N If digital, sensor types ***Pressure Transducer***, bubbler, shaft encoder, radar/ultrasonic, other
Reading Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined	Reading/Sensor Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined

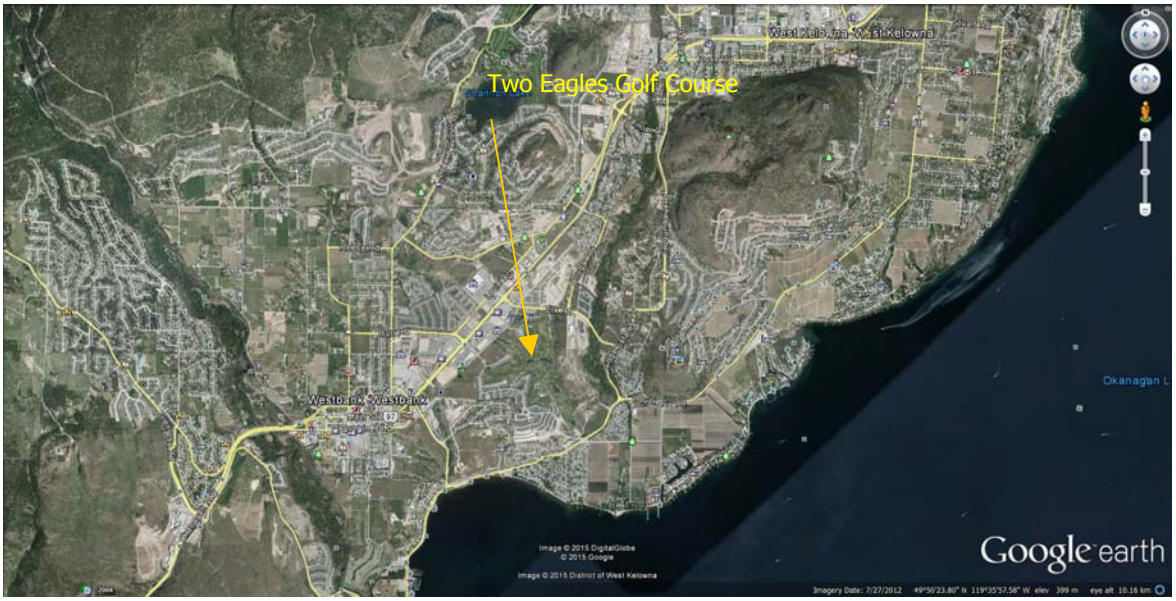
Reference Gauge Type: ***standard vertical staff gauge***, chain gauge, wire weight gauge, reference marks.
Zero Flow at Gauge Height: ***0.040 m***

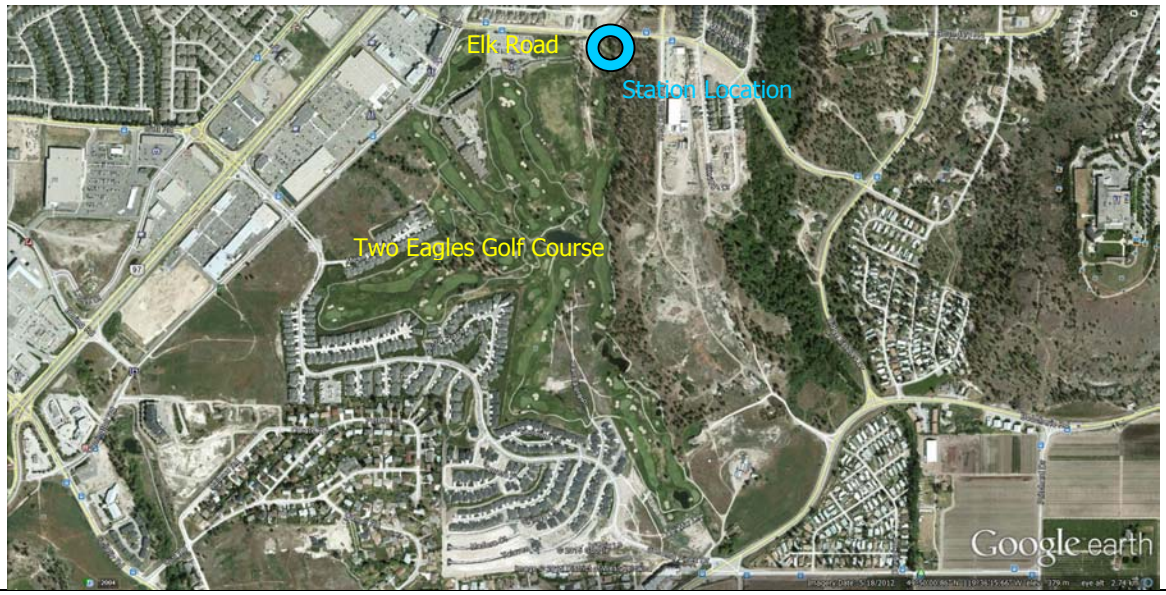
Benchmarks:

Benchmark	Date Established (yy/mm/dd)	Elevation when first established	GSC Datum Elevation, if any
BM #1	-	- m	None

Channel Description: ***small channel morphology, riffle pool with cobble bed***
Stream Flow: (Regulated Y/N, Natural **Y**/N)
Station Type: Water Level Only Y/N, Discharge only Y/N, Both **Y**/N

Location and Site Details: **Tomat Creek at Elk Road.**





Remarks: Access to station via golf course overflow parking lot via Elk Road.

RISCHYD02 Not completed to date – Survey data to be collected during 2015 open water period.

(Adapted from) RISC HYD-03 Summary of Discharge Measurements

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek at Elk Road** EMS ID: **n/a**
Station #: **n/a**

Channel Condition: 3 (see below)

Meter Type: Electromagnetic, Marsh McBirney Flow Mate 2000

Field Data Summary (refer to following pages)				**From Stage Discharge Table #1 – 2013-14**		
Width (m)	**Total Area (m^2)**	**Mean Velocity (m/s)**	**Total Discharge (m^3/s)**	**Disch. (m^3/s)**	**Diff.**	**%**
Oct 29, 2013 13:30 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.25	**0.027**	**0.072**	**0.0019**	**0.0019**	**0**	**0%**
Nov 29, 2013 12:30 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.25	**0.024**	**0.114**	**0.0027**	**0.0027**	**0**	**0%**
*Mar 31, 2014 12:00 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.35	*0.036*	*0.089*	*0.0034*	*0.0017*	*-0.0017*	*-100%*
May 9, 2014 14:00 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.30	**0.030**	**0.178**	**0.0053**	**0.0058**	**-0.0005**	**-8.6%**
*June 25, 2014 07:15 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.35	*0.025*	*0.167*	*0.0045*	*0.0032*	*0.0013*	*-41%*

Notes: A predominantly low flow condition, the gauge section is modified to attempt to achieve acceptable depths and velocities to be measured with the flow meter. The stream gauge section is located immediately downstream from the stilling well, and is difficult to accurately measure.

Low flow discharges (<~0.005 m^3/s) are difficult to measure in the field due to equipment limitations. The stage discharge table data for these flows is based on a "best fit" hand drawn curve, and the curve values prevail for low flow measurements as precise field measurements at low levels is very difficult to obtain.

An undetermined error occurred on the March 31, 2014 discharge calculation; this value was removed from the analysis data set. Vegetation in the stream on the June 25, 2014 also affected the water level. Attempts to remove the growth were only partly successful and this data point is also subject to increased error. Refer to the stage discharge curves and table for additional information. The other stage discharge data fits the stage discharge curve.

(Adapted from) RISC HYD-03 Summary of Discharge Measurements

Channel Condition Code:
1-Fixed control, stable channel, straight reach, measurements consistent with rating curve, no weeds, boulders or debris
2-Stable channel, relatively straight reach, measurements consistent with rating curve, minimal weeds or boulders
3-Minor hydraulic problems related to channel instability; measurements are not consistent with rating curve, weed growth or occasional boulders
4-Unstable channel due to erosion, degradation or aggradations, variable backwater, turbulence, significant weed growth, boulder bed
5-Undefined

Meter Calibration Code:
1-Meter calibrated and the validity of calibration is confirmed
2-Meter previously calibrated but validity of calibrations not confirmed
3-Undefined

Meter Field Verified:
1-At least annually
2-Less often than annually
3-Undefined

Data Double Checked February 25, 2015

Oct 29, 2013 at approx. 13:30 to 13:45 PST Tomat Cr at Elk Road
Used 0.6 depth for flow meter.

Staff = 0.198
Sensor = 0.178 12.4 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
0.025-0.05	0.10	0.05	0.005	0.07	0.00035	18.52%
0.10	0.10	0.05	0.005	0.08	0.00040	21.16%
0.15	0.09	0.05	0.005	0.09	0.00041	21.43%
0.20	0.11	0.05	0.006	0.07	0.00039	20.37%
0.25-0.275	0.14	0.05	0.007	0.05	0.00035	18.52%
		Total Width	*Tot. Area*	*Average V*		
		0.25	0.027	0.072		
		0.25				
						100.00%
					0.0019	
Liters/second		1.89		0.07		
US Gal/second		0.50				
US Gal/minute		29.96				
ft3/second		0.07				
ft3/day		5766.63				
Acre Feet/day		0.13				

average D 0.108

Data Double Checked February 25, 2015

Nov. 29, 2013 at approx. 12:30 to 12:50 PST Tomat Cr at Elk Road
Used 0.6 depth for flow meter.

Staff = 0.200
Sensor = 0.186 10.7 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
0.0-0.025	0.10	0.05	0.005	0.12	0.00060	22.14%
0.05	0.10	0.05	0.005	0.10	0.00050	18.45%
0.10	0.10	0.05	0.005	0.10	0.00049	18.08%
0.15	0.10	0.05	0.005	0.12	0.00060	22.14%
.20-0.25	0.08	0.05	0.004	0.13	0.00052	19.19%
		Total Width	*Tot. Area*	*Average V*		
		0.25	0.024	0.114		
		0.25				
						100.00%
					0.0027	

Liters/second	2.71	0.11	
US Gal/second	0.72		
US Gal/minute	42.95		
ft3/second	0.10		
ft3/day	8268.56		
Acre Feet/day	0.19		

average D 0.096

Data Double Checked February 25, 2015

March 31, 2014 at approx. 12:00 to 12:15 PST Tomat Cr at Elk Road
Used 0.6 depth for flow meter.

Staff = 0.195
Sensor = 0.171 10.4 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
.1225-.15	0.02	0.05	0.001	0.03	0.00003	0.88%
0.20	0.11	0.05	0.006	0.11	0.00061	17.85%
0.25	0.11	0.05	0.006	0.13	0.00072	21.09%
0.30	0.12	0.05	0.006	0.12	0.00072	21.24%
0.35	0.11	0.05	0.006	0.12	0.00066	19.47%
0.40	0.12	0.05	0.006	0.07	0.00042	12.39%
.45-0.475	0.12	0.05	0.006	0.04	0.00024	7.08%
		Total Width	*Tot. Area*	*Average V*		
		0.35	0.036	0.089		
		0.35				
						100.00%
					0.0034	
Liters/second		3.39		0.09		
US Gal/second		0.90				
US Gal/minute		53.73				
ft3/second		0.12				
ft3/day		10343.33				
Acre Feet/day		0.24				
average D	0.101					

Data Double Checked February 25, 2015

May 9, 2014 at approx. 14:00 to 14:15 PST Tomat Cr at Elk Road
Used 0.6 depth for flow meter.

Staff = 0.236
Sensor = 0.218 10.9 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
.025-.05	0.04	0.05	0.002	0.13	0.00026	4.87%
0.10	0.14	0.05	0.007	0.14	0.00098	18.35%
0.15	0.12	0.05	0.006	0.10	0.00060	11.24%
0.20	0.10	0.05	0.005	0.17	0.00085	15.92%
0.25	0.10	0.05	0.005	0.25	0.00125	23.41%
.30-0.325	0.10	0.05	0.005	0.28	0.00140	26.22%
		Total Width	*Tot. Area*	*Average V*		
		0.30	0.030	0.178		
		0.30				
						100.00%
					0.0053	
Liters/second		5.34		0.18		
US Gal/second		1.41				
US Gal/minute		84.64				
ft3/second		0.19				
ft3/day		16293.03				
Acre Feet/day		0.37				

average D 0.100

Data Double Checked February 25, 2015

June 25, 2014 at approx. 07:15 to 07:30 PST Tomat Cr at Elk Road
Used 0.6 depth for flow meter.

Staff = 0.205
Sensor = 0.191 13.9 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
.0275-.05	0.03	0.05	0.002	0.16	0.00024	5.33%
0.10	0.08	0.05	0.004	0.22	0.00088	19.53%
0.15	0.08	0.05	0.004	0.22	0.00088	19.53%
0.20	0.10	0.05	0.005	0.19	0.00095	21.09%
0.25	0.08	0.05	0.004	0.17	0.00068	15.09%
0.30	0.10	0.05	0.005	0.16	0.00080	17.76%
.35-.375	0.03	0.05	0.002	0.05	0.00008	1.66%
		Total Width	*Tot. Area*	*Average V*		
		0.35	0.025	0.167		
		0.35				
						100.00%
					0.0045	
Liters/second		4.51		0.17		
US Gal/second		1.19				
US Gal/minute		71.41				
ft3/second		0.16				
ft3/day		13745.34				
Acre Feet/day		0.32				

average D 0.071

(Adapted from) RISC HYD-04 Water Stage Recorder-Station Log

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek at Elk Road** EMS ID: **n/a**
Station #: **n/a**

Date (yyyy/mm/dd)	Arrival				Departure				
	Time		Gauge Height/Stage (m)		Time		Gauge Height/Stage (m)		Initials
	Watch	Logger	Ref. Gauge	Logger	Watch	Logger	Ref. Gauge	Logger	
2013/10/29	13:25	-	-	-	13:25	13:25	0.198	0.178	GV
Comments:	Initial site set up, set sensor to arbitrary depth, Q measured.								
2013/11/29	12:35	12:35	0.200	0.184	12:45	12:45	0.200	0.184	GV
Comments:	Data downloaded, discharge measured.								
2014/01/04	13:09	13:10	0.198	0.1795	13:15	13:16	0.198	0.1795	GV
Comments:	Discharge not measured, data downloaded, left sensor as is.								
2014/02/28	11:55	11:52	0.200	0.184	12:02	12:00	0.200	0.184	GV
Comments:	Data downloaded, discharge not measured, no problems noted.								
2014/03/31	11:55	11:48	0.195	0.171	12:15	12:15	0.195	0.171	GV
Comments:	Discharge measured, data downloaded, sensor clock corrected.								
2014/05/09	13:54	13:48	0.236	0.2175	14:08	14:08	0.236	0.2175	GV
Comments:	Discharge measured, data downloaded.								
2014/06/25	07:15	07:15	0.205	0.191	07:30	07:30	0.205	0.191	GV
Comments:	Discharge measured, data downloaded.								
2014/07/30	07:53	07:49	0.214	0.191	07:58	07:55	0.214	0.191	GV
Comments:	Discharge not measured, data downloaded.								
2014/08/30	09:30	09:26	0.220	0.1996	09:36	09:32	0.220	0.1996	GV
Comments:	Data downloaded, discharge not measured today.								
2014/09/30	14:13	14:09	0.250	0.226	14:20	14:16	0.250	0.226	GV
Comments:	Data downloaded, discharge not measured today.								
2014/11/02	13:31	13:23	0.430	0.430	13:42	-	0.430	-	GV
Comments:									
2014/11/02	13:31	13:23	0.430	0.430	13:42	-	0.430	-	GV
Comments:	Final annual site visit, discharge not measured.								

(Adapted from) RISC HYD-05 Stage Discharge Rating Curve and Table

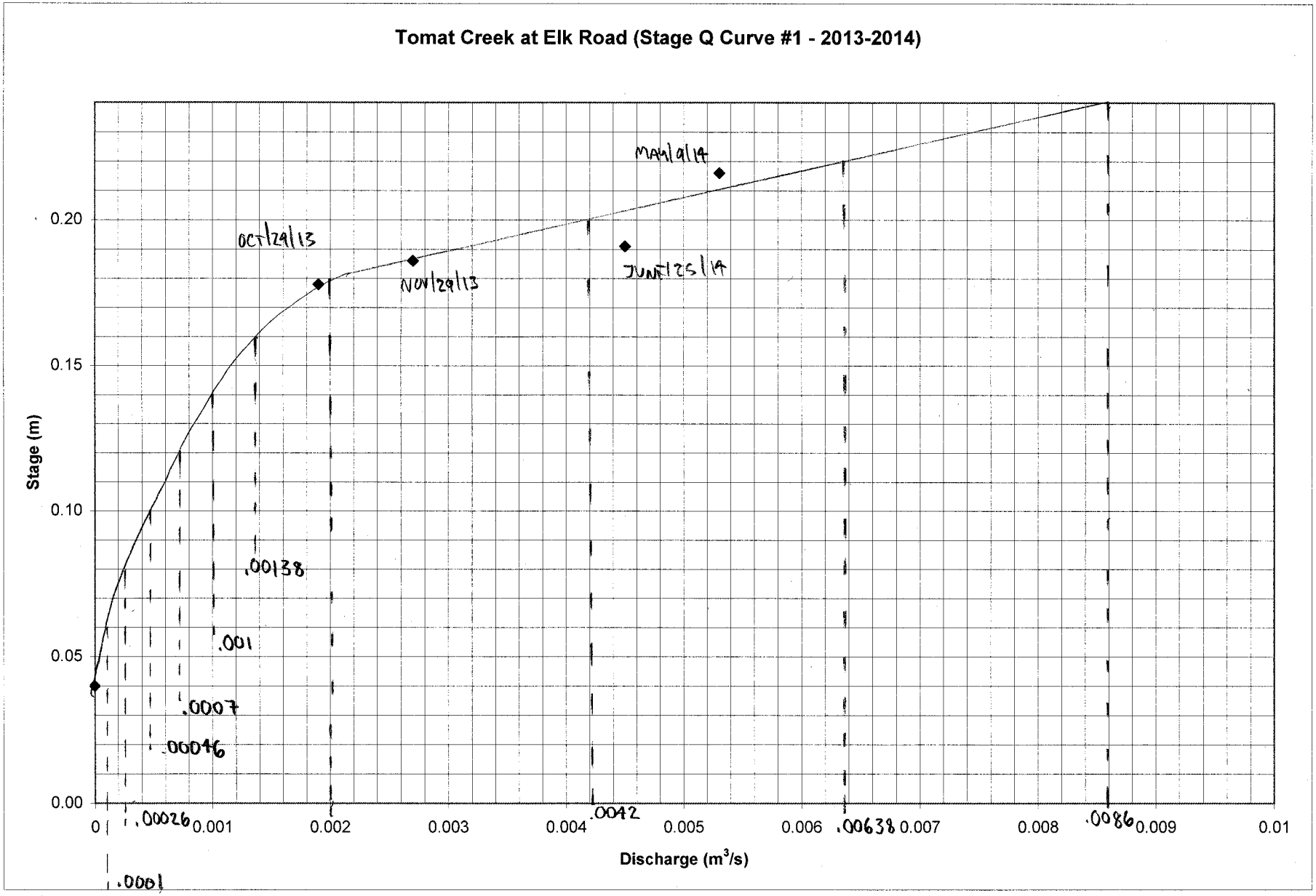
Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek at Elk Road** EMS ID: **n/a**
Station #: **n/a**

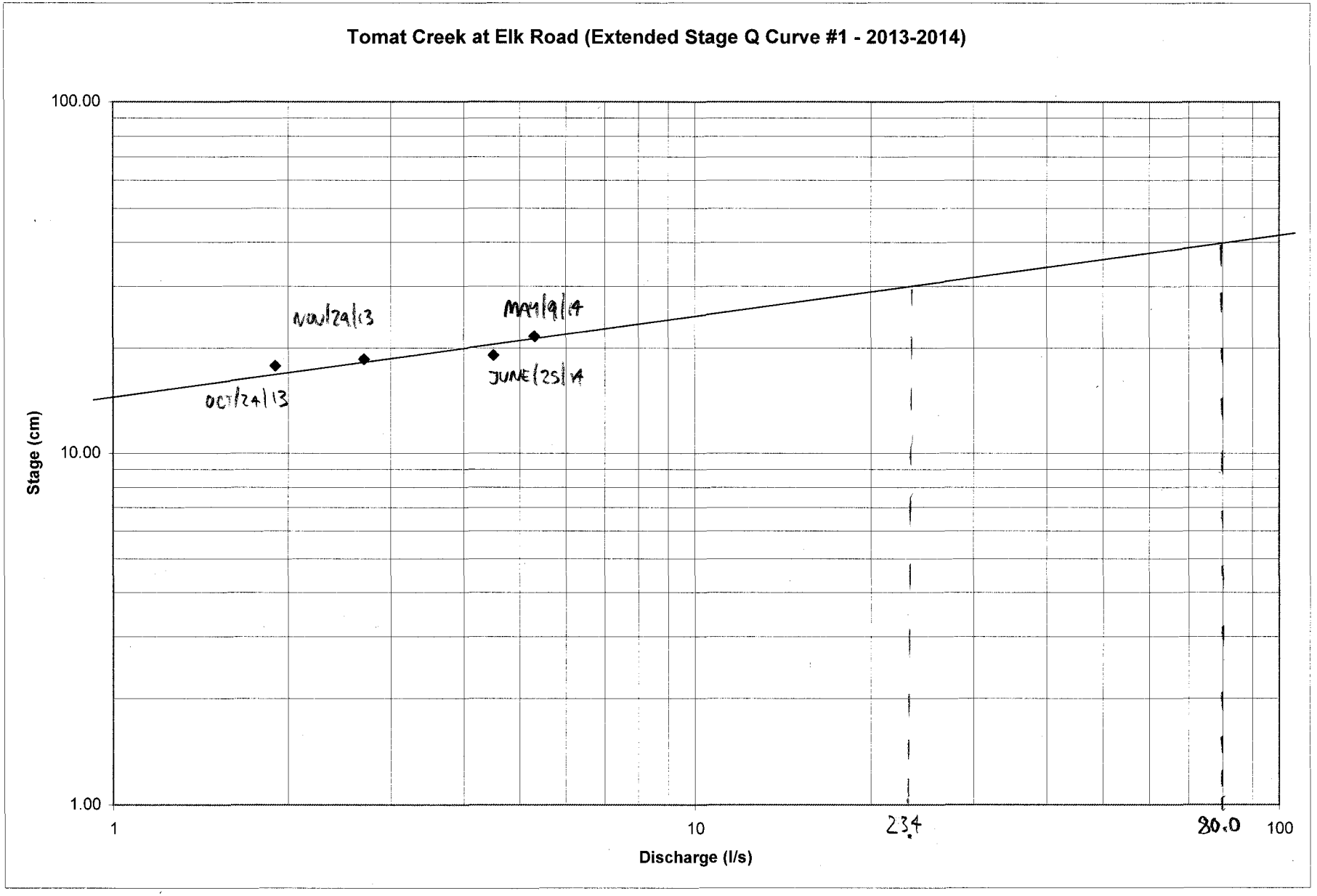
Stage Discharge Curve No.: 1 Created on: February, 2015
Number of Points: 5 Curve Period: October 2013-Dec 2014
Highest Measured Q: 0.0053 m^3/s Corresponding Gauge Height: 0.216 m
Lowest Measured Q: 0.0019 m^3/s Corresponding Gauge Height: 0.178 m
Zero Q at: 0.040 m Approx. Bank Elevation: n/a

Stage Discharge Rating Curve and Table: (Please refer to following pages)

Data Summary

Computed By: Gary Van Emmerik, AScT Date: February 28, 2015
Checked By: Gary Van Emmerik, AScT Date: March 1, 2015


Tomat Creek at Elk Road (Stage Q Curve #1 - 2013-2014)
Stage (m)
0.00
0.05
0.10
0.15
0.20
Discharge (m³/s)
0
0.001
0.002
0.003
0.004
0.005
0.006
0.007
0.008
0.009
0.01
OCT 29 13
NOV 29 13
MAY 9 14
JUN 25 14
.0001
.00026
.00046
.0007
.001
.00138
.0042
.00638
.0086


Tomat Creek at Elk Road (Extended Stage Q Curve #1 - 2013-2014)
100.00
10.00
1.00
Stage (cm)
1
10
100
Discharge (l/s)
Oct/24/13
Nov/29/13
May/9/14
JUNE/25/14
23.4
80.0

Expanded Stage Discharge Table For Tomat Creek at Elk Road 2013-2014 Data - Curve #1

Meters	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	Meters
0.04	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.04**
0.05	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	**0.05**
0.06	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	**0.06**
0.07	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	**0.07**
0.08	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	**0.08**
0.09	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	**0.09**
0.10	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0006	**0.10**
0.11	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	0.0007	0.0007	**0.11**
0.12	0.0007	0.0007	0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	**0.12**
0.13	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0010	0.0010	0.0010	**0.13**
0.14	0.0010	0.0010	0.0010	0.0011	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	**0.14**
0.15	0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0013	0.0013	0.0013	0.0014	**0.15**
0.16	0.0014	0.0014	0.0014	0.0015	0.0015	0.0015	0.0016	0.0016	0.0016	0.0017	**0.16**
0.17	0.0017	0.0017	0.0018	0.0018	0.0018	0.0018	0.0019	0.0019	0.0019	0.0020	**0.17**
0.18	0.0020	0.0021	0.0022	0.0023	0.0024	0.0026	0.0027	0.0028	0.0029	0.0030	**0.18**
0.19	0.0031	0.0032	0.0033	0.0034	0.0035	0.0037	0.0038	0.0039	0.0040	0.0041	**0.19**
0.20	0.0042	0.0043	0.0044	0.0045	0.0046	0.0047	0.0049	0.0050	0.0051	0.0052	**0.20**
0.21	0.0053	0.0054	0.0055	0.0056	0.0057	0.0058	0.0059	0.0061	0.0062	0.0063	**0.21**
0.22	0.0064	0.0065	0.0066	0.0067	0.0068	0.0069	0.0070	0.0072	0.0073	0.0074	**0.22**
0.23	0.0075	0.0076	0.0077	0.0078	0.0079	0.0080	0.0082	0.0083	0.0084	0.0085	**0.23**
0.24	0.0086	0.0088	0.0091	0.0093	0.0096	0.0098	0.0101	0.0103	0.0106	0.0108	**0.24**
0.25	0.0111	0.0113	0.0116	0.0118	0.0121	0.0123	0.0125	0.0128	0.0130	0.0133	**0.25**
0.26	0.0135	0.0138	0.0140	0.0143	0.0145	0.0148	0.0150	0.0153	0.0155	0.0158	**0.26**
0.27	0.0160	0.0162	0.0165	0.0167	0.0170	0.0172	0.0175	0.0177	0.0180	0.0182	**0.27**
0.28	0.0185	0.0187	0.0190	0.0192	0.0195	0.0197	0.0199	0.0202	0.0204	0.0207	**0.28**
0.29	0.0209	0.0212	0.0214	0.0217	0.0219	0.0222	0.0224	0.0227	0.0229	0.0232	**0.29**
0.30	0.0234	0.0240	0.0245	0.0251	0.0257	0.0262	0.0268	0.0274	0.0279	0.0285	**0.30**
0.31	0.0291	0.0296	0.0302	0.0308	0.0313	0.0319	0.0325	0.0330	0.0336	0.0342	**0.31**
0.32	0.0347	0.0353	0.0359	0.0364	0.0370	0.0375	0.0381	0.0387	0.0392	0.0398	**0.32**
0.33	0.0404	0.0409	0.0415	0.0421	0.0426	0.0432	0.0438	0.0443	0.0449	0.0455	**0.33**
0.34	0.0460	0.0466	0.0472	0.0477	0.0483	0.0489	0.0494	0.0500	0.0506	0.0511	**0.34**
0.35	0.0517	0.0523	0.0528	0.0534	0.0540	0.0545	0.0551	0.0557	0.0562	0.0568	**0.35**
0.36	0.0574	0.0579	0.0585	0.0591	0.0596	0.0602	0.0608	0.0613	0.0619	0.0625	**0.36**
0.37	0.0630	0.0636	0.0642	0.0647	0.0653	0.0658	0.0664	0.0670	0.0675	0.0681	**0.37**
0.38	0.0687	0.0692	0.0698	0.0704	0.0709	0.0715	0.0721	0.0726	0.0732	0.0738	**0.38**
0.39	0.0743	0.0749	0.0755	0.0760	0.0766	0.0772	0.0777	0.0783	0.0789	0.0794	**0.39**
0.40	0.0800	0.0806	0.0811	0.0817	0.0823	0.0828	0.0834	0.0840	0.0845	0.0851	**0.40**
0.41	0.0857	0.0862	0.0868	0.0874	0.0879	0.0885	0.0891	0.0896	0.0902	0.0908	**0.41**
0.42	0.0913	0.0919	0.0925	0.0930	0.0936	0.0941	0.0947	0.0953	0.0958	0.0964	**0.42**
0.43	0.0970	0.0975	0.0981	0.0987	0.0992	0.0998	0.1004	0.1009	0.1015	0.1021	**0.43**
0.44	0.1026	0.1032	0.1038	0.1043	0.1049	0.1055	0.1060	0.1066	0.1072	0.1077	**0.44**
0.45	0.1083	0.1089	0.1094	0.1100	0.1106	0.1111	0.1117	0.1123	0.1128	0.1134	**0.45**
0.46	0.1140	0.1145	0.1151	0.1157	0.1162	0.1168	0.1174	0.1179	0.1185	0.1191	**0.46**
0.47	0.1196	0.1202	0.1208	0.1213	0.1219	0.1224	0.1230	0.1236	0.1241	0.1247	**0.47**
0.48	0.1253	0.1258	0.1264	0.1270	0.1275	0.1281	0.1287	0.1292	0.1298	0.1304	**0.48**
0.49	0.1309	0.1315	0.1321	0.1326	0.1332	0.1338	0.1343	0.1349	0.1355	0.1360	**0.49**
0.50	0.1366	0.1372	0.1377	0.1383	0.1389	0.1394	0.1400	0.1406	0.1411	0.1417	**0.50**

Tomat Creek at Elk Road

2014 Mean Daily Discharge (m^3/s) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.008	0.005	0.003	**1**
2	0.003	0.002	0.002	0.002	0.003	0.003	0.004	0.003	0.011	0.007	0.005	0.002	**2**
3	0.005	0.002	0.002	0.002	0.003	0.011	0.003	0.003	0.004	0.007	0.005	0.002	**3**
4	0.002	0.002	0.004	0.002	0.012	0.004	0.003	0.003	0.004	0.008	0.006	0.002	**4**
5	0.002	0.002	0.007	0.002	0.004	0.003	0.003	0.004	0.004	0.007	0.005	0.002	**5**
6	0.002	0.002	0.005	0.002	0.003	0.003	0.006	0.004	0.004	0.007	0.005	0.010	**6**
7	0.002	0.002	0.003	0.002	0.003	0.003	0.003	0.004	0.004	0.007	0.005	0.003	**7**
8	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.004	0.004	0.007	0.005	0.002	**8**
9	0.002	0.002	0.003	0.002	0.004	0.003	0.003	0.004	0.005	0.007	0.005	0.003	**9**
10	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.005	0.007	0.005	0.003	**10**
11	0.005	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.005	0.007	0.005	0.004	**11**
12	0.002	0.009	0.002	0.002	0.003	0.003	0.003	0.004	0.005	0.007	0.005	0.003	**12**
13	0.002	0.003	0.002	0.002	0.003	0.062	0.003	0.006	0.005	0.007	0.005	0.002	**13**
14	0.002	0.002	0.002	0.002	0.003	0.007	0.003	0.009	0.006	0.010	0.005	0.002	**14**
15	0.002	0.002	0.002	0.003	0.004	0.005	0.003	0.004	0.006	0.008	0.005	0.002	**15**
16	0.002	0.006	0.002	0.002	0.004	0.013	0.003	0.004	0.006	0.007	0.005	0.002	**16**
17	0.002	0.002	0.002	0.010	0.004	0.005	0.003	0.004	0.006	0.007	0.005	0.002	**17**
18	0.002	0.002	0.002	0.007	0.004	0.005	0.003	0.004	0.007	0.008	0.005	0.003	**18**
19	0.002	0.002	0.002	0.002	0.004	0.005	0.004	0.004	0.006	0.008	0.004	0.007	**19**
20	0.002	0.002	0.002	0.002	0.004	0.005	0.004	0.004	0.007	0.011	0.004	0.012	**20**
21	0.002	0.002	0.002	0.002	0.004	0.005	0.006	0.004	0.007	0.008	0.010	0.006	**21**
22	0.002	0.002	0.002	0.003	0.004	0.005	0.004	0.006	0.009	0.013	0.004	0.002	**22**
23	0.002	0.003	0.002	0.002	0.004	0.006	0.024	0.004	0.018	0.007	0.002	0.003	**23**
24	0.002	0.002	0.002	0.012	0.004	0.005	0.024	0.004	0.019	0.007	0.002	0.002	**24**
25	0.002	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.014	0.008	0.010	0.002	**25**
26	0.002	0.002	0.002	0.002	0.005	0.003	0.004	0.004	0.011	0.007	0.015	0.002	**26**
27	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.004	0.006	0.007	0.017	0.003	**27**
28	0.002	0.003	0.002	0.002	0.003	0.003	0.004	0.006	0.007	0.007	0.009	0.004	**28**
29	0.004	-	0.002	0.002	0.003	0.003	0.004	0.004	0.006	0.007	0.003	0.002	**29**
30	0.003	-	0.002	0.003	0.003	0.003	0.003	0.004	0.007	0.006	0.003	0.002	**30**
31	0.002	-	0.002	-	0.003	-	0.003	0.004	-	0.025	-	0.002	**31**
Max	**0.005**	**0.009**	**0.007**	**0.012**	**0.012**	**0.062**	**0.024**	**0.009**	**0.019**	**0.025**	**0.017**	**0.012**	
Min	**0.002**	**0.002**	**0.002**	**0.002**	**0.003**	**0.003**	**0.002**	**0.003**	**0.004**	**0.006**	**0.002**	**0.002**	
Mean	**0.002**	**0.002**	**0.002**	**0.003**	**0.004**	**0.006**	**0.005**	**0.004**	**0.007**	**0.008**	**0.006**	**0.003**	

Tomat Creek at Elk Road
2014 Daily Yield (AF) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.6	0.4	0.2	**1**
2	0.2	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.8	0.5	0.4	0.2	**2**
3	0.3	0.1	0.2	0.1	0.2	0.8	0.2	0.2	0.3	0.5	0.4	0.2	**3**
4	0.1	0.1	0.3	0.1	0.9	0.3	0.2	0.2	0.3	0.6	0.4	0.2	**4**
5	0.1	0.1	0.5	0.1	0.3	0.2	0.2	0.3	0.3	0.5	0.4	0.2	**5**
6	0.1	0.1	0.3	0.1	0.2	0.2	0.4	0.3	0.3	0.5	0.4	0.7	**6**
7	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.4	0.2	**7**
8	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.4	0.1	**8**
9	0.1	0.1	0.2	0.1	0.3	0.2	0.2	0.3	0.3	0.5	0.4	0.2	**9**
10	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.4	0.2	**10**
11	0.4	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.4	0.3	**11**
12	0.1	0.6	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.2	**12**
13	0.2	0.2	0.1	0.1	0.2	4.4	0.2	0.4	0.4	0.5	0.4	0.1	**13**
14	0.1	0.1	0.1	0.1	0.2	0.5	0.2	0.6	0.4	0.7	0.4	0.1	**14**
15	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.6	0.4	0.1	**15**
16	0.1	0.4	0.1	0.1	0.3	0.9	0.2	0.2	0.4	0.5	0.3	0.1	**16**
17	0.1	0.1	0.1	0.7	0.3	0.4	0.2	0.3	0.4	0.5	0.3	0.1	**17**
18	0.1	0.2	0.1	0.5	0.3	0.3	0.2	0.3	0.5	0.6	0.3	0.2	**18**
19	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.5	**19**
20	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.3	0.5	0.8	0.2	0.8	**20**
21	0.1	0.1	0.1	0.1	0.3	0.4	0.4	0.3	0.5	0.6	0.7	0.4	**21**
22	0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.4	0.6	0.9	0.3	0.2	**22**
23	0.1	0.2	0.1	0.1	0.2	0.4	1.6	0.3	1.2	0.5	0.2	0.2	**23**
24	0.2	0.1	0.1	0.9	0.2	0.4	1.7	0.3	1.4	0.5	0.2	0.2	**24**
25	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3	1.0	0.6	0.7	0.1	**25**
26	0.1	0.1	0.1	0.2	0.4	0.2	0.3	0.3	0.8	0.5	1.1	0.1	**26**
27	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.5	1.2	0.2	**27**
28	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.3	**28**
29	0.3	-	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.2	0.2	**29**
30	0.2	-	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.2	0.1	**30**
31	0.2	-	0.1	-	0.2	-	0.2	0.3	-	1.7	-	0.1	**31**
Max	**0.4**	**0.6**	**0.5**	**0.9**	**0.9**	**4.4**	**1.7**	**0.6**	**1.4**	**1.7**	**1.2**	**0.8**	
Min	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.5**	**0.2**	**0.1**	
Mean	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.5**	**0.3**	**0.3**	**0.5**	**0.6**	**0.4**	**0.2**	
Total	**4.9**	**4.7**	**5.1**	**5.9**	**8.0**	**13.6**	**10.3**	**9.3**	**14.9**	**17.6**	**12.5**	**7.1**	**113.9**

Tomat Creek at Elk Road
2014 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.177	0.172	0.175	0.171	0.187	0.188	0.187	0.192	0.200	0.231	0.211	0.185	**1**
2	0.185	0.173	0.181	0.172	0.188	0.190	0.195	0.192	0.230	0.222	0.209	0.184	**2**
3	0.199	0.171	0.182	0.170	0.192	0.223	0.187	0.193	0.202	0.223	0.208	0.184	**3**
4	0.178	0.171	0.202	0.170	0.236	0.198	0.187	0.193	0.198	0.230	0.217	0.183	**4**
5	0.177	0.170	0.220	0.169	0.195	0.186	0.189	0.195	0.198	0.223	0.211	0.183	**5**
6	0.176	0.170	0.203	0.170	0.189	0.186	0.205	0.195	0.198	0.223	0.210	0.227	**6**
7	0.176	0.170	0.187	0.170	0.189	0.186	0.185	0.196	0.200	0.222	0.210	0.189	**7**
8	0.178	0.170	0.183	0.172	0.191	0.187	0.184	0.197	0.202	0.222	0.209	0.180	**8**
9	0.176	0.170	0.185	0.171	0.197	0.185	0.187	0.198	0.205	0.224	0.209	0.190	**9**
10	0.177	0.172	0.180	0.174	0.189	0.193	0.185	0.199	0.205	0.223	0.210	0.187	**10**
11	0.204	0.180	0.178	0.171	0.189	0.187	0.186	0.200	0.207	0.224	0.210	0.197	**11**
12	0.180	0.227	0.178	0.170	0.190	0.187	0.187	0.202	0.211	0.227	0.211	0.187	**12**
13	0.181	0.184	0.178	0.171	0.192	0.362	0.188	0.218	0.212	0.229	0.212	0.179	**13**
14	0.179	0.178	0.179	0.173	0.193	0.221	0.188	0.221	0.214	0.235	0.211	0.178	**14**
15	0.178	0.177	0.182	0.183	0.194	0.206	0.190	0.195	0.213	0.230	0.210	0.177	**15**
16	0.178	0.202	0.177	0.173	0.195	0.240	0.191	0.194	0.215	0.224	0.207	0.177	**16**
17	0.177	0.176	0.177	0.221	0.195	0.211	0.193	0.194	0.215	0.226	0.206	0.176	**17**
18	0.177	0.182	0.177	0.206	0.195	0.207	0.193	0.195	0.224	0.232	0.205	0.187	**18**
19	0.177	0.176	0.177	0.178	0.195	0.207	0.196	0.196	0.219	0.231	0.200	0.218	**19**
20	0.176	0.174	0.176	0.177	0.195	0.208	0.199	0.199	0.222	0.249	0.194	0.236	**20**
21	0.176	0.173	0.176	0.177	0.194	0.208	0.208	0.198	0.224	0.235	0.224	0.209	**21**
22	0.176	0.174	0.177	0.190	0.195	0.209	0.195	0.211	0.235	0.252	0.198	0.183	**22**
23	0.175	0.182	0.175	0.178	0.194	0.212	0.257	0.199	0.255	0.226	0.184	0.185	**23**
24	0.178	0.177	0.174	0.238	0.194	0.209	0.276	0.201	0.264	0.223	0.183	0.182	**24**
25	0.173	0.181	0.177	0.185	0.194	0.197	0.202	0.201	0.244	0.231	0.220	0.181	**25**
26	0.172	0.178	0.174	0.184	0.205	0.193	0.198	0.202	0.239	0.224	0.259	0.180	**26**
27	0.171	0.180	0.173	0.183	0.190	0.198	0.196	0.203	0.220	0.223	0.270	0.190	**27**
28	0.171	0.184	0.174	0.183	0.190	0.189	0.196	0.212	0.221	0.228	0.224	0.197	**28**
29	0.191	-	0.177	0.184	0.192	0.190	0.196	0.200	0.221	0.222	0.188	0.183	**29**
30	0.187	-	0.173	0.185	0.190	0.190	0.194	0.200	0.222	0.221	0.186	0.180	**30**
31	0.179	-	0.172	-	0.188	-	0.192	0.201	-	0.280	-	0.180	**31**
Max	**0.204**	**0.227**	**0.220**	**0.238**	**0.236**	**0.362**	**0.276**	**0.221**	**0.264**	**0.280**	**0.270**	**0.236**	
Min	**0.171**	**0.170**	**0.172**	**0.169**	**0.187**	**0.185**	**0.184**	**0.192**	**0.198**	**0.221**	**0.183**	**0.176**	
Mean	**0.179**	**0.178**	**0.181**	**0.181**	**0.194**	**0.205**	**0.197**	**0.200**	**0.218**	**0.230**	**0.210**	**0.189**	

Tomat Creek at Elk Road

2013 Mean Daily Discharge (m^3/s) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.002	0.011	**1**
2	-	-	-	-	-	-	-	-	-	-	0.033	0.002	**2**
3	-	-	-	-	-	-	-	-	-	-	0.003	0.002	**3**
4	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**4**
5	-	-	-	-	-	-	-	-	-	-	0.004	0.002	**5**
6	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**6**
7	-	-	-	-	-	-	-	-	-	-	0.007	0.002	**7**
8	-	-	-	-	-	-	-	-	-	-	0.007	0.002	**8**
9	-	-	-	-	-	-	-	-	-	-	0.003	0.002	**9**
10	-	-	-	-	-	-	-	-	-	-	0.003	0.002	**10**
11	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**11**
12	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**12**
13	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**13**
14	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**14**
15	-	-	-	-	-	-	-	-	-	-	0.005	0.002	**15**
16	-	-	-	-	-	-	-	-	-	-	0.005	0.002	**16**
17	-	-	-	-	-	-	-	-	-	-	0.003	0.002	**17**
18	-	-	-	-	-	-	-	-	-	-	0.006	0.003	**18**
19	-	-	-	-	-	-	-	-	-	-	0.011	0.002	**19**
20	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**20**
21	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**21**
22	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**22**
23	-	-	-	-	-	-	-	-	-	-	0.002	0.004	**23**
24	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**24**
25	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**25**
26	-	-	-	-	-	-	-	-	-	-	0.002	0.003	**26**
27	-	-	-	-	-	-	-	-	-	-	0.002	0.004	**27**
28	-	-	-	-	-	-	-	-	-	-	0.002	0.002	**28**
29	-	-	-	-	-	-	-	-	-	0.002	0.002	0.002	**29**
30	-	-	-	-	-	-	-	-	-	0.002	0.004	0.002	**30**
31	-	-	-	-	-	-	-	-	-	0.002	-	0.002	**31**
Max										**0.002**	**0.033**	**0.011**	
Min										**0.002**	**0.002**	**0.002**	
Mean										**0.002**	**0.004**	**0.002**	

Station established October 29, 2013 Data not available prior to this date.

Tomat Creek at Elk Road
2013 Daily Yield (AF) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day	
1	-	-	-	-	-	-	-	-	-	-		0.1	0.8	**1**
2	-	-	-	-	-	-	-	-	-	-		2.3	0.2	**2**
3	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**3**
4	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**4**
5	-	-	-	-	-	-	-	-	-	-		0.3	0.1	**5**
6	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**6**
7	-	-	-	-	-	-	-	-	-	-		0.5	0.1	**7**
8	-	-	-	-	-	-	-	-	-	-		0.5	0.1	**8**
9	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**9**
10	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**10**
11	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**11**
12	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**12**
13	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**13**
14	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**14**
15	-	-	-	-	-	-	-	-	-	-		0.4	0.1	**15**
16	-	-	-	-	-	-	-	-	-	-		0.3	0.1	**16**
17	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**17**
18	-	-	-	-	-	-	-	-	-	-		0.4	0.2	**18**
19	-	-	-	-	-	-	-	-	-	-		0.8	0.1	**19**
20	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**20**
21	-	-	-	-	-	-	-	-	-	-		0.2	0.1	**21**
22	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**22**
23	-	-	-	-	-	-	-	-	-	-		0.1	0.3	**23**
24	-	-	-	-	-	-	-	-	-	-		0.1	0.2	**24**
25	-	-	-	-	-	-	-	-	-	-		0.1	0.1	**25**
26	-	-	-	-	-	-	-	-	-	-		0.1	0.2	**26**
27	-	-	-	-	-	-	-	-	-	-		0.1	0.3	**27**
28	-	-	-	-	-	-	-	-	-	-		0.1	0.2	**28**
29	-	-	-	-	-	-	-	-	-		0.1	0.1	0.1	**29**
30	-	-	-	-	-	-	-	-	-		0.1	0.3	0.1	**30**
31	-	-	-	-	-	-	-	-	-		0.1	-	0.1	**31**
Max											**0.1**	**2.3**	**0.8**	
Min											**0.1**	**0.1**	**0.1**	
Mean											**0.1**	**0.3**	**0.2**	
Total											**0.4**	**8.9**	**5.2**	**14.5**

Station established October 29, 2013 Data not available prior to this date.

Tomat Creek at Elk Road
2013 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.176	0.234	**1**
2	-	-	-	-	-	-	-	-	-	-	0.296	0.182	**2**
3	-	-	-	-	-	-	-	-	-	-	0.185	0.180	**3**
4	-	-	-	-	-	-	-	-	-	-	0.180	0.178	**4**
5	-	-	-	-	-	-	-	-	-	-	0.197	0.176	**5**
6	-	-	-	-	-	-	-	-	-	-	0.178	0.175	**6**
7	-	-	-	-	-	-	-	-	-	-	0.217	0.174	**7**
8	-	-	-	-	-	-	-	-	-	-	0.210	0.172	**8**
9	-	-	-	-	-	-	-	-	-	-	0.185	0.172	**9**
10	-	-	-	-	-	-	-	-	-	-	0.190	0.172	**10**
11	-	-	-	-	-	-	-	-	-	-	0.179	0.172	**11**
12	-	-	-	-	-	-	-	-	-	-	0.178	0.174	**12**
13	-	-	-	-	-	-	-	-	-	-	0.178	0.171	**13**
14	-	-	-	-	-	-	-	-	-	-	0.178	0.171	**14**
15	-	-	-	-	-	-	-	-	-	-	0.202	0.175	**15**
16	-	-	-	-	-	-	-	-	-	-	0.199	0.172	**16**
17	-	-	-	-	-	-	-	-	-	-	0.185	0.172	**17**
18	-	-	-	-	-	-	-	-	-	-	0.206	0.182	**18**
19	-	-	-	-	-	-	-	-	-	-	0.227	0.175	**19**
20	-	-	-	-	-	-	-	-	-	-	0.183	0.176	**20**
21	-	-	-	-	-	-	-	-	-	-	0.182	0.178	**21**
22	-	-	-	-	-	-	-	-	-	-	0.181	0.178	**22**
23	-	-	-	-	-	-	-	-	-	-	0.181	0.197	**23**
24	-	-	-	-	-	-	-	-	-	-	0.181	0.182	**24**
25	-	-	-	-	-	-	-	-	-	-	0.180	0.177	**25**
26	-	-	-	-	-	-	-	-	-	-	0.180	0.188	**26**
27	-	-	-	-	-	-	-	-	-	-	0.180	0.194	**27**
28	-	-	-	-	-	-	-	-	-	-	0.180	0.184	**28**
29	-	-	-	-	-	-	-	-	-	0.177	0.180	0.179	**29**
30	-	-	-	-	-	-	-	-	-	0.176	0.199	0.179	**30**
31	-	-	-	-	-	-	-	-	-	0.176	-	0.179	**31**
Max										**0.177**	**0.296**	**0.234**	
Min										**0.176**	**0.176**	**0.171**	
Mean										**0.176**	**0.192**	**0.180**	

Station established October 29, 2013 Data not available prior to this date.

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 1 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek at Elk Road** EMS ID: **n/a**
Station #: **n/a**

Number of level checks made per year: 2 or more, 1 or more, **None/undefined**
Gauge Correction Required Y/**N**
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor

Discharge Record

Discharge (m^3/s)		Corresponding Gauge Height (m)	Date/Time
Max. Inst. Discharge	0.126	0.482	2014/06/13 at 20:00 PST
Max Inst. Measured Discharge	0.0053	0.216	2014/05/09 at 14:00 PST
Min Inst. Measured Discharge	0.0019	0.178	2013/10/29 at 13:30 PST

Number of Manual Flow Measurements per Year:
5 or more, 3 or more, 2 or more, <2 undefined

Missing Period From: **None** (yyyy/mm/dd) ----/--/-- through ----/--/-- and Reason:

Stage Discharge Relationship

	Curve #	Start Date	End Date	Cause for Shift
2013-2014	1	2013/10/29	2014/12/31	Initial stage discharge curve.

Remarks: The cross section is difficult for measuring very low flow volumes and this is reflected in the accuracy/data grades on the following pages. The water level values alone may be more valuable for determining storm responses in the Tomat Creek drainage through the golf course.

The March 31, 2014 and June 25, 2014 discharges were very low, and do not match the corresponding stage discharge table. Very slight changes in the channel bed material/vegetation can have significant effects on the stage discharge relationship. This is likely the cause of the errors on these dates. The stage discharge curves/table used to generate the daily discharge values may be inaccurate at very low flow values (less than 1L/second).

Please Refer to Next Page for Data Grades and Declaration

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 2 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Tomat Creek at Elk Road, page 2 of 2 – Data Grades

Item	Data Grade	Item	Data Grade
Instrumentation			
Meter Calibration	A	Meter Field Verification	A
Water Level Gauge	A	Water Level Gauge Accuracy	A
Stream Channel Condition			
Stream Channel Stability	B		
Field Procedure			
# Benchmarks (1)	E	#Verticals in flow measurements w meter	E[1]
#Level Checks per year	E	# Manual Flow measurements per year	A
Data Calculation and Assessment			
Discharge Rating Accuracy	A-E[2]	Data and Calculations Reviewed for Anomalies	A
		Results are Compared with other Stations	A

[1]-when active channel/flow is less than 2m wide, less than 20 verticals are possible, and on occasion more than 10% of the total discharge was observed in a single field cross section reading. Discharges > the maximum measured or confirmed discharges are estimated. [2]For very low flows, absolute error small, but % error can exceed 7%. The cross section is shallow/rocky which affects the level measurement and error.

Standard Procedure followed for hydrometric Operation: RISC, March 2009
Instruments and Methods appropriate for the field Conditions? **Yes**
All Field forms HYD-01 through HYD-06 and field data/calculations reviewed for anomalies? **Yes**
Reviewed Time series Data with Metadata submitted to the Provincial Water Database? **No**
Results were compared with other stations and/or other years for check? **Yes**
Data can be made available to the public? **No/yes**, proprietary data collected paid for by Westbank First Nation, permission required prior to data sharing.

Dated: March 1, 2015

Declaration: I, Gary Van Emmerik, AScT, have reviewed all data and operating information for this hydrometric station. Data grades have been assigned as per standards requirement criteria as defined by the Manual of British Columbia Hydrometric Standards.

Date (yyyy/mm/dd)	Professional Seal/Signature	Designation	Professional/Technological Association
2015/03/01		AScT	ASTTBC

(Adapted from) RISC HYD-01 Description of Hydrometric Station

Original **Y**/N Revised Y/**N**
Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek above Boucherie Pond** EMS ID: n/a
Station #: n/a

Action (Station Established, Relocated, Closed)	Date: (yyyy/mm/dd)	By Whom
Established	*2013/10/29*	*G. Van Emmerik*

Site Description: *stilling well located at the right bank Tomat Creek at Two Eagles Golf Course immediately upstream from the fenced in Boucherie Pond.*

Location Type and Region: *Stream station, Okanagan/Kamloops*
Nearest Community: *West Kelowna*
Site Access Description: *HWY 97S to Boucherie Road, proceed towards the bottom of the Two Eagles Golf Course off of Boucherie Road. Station is upstream from the fenced in Boucherie Pond.*

Drainage Area upstream from Station: ***not reported***
Co-ordinates: ***49°49'45" N, 119°36'02" W (~356 m ASL)***

Water Level Gauge:

Manual	Recorder
Types: ***Standard vertical staff gauge*** Chain Gauge Wire Weight Gauge Reference Marks	Types: Graphical Y/N Digital **Y**/N If digital, sensor types ***Pressure Transducer***, bubbler, shaft encoder, radar/ultrasonic, other
Reading Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined	Reading/Sensor Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined

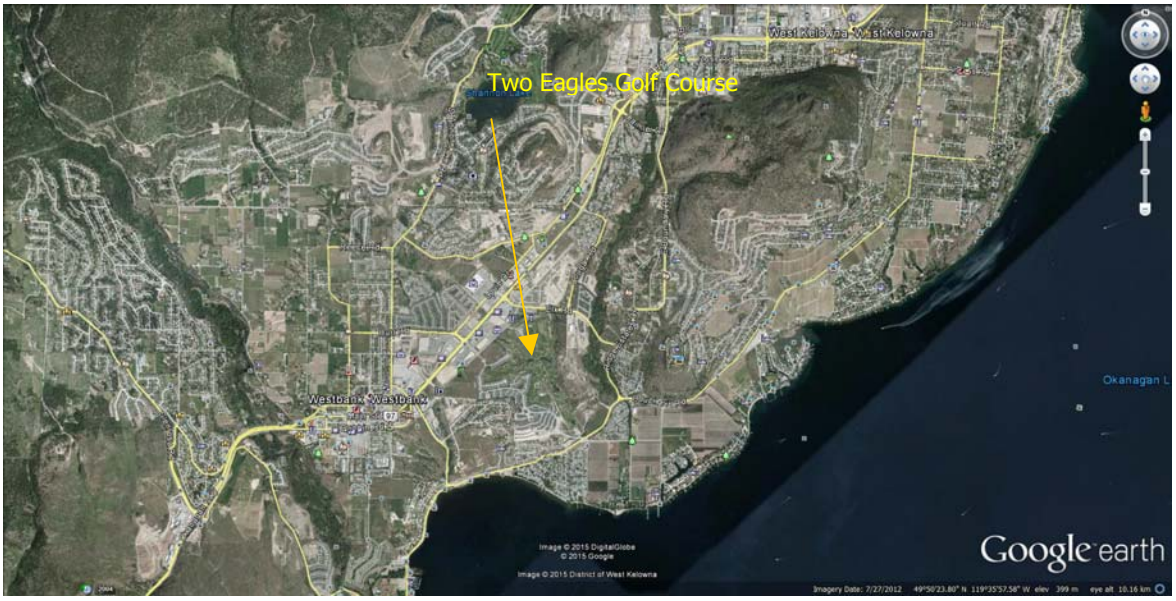
Reference Gauge Type: ***standard vertical staff gauge***, chain gauge, wire weight gauge, reference marks.
Zero Flow at Gauge Height: ***0.040 m***

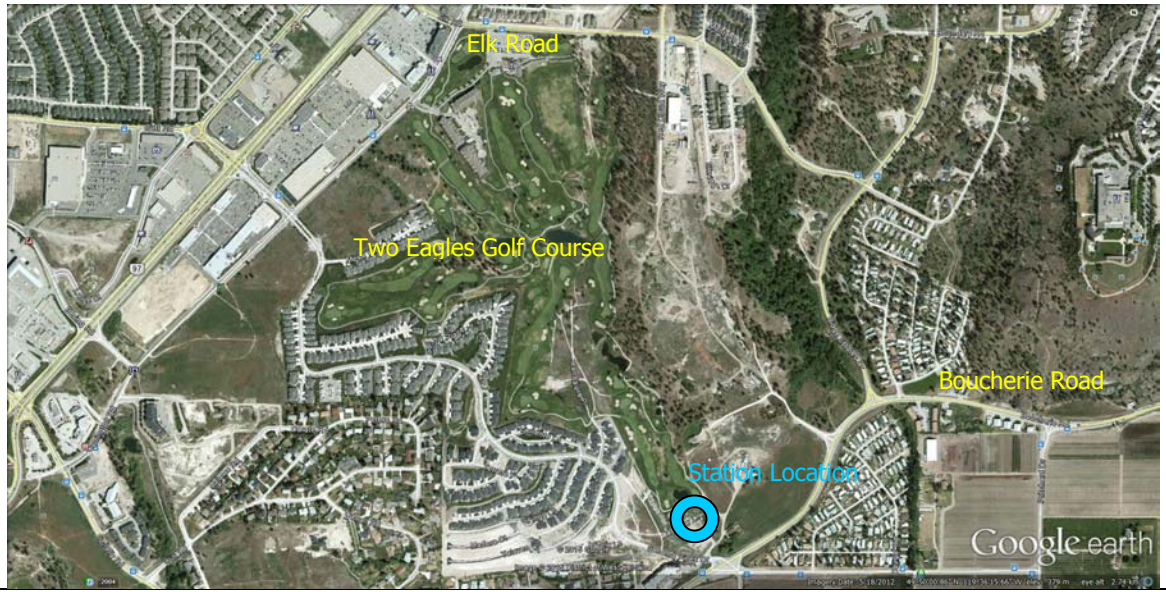
Benchmarks:

Benchmark	Date Established (yy/mm/dd)	Elevation when first established	GSC Datum Elevation, if any
BM #1	-	- m	None

Channel Description: ***small channel morphology, riffle pool with cobble bed***
Stream Flow: (Regulated Y/N, Natural **Y**/N)
Station Type: Water Level Only Y/N, Discharge only Y/N, Both **Y**/N

Location and Site Details: **Tomat Creek above Boucherie Pond**





Remarks: Access to station via Boucherie Road at bottom of Two Eagles Golf Course.

RISCHYD02 Not completed to date – Survey data to be collected during 2015 open water period.

(Adapted from) RISC HYD-03 Summary of Discharge Measurements

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek above Boucherie Pond** EMS ID: **n/a**
Station #: **n/a**

Channel Condition: 3 (see below)

Meter Type: Electromagnetic, Marsh McBirney Flow Mate 2000

Field Data Summary (refer to following pages)				**From Stage Discharge Table #1 – 2013-2014**		
Width (m)	**Total Area (m^2)**	**Mean Velocity (m/s)**	**Total Discharge (m^3/s)**	**Disch. (m^3/s)**	**Diff.**	**%**
*Oct 29, 2013 14:00 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.30	*0.014*	*0.295*	*0.0043*	*0.0017*	*0.0026*	*153%*
Nov 29, 2013 13:00 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.40	**0.020**	**0.166**	**0.0036**	**0.0042**	**-0.0006**	**-14.3%**
Mar 31, 2014 12:30 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.35	**0.017**	**0.127**	**0.0024**	**0.0029**	**-0.0005**	**-17.2%**
May 9, 2014 14:30 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.30	**0.014**	**0.076**	**0.0012**	**0.0013**	**-0.0001**	**-7.7%**
June 25, 2014 07:45 PST		Metered by: GV	Meter Calibration: 1		Meter Field Verified: 1	
0.35	**0.022**	**0.167**	**0.0041**	**0.0044**	**-0.0003**	**-6.8%**

Notes: A predominantly low flow condition, the gauge section is modified to attempt to achieve acceptable depths and velocities to be measured with the flow meter. The stream gauge section is located immediately downstream from the stilling well, and is difficult to accurately measure.

Low flow discharges (<~0.005 m^3/s) are difficult to measure in the field due to equipment limitations. The stage discharge table data for these flows is based on a "best fit" hand drawn curve, and the curve values prevail for low flow measurements as precise field measurements at low levels is very difficult to obtain.

An undetermined error occurred on the October 29, 2013 discharge calculation; this value was removed from the analysis data set. Refer to the stage discharge curves and table for additional information. The other stage discharge data fits the stage discharge curve.

(Adapted from) RISC HYD-03 Summary of Discharge Measurements

Channel Condition Code:
1-Fixed control, stable channel, straight reach, measurements consistent with rating curve, no weeds, boulders or debris
2-Stable channel, relatively straight reach, measurements consistent with rating curve, minimal weeds or boulders
3-Minor hydraulic problems related to channel instability; measurements are not consistent with rating curve, weed growth or occasional boulders
4-Unstable channel due to erosion, degradation or aggradations, variable backwater, turbulence, significant weed growth, boulder bed
5-Undefined

Meter Calibration Code:
1-Meter calibrated and the validity of calibration is confirmed
2-Meter previously calibrated but validity of calibrations not confirmed
3-Undefined

Meter Field Verified:
1-At least annually
2-Less often than annually
3-Undefined

Data Double Checked March 25, 2013

Oct 29, 2013 at approx. 14:00 to 14:15 PST Tomat Cr above Boucherie Pond
Used 0.6 depth for flow meter.

Staff = 0.118 Difficult to read to the mm, wave action
Sensor = 0.101 8.3 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
0.625-0.65	0.04	0.05	0.002	0.08	0.00016	3.73%
0.70	0.06	0.05	0.003	0.43	0.00129	30.11%
0.75	0.05	0.05	0.003	0.36	0.00090	21.00%
0.80	0.04	0.05	0.002	0.45	0.00090	21.00%
0.85	0.05	0.05	0.003	0.27	0.00068	15.75%
0.90-0.925	0.04	0.05	0.002	0.18	0.00036	8.40%
		Total Width	*Tot. Area*	*Average V*		
		0.30	0.014	0.295		
		0.30				
						100.00%
					0.0043	
Liters/second		4.29		0.30		
US Gal/second		1.13				
US Gal/minute		67.92				
ft3/second		0.15				
ft3/day		13074.09				
Acre Feet/day		0.30				

Data Double Checked March 25, 2013

Nov. 29, 2013 at approx. 13:00 to 13:15 PST Tomat Cr above Boucherie Pond
Used 0.6 depth for flow meter.

Staff = 0.131 Difficult to read to the mm, wave action
Sensor = 0.113 4.1 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
0.075-0.1	0.02	0.05	0.001	0.02	0.00002	0.56%
0.15	0.04	0.05	0.002	0.16	0.00032	8.91%
0.20	0.05	0.05	0.003	0.18	0.00045	12.53%
0.25	0.04	0.05	0.002	0.21	0.00042	11.70%
0.30	0.06	0.05	0.003	0.16	0.00048	13.37%
0.35	0.06	0.05	0.003	0.32	0.00096	26.74%
0.40	0.07	0.05	0.004	0.20	0.00070	19.50%
0.45-0.475	0.06	0.05	0.003	0.08	0.00024	6.69%
		Total Width	*Tot. Area*	*Average V*		
		0.40	0.020	0.166		
		0.40				
						100.00%
					0.0036	
Liters/second		3.59		0.17		
US Gal/second		0.95				
US Gal/minute		56.90				
ft3/second		0.13				
ft3/day		10953.56				
Acre Feet/day		0.25				

Data Double Checked February 25, 2015

March 31, 2014 at approx. 12:30 to 12:45 PST Tomat Cr above Boucherie Pond
Used 0.6 depth for flow meter.

Staff = 0.133 Difficult to read to the mm, wave action
Sensor = 0.107 10.4 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
.075-.1	0.02	0.05	0.001	0.03	0.00003	1.27%
0.15	0.04	0.05	0.002	0.10	0.00020	8.47%
0.20	0.04	0.05	0.002	0.15	0.00030	12.71%
0.25	0.06	0.05	0.003	0.19	0.00057	24.15%
0.30	0.06	0.05	0.003	0.18	0.00054	22.88%
0.35	0.06	0.05	0.003	0.15	0.00045	19.07%
.40-.425	0.06	0.05	0.003	0.09	0.00027	11.44%
		Total Width	*Tot. Area*	*Average V*		
		0.35	0.017	0.127		
		0.35				
						100.00%
					0.0024	
Liters/second		2.36		0.13		
US Gal/second		0.62				
US Gal/minute		37.41				
ft3/second		0.08				
ft3/day		7200.67				
Acre Feet/day		0.17				

Data Double Checked February 25, 2015

May 9, 2014 at approx. 14:30 to 14:45 PST Tomat Cr above Boucherie Pond
Used 0.6 depth for flow meter.

Staff = 0.120 Difficult to read to the mm, wave action
Sensor = 0.096 17.1 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
0.225-0.25	0.02	0.05	0.001	0.01	0.00001	0.42%
0.30	0.04	0.05	0.002	0.05	0.00010	8.47%
0.35	0.04	0.05	0.002	0.08	0.00016	13.56%
0.40	0.05	0.05	0.003	0.09	0.00023	19.07%
0.45	0.06	0.05	0.003	0.10	0.00030	25.42%
.50-0.525	0.06	0.05	0.003	0.13	0.00039	33.05%
		Total Width	*Tot. Area*	*Average V*		
		0.30	0.014	0.076		
		0.30				
						100.00%
					0.0012	
Liters/second		1.18		0.08		
US Gal/second		0.31				
US Gal/minute		18.70				
ft3/second		0.04				
ft3/day		3600.33				
Acre Feet/day		0.08				

Data Double Checked February 25, 2015

June 25, 2014 at approx. 07:45 to 08:00 PST Tomat Cr above Boucherie Pond
Used 0.6 depth for flow meter.

Staff = 0.134 Difficult to read to the mm, wave action
Sensor = 0.114 21.1 *C

Station	(m) Water Depth	(m) width at depth	(m^2) Flow Area	(m/s) velocity	(m^3/s) Q	
.025-.05	0.02	0.05	0.001	0.05	0.00005	1.21%
0.10	0.06	0.05	0.003	0.16	0.00048	11.65%
0.15	0.06	0.05	0.003	0.19	0.00057	13.83%
0.20	0.08	0.05	0.004	0.24	0.00096	23.30%
0.25	0.08	0.05	0.004	0.25	0.00100	24.27%
0.30	0.08	0.05	0.004	0.22	0.00088	21.36%
.35-.375	0.06	0.05	0.003	0.06	0.00018	4.37%
		Total Width	*Tot. Area*	*Average V*		
		0.35	0.022	0.167		
		0.35				
						100.00%
					0.0041	
Liters/second		4.12		0.17		
US Gal/second		1.09				
US Gal/minute		65.30				
ft3/second		0.15				
ft3/day		12570.65				
Acre Feet/day		0.29				

(Adapted from) RISC HYD-04 Water Stage Recorder-Station Log

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek above Boucherie Pond** EMS ID: **n/a**
Station #: **n/a**

Date (yyyy/mm/dd)	Arrival				Departure				
	Time		Gauge Height/Stage (m)		Time		Gauge Height/Stage (m)		Initials
	Watch	Logger	Ref. Gauge	Logger	Watch	Logger	Ref. Gauge	Logger	
2013/10/29	13:59	-	-	-	14:20	14:20	0.118	0.1008	GV
Comments:	Initial site set up, set sensor to arbitrary depth, Q measured.								
2013/11/29	13:00	13:00	0.131	0.1132	13:15	13:15	0.131	0.1132	GV
Comments:	Data downloaded, discharge measured.								
2014/01/04	13:30	13:28	0.129	0.110	13:35	13:33	0.129	0.110	GV
Comments:	Discharge not measured, data downloaded, left sensor as is.								
2014/02/28	12:15	12:10	0.130	0.1134	12:20	12:16	0.130	0.1134	GV
Comments:	Data downloaded, discharge not measured, no problems noted.								
2014/03/31	12:14	12:15	0.133	0.1069	12:45	12:45	0.133	0.1069	GV
Comments:	Discharge measured, data downloaded.								
2014/05/09	14:32	14:28	0.120	0.0958	14:53	14:49	0.120	0.0958	GV
Comments:	Discharge measured, data downloaded.								
2014/06/25	07:41	07:44	0.134	0.1103	07:56	07:59	0.134	0.1103	GV
Comments:	Discharge measured, data downloaded.								
2014/07/30	08:07	08:04	0.084	0.0677	08:15	08:15	0.084	0.0677	GV
Comments:	Discharge not measured, data downloaded.								
2014/08/30	09:42	09:38	0.136	0.1149	09:50	09:46	0.136	0.1149	GV
Comments:	Data downloaded, discharge not measured today.								
2014/09/30	13:49	13:46	0.132	0.1128	13:55	13:52	0.132	0.1128	GV
Comments:	Data downloaded, discharge not measured today.								
2014/11/02	13:31	13:23	0.430	0.430	13:42	-	0.430	-	GV
Comments:									
2014/11/02	13:31	13:23	0.430	0.430	13:42	-	0.430	-	GV
Comments:	Final annual site visit, discharge not measured.								

(Adapted from) RISC HYD-05 Stage Discharge Rating Curve and Table

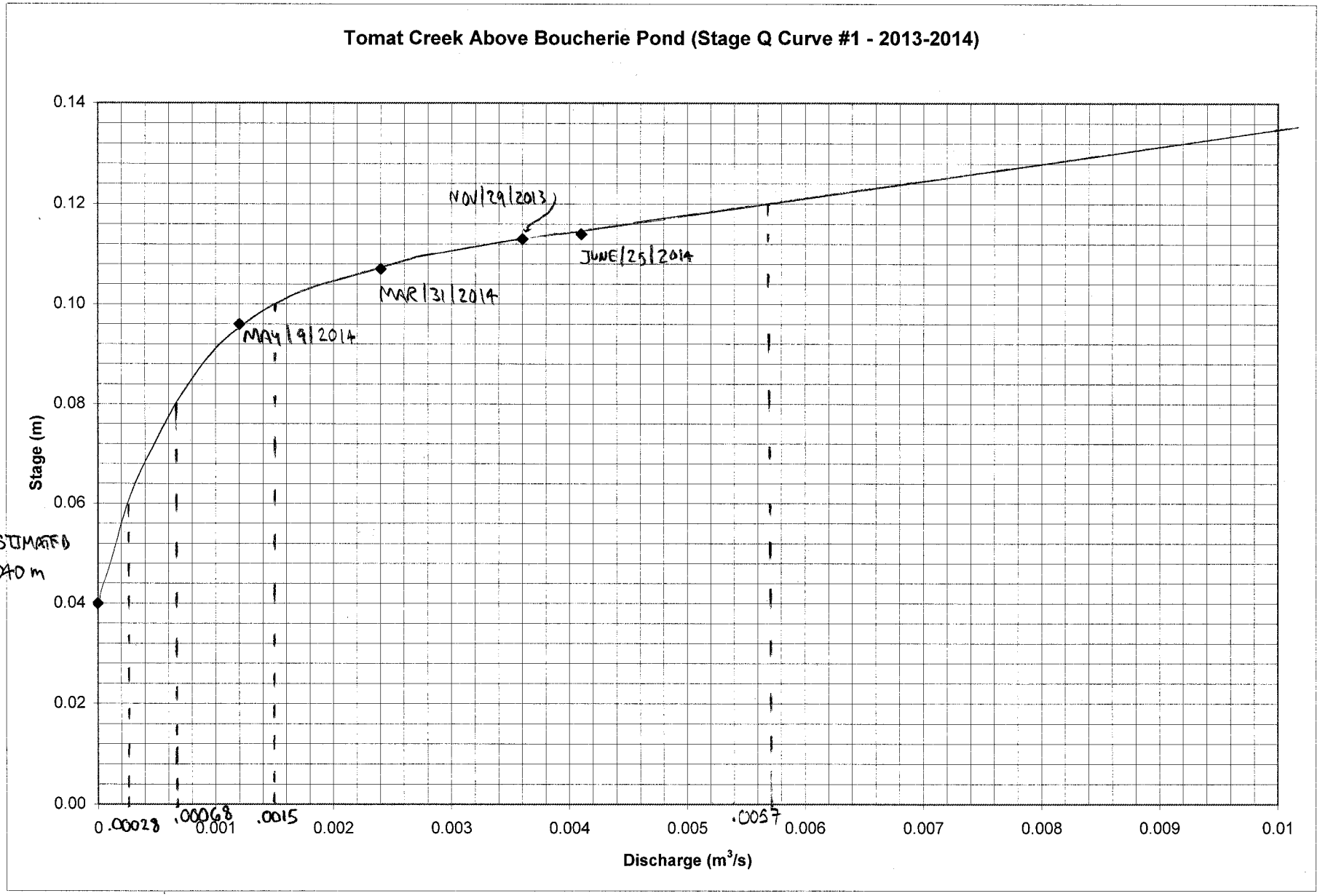
Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek above Boucherie Pond** EMS ID: **n/a**
Station #: **n/a**

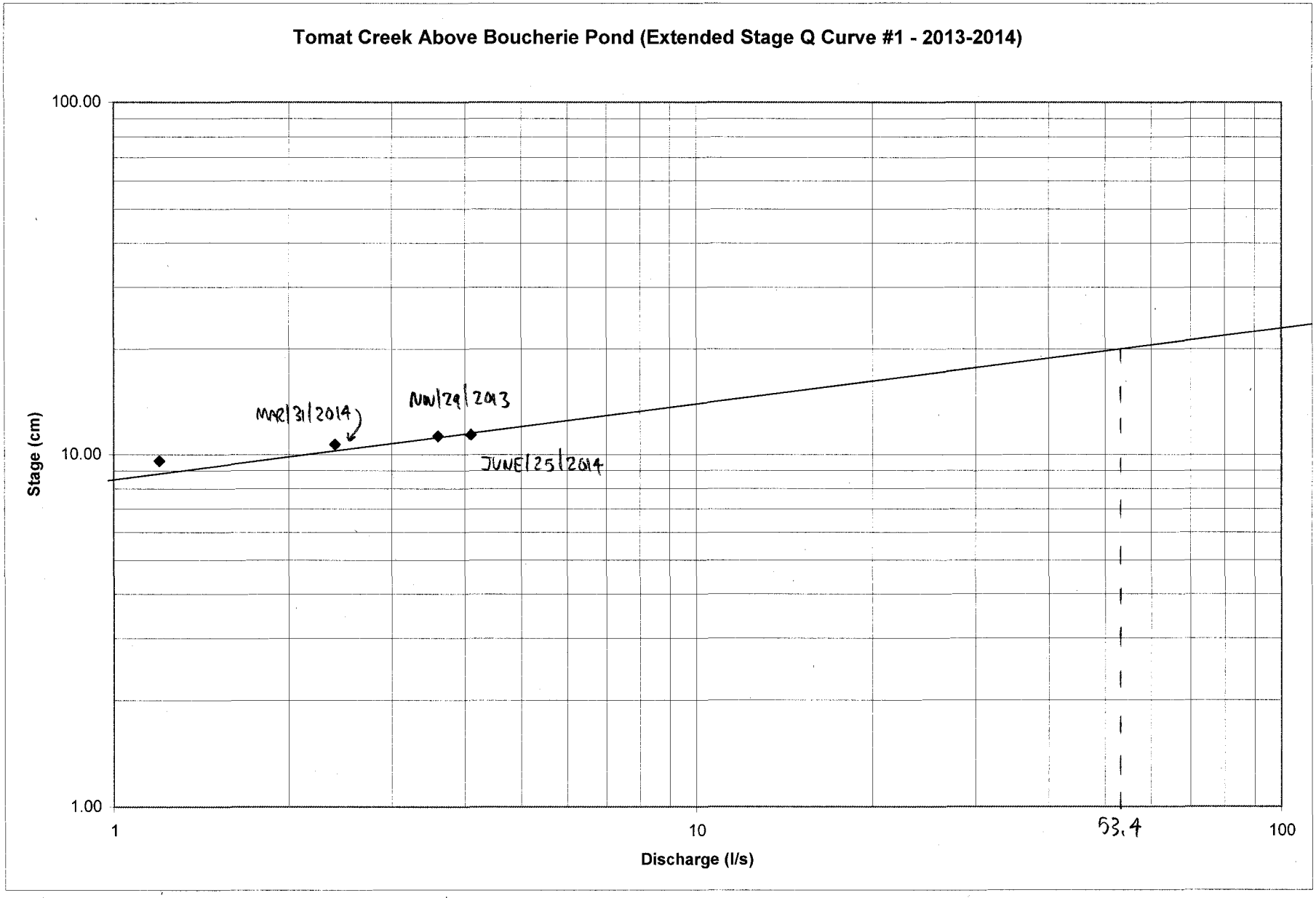
Stage Discharge Curve No.: 1 Created on: February, 2015
Number of Points: 5 Curve Period: October 2013-Dec 2014
Highest Measured Q: 0.0041 m^3/s Corresponding Gauge Height: 0.114 m
Lowest Measured Q: 0.0012 m^3/s Corresponding Gauge Height: 0.096 m
Zero Q at: 0.040 m Approx. Bank Elevation: n/a

Stage Discharge Rating Curve and Table: (Please refer to following pages)

Data Summary

Computed By: Gary Van Emmerik, AScT Date: February 28, 2015
Checked By: Gary Van Emmerik, AScT Date: March 1, 2015


Tomat Creek Above Boucherie Pond (Stage Q Curve #1 - 2013-2014)
Stage (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
NOV|29|2013
JUNE|25|2014
MAR|31|2014
MAY|9|2014
Ø Q ESTIMATED @ .040 m
0.00028
.00068
.0015
.0057
0.001
0.002
0.003
0.004
0.005
0.006
0.007
0.008
0.009
0.01
Discharge (m³/s)


Tomat Creek Above Boucherie Pond (Extended Stage Q Curve #1 - 2013-2014)
100.00
10.00
1.00
Stage (cm)
1
10
100
Discharge (l/s)
MAR|31|2014
NOV|29|2013
JUNE|25|2014
53.4

Expanded Stage Discharge Table For Tomat Creek above Boucherie Pond 2013-2014 Data - Curve #1

Meters	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	Meters
0.04	0.000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	**0.04**
0.05	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	**0.05**
0.06	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	**0.06**
0.07	0.0005	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	**0.07**
0.08	0.0007	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009	0.0010	0.0010	0.0010	**0.08**
0.09	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013	0.0014	0.0014	0.0015	**0.09**
0.10	0.0015	0.0017	0.0019	0.0021	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	**0.10**
0.11	0.0036	0.0038	0.0040	0.0042	0.0044	0.0047	0.0049	0.0051	0.0053	0.0055	**0.11**
0.12	0.0057	0.0063	0.0069	0.0075	0.0081	0.0087	0.0093	0.0099	0.0105	0.0111	**0.12**
0.13	0.0117	0.0123	0.0129	0.0135	0.0140	0.0146	0.0152	0.0158	0.0164	0.0170	**0.13**
0.14	0.0176	0.0182	0.0188	0.0194	0.0200	0.0206	0.0212	0.0218	0.0224	0.0230	**0.14**
0.15	0.0236	0.0242	0.0248	0.0254	0.0260	0.0266	0.0272	0.0278	0.0284	0.0290	**0.15**
0.16	0.0296	0.0301	0.0307	0.0313	0.0319	0.0325	0.0331	0.0337	0.0343	0.0349	**0.16**
0.17	0.0355	0.0361	0.0367	0.0373	0.0379	0.0385	0.0391	0.0397	0.0403	0.0409	**0.17**
0.18	0.0415	0.0421	0.0427	0.0433	0.0439	0.0445	0.0451	0.0456	0.0462	0.0468	**0.18**
0.19	0.0474	0.0480	0.0486	0.0492	0.0498	0.0504	0.0510	0.0516	0.0522	0.0528	**0.19**
0.20	0.0534	0.0540	0.0546	0.0552	0.0558	0.0564	0.0570	0.0576	0.0582	0.0588	**0.20**
0.21	0.0594	0.0600	0.0606	0.0612	0.0617	0.0623	0.0629	0.0635	0.0641	0.0647	**0.21**
0.22	0.0653	0.0659	0.0665	0.0671	0.0677	0.0683	0.0689	0.0695	0.0701	0.0707	**0.22**
0.23	0.0713	0.0719	0.0725	0.0731	0.0737	0.0743	0.0749	0.0755	0.0761	0.0767	**0.23**
0.24	0.0773	0.0778	0.0784	0.0790	0.0796	0.0802	0.0808	0.0814	0.0820	0.0826	**0.24**
0.25	0.0832	0.0838	0.0844	0.0850	0.0856	0.0862	0.0868	0.0874	0.0880	0.0886	**0.25**
0.26	0.0892	0.0898	0.0904	0.0910	0.0916	0.0922	0.0928	0.0933	0.0939	0.0945	**0.26**
0.27	0.0951	0.0957	0.0963	0.0969	0.0975	0.0981	0.0987	0.0993	0.0999	0.1005	**0.27**
0.28	0.1011	0.1017	0.1023	0.1029	0.1035	0.1041	0.1047	0.1053	0.1059	0.1065	**0.28**
0.29	0.1071	0.1077	0.1083	0.1089	0.1094	0.1100	0.1106	0.1112	0.1118	0.1124	**0.29**
0.30	0.1130	0.1136	0.1142	0.1148	0.1154	0.1160	0.1166	0.1172	0.1178	0.1184	**0.30**
0.31	0.1190	0.1196	0.1202	0.1208	0.1214	0.1220	0.1226	0.1232	0.1238	0.1244	**0.31**
0.32	0.1250	0.1255	0.1261	0.1267	0.1273	0.1279	0.1285	0.1291	0.1297	0.1303	**0.32**
0.33	0.1309	0.1315	0.1321	0.1327	0.1333	0.1339	0.1345	0.1351	0.1357	0.1363	**0.33**
0.34	0.1369	0.1375	0.1381	0.1387	0.1393	0.1399	0.1405	0.1410	0.1416	0.1422	**0.34**
0.35	0.1428	0.1434	0.1440	0.1446	0.1452	0.1458	0.1464	0.1470	0.1476	0.1482	**0.35**
0.36	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.36**
0.37	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.37**
0.38	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.38**
0.39	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.39**
0.40	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.40**
0.41	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.41**
0.42	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.42**
0.43	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.43**
0.44	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.44**
0.45	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.45**
0.46	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	0.1488	**0.46**

Tomat Creek above Boucherie Pond

2014 Mean Daily Discharge (m^3/s) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.003	0.003	0.005	0.002	0.002	0.001	0.000	0.000	0.001	0.006	0.011	-	**1**
2	0.003	0.003	0.004	0.001	0.002	0.001	0.000	0.001	0.004	0.008	0.005	-	**2**
3	0.016	0.003	0.004	0.001	0.001	0.002	0.000	0.005	0.007	0.003	0.005	-	**3**
4	0.004	0.002	0.009	0.001	0.007	0.029	0.001	0.008	0.005	0.002	0.005	-	**4**
5	0.003	0.002	0.027	0.001	0.017	0.016	0.002	0.005	0.003	0.004	0.006	-	**5**
6	0.002	0.002	0.027	0.001	0.007	0.002	0.009	0.004	0.002	0.005	0.007	-	**6**
7	0.002	0.002	0.012	0.001	0.004	0.001	0.023	0.004	0.001	0.006	0.005	-	**7**
8	0.003	0.002	0.008	0.001	0.001	0.001	0.010	0.003	0.001	0.005	0.005	-	**8**
9	0.003	0.001	0.006	0.010	0.001	0.001	0.007	0.006	0.003	0.003	0.005	-	**9**
10	0.003	0.002	0.005	0.005	0.001	0.001	0.004	0.010	0.013	0.001	0.004	-	**10**
11	0.019	0.002	0.004	0.001	0.001	0.004	0.002	0.006	0.010	0.002	0.005	-	**11**
12	0.007	0.022	0.001	0.001	0.001	0.006	0.001	0.003	0.016	0.005	0.004	-	**12**
13	0.004	0.016	0.001	0.001	0.001	0.055	0.001	0.002	0.008	0.006	0.004	-	**13**
14	0.004	0.007	0.001	0.001	0.001	0.027	0.001	0.003	0.002	0.012	0.004	-	**14**
15	0.003	0.004	0.003	0.001	0.001	0.007	0.002	0.006	0.001	0.008	0.004	-	**15**
16	0.003	0.018	0.004	0.020	0.001	0.015	0.004	0.004	0.001	0.007	0.004	-	**16**
17	0.003	0.004	0.003	0.006	0.001	0.011	0.002	0.005	0.001	0.005	0.004	-	**17**
18	0.003	0.004	0.003	0.033	0.001	0.004	0.002	0.002	0.001	0.007	0.004	-	**18**
19	0.003	0.005	0.004	0.007	0.001	0.001	0.003	0.001	0.001	0.005	0.004	-	**19**
20	0.003	0.004	0.004	0.005	0.001	0.001	0.008	0.001	0.001	0.005	0.004	-	**20**
21	0.003	0.003	0.004	0.004	0.001	0.001	0.018	0.001	0.001	0.002	0.006	-	**21**
22	0.002	0.003	0.003	0.002	0.001	0.001	0.003	0.003	0.008	0.006	-	-	**22**
23	0.002	0.004	0.004	0.002	0.001	0.001	0.020	0.006	0.028	0.011	-	-	**23**
24	0.003	0.004	0.003	0.017	0.009	0.001	0.078	0.006	0.023	0.005	-	-	**24**
25	0.003	0.004	0.009	0.018	0.009	0.005	0.010	0.004	0.011	0.006	-	-	**25**
26	0.002	0.004	0.012	0.007	0.009	0.002	0.005	0.001	0.024	0.005	-	-	**26**
27	0.002	0.004	0.027	0.007	0.005	0.001	0.004	0.001	0.006	0.005	-	-	**27**
28	0.002	0.004	0.006	0.007	0.001	0.001	0.002	0.005	0.005	0.008	-	-	**28**
29	0.005	-	0.001	0.003	0.001	0.000	0.001	0.015	0.005	0.005	-	-	**29**
30	0.007	-	0.003	0.001	0.001	0.000	0.001	0.007	0.005	0.004	-	-	**30**
31	0.005	-	0.003	-	0.001	-	0.001	0.002	-	0.025	-	-	**31**
Max	**0.019**	**0.022**	**0.027**	**0.033**	**0.017**	**0.055**	**0.078**	**0.015**	**0.028**	**0.025**	**0.011**		
Min	**0.002**	**0.001**	**0.001**	**0.001**	**0.001**	**0.000**	**0.000**	**0.000**	**0.001**	**0.001**	**0.004**		
Mean	**0.004**	**0.005**	**0.007**	**0.006**	**0.003**	**0.007**	**0.007**	**0.004**	**0.007**	**0.006**	**0.005**		

Data beyond November 21, 2014 not available due to sensor power failure/error.

Tomat Creek above Boucherie Pond
2014 Daily Yield (AF) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.4	0.8	-	**1**
2	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.1	0.2	0.6	0.3	-	**2**
3	1.1	0.2	0.3	0.1	0.1	0.1	0.0	0.4	0.5	0.2	0.3	-	**3**
4	0.3	0.2	0.6	0.1	0.5	2.0	0.1	0.6	0.4	0.1	0.4	-	**4**
5	0.2	0.1	1.9	0.1	1.2	1.1	0.1	0.3	0.2	0.3	0.4	-	**5**
6	0.2	0.1	1.9	0.1	0.5	0.1	0.6	0.3	0.1	0.4	0.5	-	**6**
7	0.2	0.1	0.8	0.1	0.2	0.1	1.6	0.2	0.1	0.4	0.4	-	**7**
8	0.2	0.1	0.5	0.1	0.1	0.1	0.7	0.2	0.1	0.4	0.3	-	**8**
9	0.2	0.1	0.4	0.7	0.1	0.0	0.5	0.4	0.2	0.2	0.4	-	**9**
10	0.2	0.1	0.3	0.4	0.1	0.1	0.3	0.7	0.9	0.1	0.3	-	**10**
11	1.3	0.2	0.3	0.1	0.1	0.3	0.2	0.4	0.7	0.1	0.3	-	**11**
12	0.5	1.6	0.1	0.1	0.1	0.4	0.1	0.2	1.1	0.3	0.3	-	**12**
13	0.3	1.1	0.1	0.1	0.1	3.8	0.1	0.1	0.6	0.4	0.3	-	**13**
14	0.3	0.5	0.1	0.1	0.1	1.9	0.1	0.2	0.1	0.8	0.3	-	**14**
15	0.2	0.3	0.2	0.1	0.1	0.5	0.1	0.4	0.1	0.5	0.3	-	**15**
16	0.2	1.3	0.3	1.4	0.1	1.1	0.3	0.3	0.1	0.5	0.3	-	**16**
17	0.2	0.3	0.2	0.4	0.1	0.8	0.2	0.3	0.1	0.4	0.3	-	**17**
18	0.2	0.3	0.2	2.3	0.1	0.2	0.1	0.1	0.1	0.5	0.3	-	**18**
19	0.2	0.4	0.3	0.5	0.1	0.1	0.2	0.1	0.1	0.4	0.3	-	**19**
20	0.2	0.2	0.2	0.4	0.1	0.1	0.5	0.1	0.1	0.3	0.3	-	**20**
21	0.2	0.2	0.3	0.3	0.1	0.0	1.3	0.1	0.1	0.1	0.4	-	**21**
22	0.2	0.2	0.2	0.2	0.1	0.0	0.2	0.2	0.6	0.4	-	-	**22**
23	0.2	0.3	0.3	0.2	0.1	0.0	1.4	0.4	1.9	0.8	-	-	**23**
24	0.2	0.3	0.2	1.2	0.6	0.1	5.4	0.4	1.6	0.3	-	-	**24**
25	0.2	0.2	0.6	1.3	0.6	0.3	0.7	0.3	0.8	0.4	-	-	**25**
26	0.2	0.3	0.8	0.5	0.6	0.1	0.3	0.1	1.7	0.4	-	-	**26**
27	0.1	0.3	1.9	0.5	0.4	0.1	0.3	0.1	0.4	0.4	-	-	**27**
28	0.1	0.3	0.4	0.5	0.1	0.0	0.1	0.3	0.4	0.5	-	-	**28**
29	0.3	-	0.1	0.2	0.1	0.0	0.0	1.1	0.4	0.4	-	-	**29**
30	0.5	-	0.2	0.1	0.1	0.0	0.1	0.5	0.3	0.3	-	-	**30**
31	0.3	-	0.2	-	0.1	-	0.1	0.1	-	1.7	-	-	**31**
Max	**1.3**	**1.6**	**1.9**	**2.3**	**1.2**	**3.8**	**5.4**	**1.1**	**1.9**	**1.7**	**0.8**		
Min	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.3**		
Mean	**0.3**	**0.3**	**0.5**	**0.4**	**0.2**	**0.5**	**0.5**	**0.3**	**0.5**	**0.4**	**0.4**		
Total	**9.1**	**9.7**	**14.6**	**11.9**	**6.6**	**13.7**	**15.7**	**9.0**	**14.0**	**13.0**	**7.4**		**124.8**

Data beyond November 21, 2014 not available due to sensor power failure/error.

Tomat Creek above Boucherie Pond
2014 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.105	0.108	0.115	0.096	0.101	0.088	0.049	0.067	0.089	0.118	0.128	-	**1**
2	0.109	0.105	0.111	0.086	0.100	0.086	0.055	0.080	0.099	0.124	0.115	-	**2**
3	0.137	0.106	0.114	0.087	0.094	0.092	0.057	0.111	0.121	0.105	0.116	-	**3**
4	0.112	0.104	0.124	0.092	0.115	0.159	0.064	0.118	0.118	0.100	0.117	-	**4**
5	0.106	0.103	0.157	0.088	0.139	0.138	0.096	0.110	0.105	0.110	0.118	-	**5**
6	0.104	0.102	0.155	0.093	0.122	0.096	0.116	0.105	0.100	0.118	0.123	-	**6**
7	0.105	0.102	0.131	0.088	0.110	0.083	0.148	0.105	0.093	0.121	0.117	-	**7**
8	0.106	0.101	0.123	0.087	0.097	0.081	0.125	0.102	0.097	0.119	0.116	-	**8**
9	0.107	0.100	0.120	0.123	0.097	0.079	0.115	0.113	0.105	0.108	0.117	-	**9**
10	0.106	0.100	0.114	0.111	0.091	0.081	0.103	0.125	0.129	0.098	0.114	-	**10**
11	0.140	0.104	0.110	0.094	0.091	0.103	0.092	0.113	0.124	0.102	0.115	-	**11**
12	0.120	0.146	0.087	0.095	0.094	0.117	0.079	0.104	0.136	0.115	0.114	-	**12**
13	0.112	0.137	0.085	0.096	0.095	0.201	0.084	0.095	0.119	0.118	0.113	-	**13**
14	0.111	0.121	0.090	0.097	0.089	0.156	0.079	0.096	0.099	0.130	0.114	-	**14**
15	0.109	0.112	0.107	0.095	0.089	0.122	0.095	0.119	0.093	0.123	0.113	-	**15**
16	0.108	0.141	0.111	0.142	0.087	0.135	0.107	0.113	0.092	0.122	0.112	-	**16**
17	0.109	0.113	0.108	0.116	0.095	0.130	0.096	0.115	0.092	0.117	0.112	-	**17**
18	0.107	0.112	0.109	0.165	0.091	0.110	0.096	0.098	0.097	0.122	0.112	-	**18**
19	0.106	0.117	0.111	0.122	0.092	0.093	0.105	0.093	0.096	0.119	0.113	-	**19**
20	0.105	0.110	0.110	0.118	0.089	0.083	0.116	0.088	0.097	0.116	0.112	-	**20**
21	0.105	0.108	0.112	0.110	0.089	0.076	0.141	0.092	0.097	0.102	0.117	-	**21**
22	0.105	0.109	0.109	0.104	0.089	0.074	0.100	0.105	0.117	0.113	-	-	**22**
23	0.104	0.111	0.112	0.103	0.092	0.074	0.131	0.121	0.157	0.128	-	-	**23**
24	0.106	0.113	0.108	0.138	0.117	0.091	0.241	0.119	0.150	0.114	-	-	**24**
25	0.108	0.110	0.118	0.141	0.122	0.116	0.127	0.113	0.129	0.121	-	-	**25**
26	0.103	0.113	0.129	0.122	0.125	0.095	0.116	0.093	0.151	0.117	-	-	**26**
27	0.103	0.112	0.155	0.123	0.116	0.082	0.114	0.083	0.121	0.117	-	-	**27**
28	0.103	0.114	0.110	0.121	0.094	0.069	0.094	0.104	0.118	0.122	-	-	**28**
29	0.112	-	0.091	0.108	0.084	0.061	0.079	0.135	0.119	0.118	-	-	**29**
30	0.120	-	0.107	0.097	0.084	0.059	0.079	0.120	0.115	0.113	-	-	**30**
31	0.115	-	0.107	-	0.086	-	0.080	0.100	-	0.152	-	-	**31**
Max	**0.140**	**0.146**	**0.157**	**0.165**	**0.139**	**0.201**	**0.241**	**0.135**	**0.157**	**0.152**	**0.128**		
Min	**0.103**	**0.100**	**0.085**	**0.086**	**0.084**	**0.059**	**0.049**	**0.067**	**0.089**	**0.098**	**0.112**		
Mean	**0.110**	**0.112**	**0.114**	**0.109**	**0.099**	**0.101**	**0.103**	**0.105**	**0.112**	**0.117**	**0.116**		

Data beyond November 21, 2014 not available due to sensor power failure/error.

Tomat Creek above Boucherie Pond
2013 Mean Daily Discharge (m^3/s) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.003	0.029	**1**
2	-	-	-	-	-	-	-	-	-	-	0.052	0.008	**2**
3	-	-	-	-	-	-	-	-	-	-	0.013	0.004	**3**
4	-	-	-	-	-	-	-	-	-	-	0.003	0.004	**4**
5	-	-	-	-	-	-	-	-	-	-	0.007	0.004	**5**
6	-	-	-	-	-	-	-	-	-	-	0.006	0.004	**6**
7	-	-	-	-	-	-	-	-	-	-	0.018	0.003	**7**
8	-	-	-	-	-	-	-	-	-	-	0.022	0.003	**8**
9	-	-	-	-	-	-	-	-	-	-	0.006	0.003	**9**
10	-	-	-	-	-	-	-	-	-	-	0.007	0.003	**10**
11	-	-	-	-	-	-	-	-	-	-	0.004	0.003	**11**
12	-	-	-	-	-	-	-	-	-	-	0.004	0.003	**12**
13	-	-	-	-	-	-	-	-	-	-	0.003	0.003	**13**
14	-	-	-	-	-	-	-	-	-	-	0.003	0.003	**14**
15	-	-	-	-	-	-	-	-	-	-	0.013	0.003	**15**
16	-	-	-	-	-	-	-	-	-	-	0.022	0.003	**16**
17	-	-	-	-	-	-	-	-	-	-	0.006	0.003	**17**
18	-	-	-	-	-	-	-	-	-	-	0.010	0.004	**18**
19	-	-	-	-	-	-	-	-	-	-	0.031	0.003	**19**
20	-	-	-	-	-	-	-	-	-	-	0.007	0.003	**20**
21	-	-	-	-	-	-	-	-	-	-	0.005	0.003	**21**
22	-	-	-	-	-	-	-	-	-	-	0.006	0.003	**22**
23	-	-	-	-	-	-	-	-	-	-	0.009	0.008	**23**
24	-	-	-	-	-	-	-	-	-	-	0.010	0.008	**24**
25	-	-	-	-	-	-	-	-	-	-	0.009	0.003	**25**
26	-	-	-	-	-	-	-	-	-	-	0.007	0.004	**26**
27	-	-	-	-	-	-	-	-	-	-	0.006	0.007	**27**
28	-	-	-	-	-	-	-	-	-	-	0.005	0.008	**28**
29	-	-	-	-	-	-	-	-	-	0.002	0.005	0.004	**29**
30	-	-	-	-	-	-	-	-	-	0.004	0.006	0.003	**30**
31	-	-	-	-	-	-	-	-	-	0.005	-	0.003	**31**
Max										**0.005**	**0.052**	**0.029**	
Min										**0.002**	**0.003**	**0.003**	
Mean										**0.004**	**0.010**	**0.005**	

Station established October 29, 2013 Data not available prior to this date.

Tomat Creek above Boucherie Pond
2013 Daily Yield (AF) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.2	2.1	**1**
2	-	-	-	-	-	-	-	-	-	-	3.7	0.6	**2**
3	-	-	-	-	-	-	-	-	-	-	0.9	0.3	**3**
4	-	-	-	-	-	-	-	-	-	-	0.2	0.3	**4**
5	-	-	-	-	-	-	-	-	-	-	0.5	0.3	**5**
6	-	-	-	-	-	-	-	-	-	-	0.4	0.3	**6**
7	-	-	-	-	-	-	-	-	-	-	1.2	0.2	**7**
8	-	-	-	-	-	-	-	-	-	-	1.5	0.2	**8**
9	-	-	-	-	-	-	-	-	-	-	0.4	0.2	**9**
10	-	-	-	-	-	-	-	-	-	-	0.5	0.2	**10**
11	-	-	-	-	-	-	-	-	-	-	0.3	0.2	**11**
12	-	-	-	-	-	-	-	-	-	-	0.3	0.2	**12**
13	-	-	-	-	-	-	-	-	-	-	0.2	0.2	**13**
14	-	-	-	-	-	-	-	-	-	-	0.2	0.2	**14**
15	-	-	-	-	-	-	-	-	-	-	0.9	0.2	**15**
16	-	-	-	-	-	-	-	-	-	-	1.6	0.2	**16**
17	-	-	-	-	-	-	-	-	-	-	0.4	0.2	**17**
18	-	-	-	-	-	-	-	-	-	-	0.7	0.3	**18**
19	-	-	-	-	-	-	-	-	-	-	2.2	0.2	**19**
20	-	-	-	-	-	-	-	-	-	-	0.5	0.2	**20**
21	-	-	-	-	-	-	-	-	-	-	0.4	0.2	**21**
22	-	-	-	-	-	-	-	-	-	-	0.4	0.2	**22**
23	-	-	-	-	-	-	-	-	-	-	0.6	0.5	**23**
24	-	-	-	-	-	-	-	-	-	-	0.7	0.6	**24**
25	-	-	-	-	-	-	-	-	-	-	0.6	0.2	**25**
26	-	-	-	-	-	-	-	-	-	-	0.5	0.3	**26**
27	-	-	-	-	-	-	-	-	-	-	0.4	0.5	**27**
28	-	-	-	-	-	-	-	-	-	-	0.4	0.6	**28**
29	-	-	-	-	-	-	-	-	-	0.2	0.3	0.3	**29**
30	-	-	-	-	-	-	-	-	-	0.3	0.4	0.2	**30**
31	-	-	-	-	-	-	-	-	-	0.3	-	0.2	**31**
Max										**0.3**	**3.7**	**2.1**	
Min										**0.2**	**0.2**	**0.2**	
Mean										**0.3**	**0.7**	**0.3**	
Total										**0.8**	**21.6**	**10.4**	**32.7**

Station established October 29, 2013 Data not available prior to this date.

Tomat Creek above Boucherie Pond
2013 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.109	0.160	**1**
2	-	-	-	-	-	-	-	-	-	-	0.198	0.123	**2**
3	-	-	-	-	-	-	-	-	-	-	0.131	0.114	**3**
4	-	-	-	-	-	-	-	-	-	-	0.109	0.112	**4**
5	-	-	-	-	-	-	-	-	-	-	0.119	0.110	**5**
6	-	-	-	-	-	-	-	-	-	-	0.119	0.110	**6**
7	-	-	-	-	-	-	-	-	-	-	0.139	0.109	**7**
8	-	-	-	-	-	-	-	-	-	-	0.147	0.107	**8**
9	-	-	-	-	-	-	-	-	-	-	0.119	0.107	**9**
10	-	-	-	-	-	-	-	-	-	-	0.121	0.106	**10**
11	-	-	-	-	-	-	-	-	-	-	0.111	0.106	**11**
12	-	-	-	-	-	-	-	-	-	-	0.111	0.108	**12**
13	-	-	-	-	-	-	-	-	-	-	0.109	0.107	**13**
14	-	-	-	-	-	-	-	-	-	-	0.108	0.106	**14**
15	-	-	-	-	-	-	-	-	-	-	0.130	0.109	**15**
16	-	-	-	-	-	-	-	-	-	-	0.148	0.106	**16**
17	-	-	-	-	-	-	-	-	-	-	0.119	0.105	**17**
18	-	-	-	-	-	-	-	-	-	-	0.126	0.112	**18**
19	-	-	-	-	-	-	-	-	-	-	0.163	0.108	**19**
20	-	-	-	-	-	-	-	-	-	-	0.121	0.106	**20**
21	-	-	-	-	-	-	-	-	-	-	0.119	0.105	**21**
22	-	-	-	-	-	-	-	-	-	-	0.121	0.105	**22**
23	-	-	-	-	-	-	-	-	-	-	0.125	0.118	**23**
24	-	-	-	-	-	-	-	-	-	-	0.127	0.122	**24**
25	-	-	-	-	-	-	-	-	-	-	0.126	0.109	**25**
26	-	-	-	-	-	-	-	-	-	-	0.122	0.112	**26**
27	-	-	-	-	-	-	-	-	-	-	0.120	0.119	**27**
28	-	-	-	-	-	-	-	-	-	-	0.118	0.123	**28**
29	-	-	-	-	-	-	-	-	-	0.091	0.115	0.111	**29**
30	-	-	-	-	-	-	-	-	-	0.112	0.118	0.106	**30**
31	-	-	-	-	-	-	-	-	-	0.114	-	0.106	**31**
Max										**0.114**	**0.198**	**0.160**	
Min										**0.091**	**0.108**	**0.105**	
Mean										**0.106**	**0.126**	**0.112**	

Station established October 29, 2013 Data not available prior to this date.

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 1 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Tomat Creek above Boucherie Pond** EMS ID: **n/a**
Station #: **n/a**

Number of level checks made per year: 2 or more, 1 or more**,** **None/undefined**
Gauge Correction Required Y/**N**
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor

Discharge Record

Discharge (m^3/s)		Corresponding Gauge Height (m)	Date/Time
Max. Inst. Discharge	0.137	0.341	2014/07/24 at 08:00 PST
Max Inst. Measured Discharge	0.0041	0.114	2014/06/25 at 07:45 PST
Min Inst. Measured Discharge	0.0012	0.096	2014/05/09 at 14:30 PST

Number of Manual Flow Measurements per Year:
5 or more, 3 or more, 2 or more, <2 undefined

Missing Period From: (yyyy/mm/dd) **2014/11/22** through **2014/12/31** and Reason: **Sensor Power failure**

Stage Discharge Relationship

	Curve #	Start Date	End Date	Cause for Shift
2013-2014	1	2013/10/29	2014/12/31	Initial stage discharge curve.

Remarks: The cross section is difficult for measuring very low flow volumes and this is reflected in the accuracy/data grades on the following pages. The water level values alone may be more valuable for determining storm responses in the Tomat Creek drainage through the golf course.

The October 29, 2014 discharge was very low and does not match the corresponding stage discharge table. Very slight changes in the channel bed material/vegetation can have significant effects on the stage discharge relationship. This is likely the cause of the errors on this date. The 2014 stage discharge curves/table used to generate the daily discharge summary may be inaccurate at very low flow values (less than 1L/second).

Please Refer to Next Page for Data Grades and Declaration

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 2 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Tomat Creek above Boucherie Pond, page 2 of 2 – Data Grades

Item	Data Grade	Item	Data Grade
Instrumentation			
Meter Calibration	A	Meter Field Verification	A
Water Level Gauge	A	Water Level Gauge Accuracy	A
Stream Channel Condition			
Stream Channel Stability	B		
Field Procedure			
# Benchmarks (1)	E	#Verticals in flow measurements w meter	E[1]
#Level Checks per year	E	# Manual Flow measurements per year	A
Data Calculation and Assessment			
Discharge Rating Accuracy	A-E[2]	Data and Calculations Reviewed for Anomalies	A
		Results are Compared with other Stations	A

[1]-when active channel/flow is less than 2m wide, less than 20 verticals are possible and more than 10% of the total discharge was observed in a single field cross section reading. Discharges > the maximum measured or confirmed discharges are estimated. [2]For very low flows, absolute error small, but % error can exceed 7%. The cross section is shallow/rocky which affects the level measurement and error.

Standard Procedure followed for hydrometric Operation: RISC, March 2009
Instruments and Methods appropriate for the field Conditions? **Yes**
All Field forms HYD-01 through HYD-06 and field data/calculations reviewed for anomalies? **Yes**
Reviewed Time series Data with Metadata submitted to the Provincial Water Database? **No**
Results were compared with other stations and/or other years for check? **Yes**
Data can be made available to the public? **No/yes**, proprietary data collected paid for by Westbank First Nation, permission required prior to data sharing.

Dated: March 1, 2015

Declaration: I, Gary Van Emmerik, AScT, have reviewed all data and operating information for this hydrometric station. Data grades have been assigned as per standards requirement criteria as defined by the Manual of British Columbia Hydrometric Standards.

Date (yyyy/mm/dd)	Professional Seal/Signature	Designation	Professional/Technological Association
2015/03/01		AScT	ASTTBC

(Adapted from) RISC HYD-01 Description of Hydrometric Station

Original **Y**/N Revised Y/**N**
Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Boucherie Pond at Two Eagles Golf Course** EMS ID: n/a
Station #: n/a

Action (Station Established, Relocated, Closed)	Date: (yyyy/mm/dd)	By Whom
Established	*2013/10/29*	*G. Van Emmerik*

Site Description: *stilling well located at the outlet from Boucherie Pond at Creek at Two Eagles Golf Course, access station via gated/fenced area at bottom end of the pond.*

Location Type and Region: *Pond station, Okanagan/Kamloops*
Nearest Community: *West Kelowna*
Site Access Description: *HWY 97S to Boucherie Road, proceed towards the bottom of the Boucherie Pond at Two Eagles Golf Course off of Boucherie Road.*

Drainage Area upstream from Station: ***not reported***
Co-ordinates: ***49°49'42" N, 119°36'01" W (~354 m ASL)***

Water Level Gauge:

Manual	Recorder
Types: ***Standard vertical staff gauge*** Chain Gauge Wire Weight Gauge Reference Marks	Types: Graphical Y/N Digital **Y**/N If digital, sensor types ***Pressure Transducer***, bubbler, shaft encoder, radar/ultrasonic, other
Reading Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined	Reading/Sensor Accuracy: ***2 mm or less***, 5 mm or less, 1 cm or less, undefined

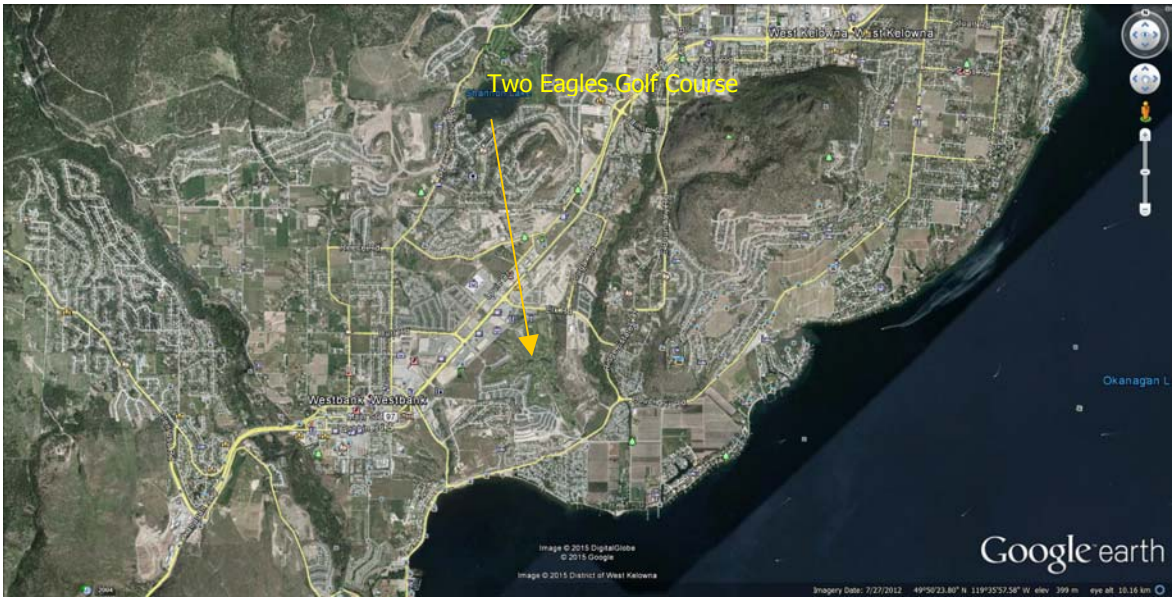
Reference Gauge Type: ***standard vertical staff gauge***, chain gauge, wire weight gauge, reference marks.
Zero Flow at Gauge Height: ***0.000 m***

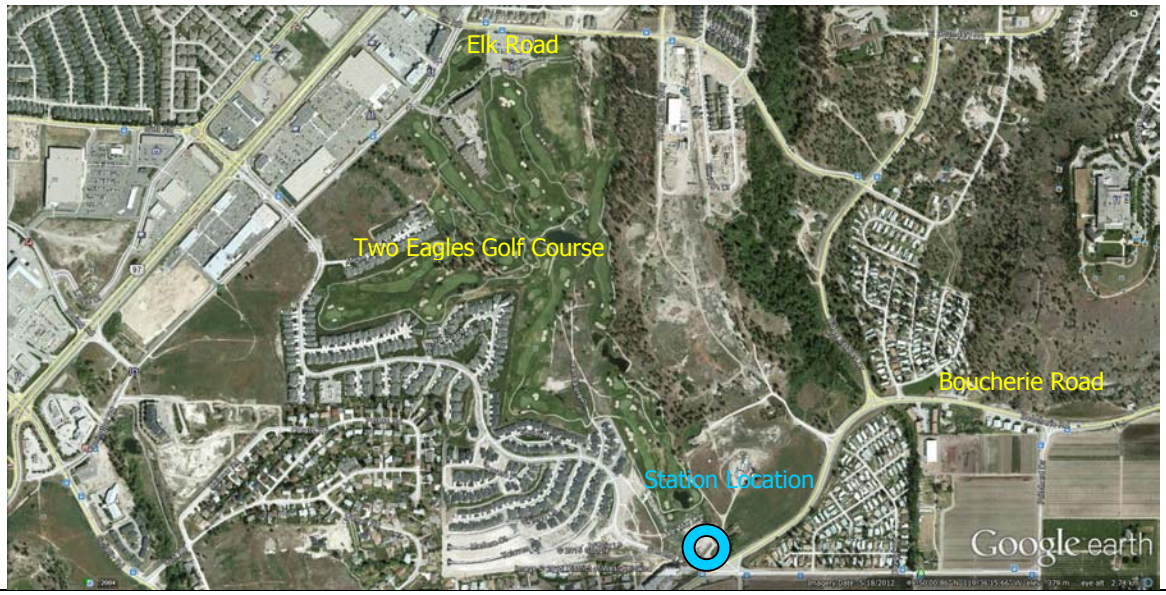
Benchmarks:

Benchmark	Date Established (yy/mm/dd)	Elevation when first established	GSC Datum Elevation, if any
BM #1	-	- m	None

Channel Description: ***pond/marsh, not a stream, level only recorded***
Stream Flow: (Regulated Y/N, Natural **Y**/N)
Station Type: Water Level Only **Y**/N, Discharge only Y/N, Both Y/N

Location and Site Details: **Boucherie Pond at Two Eagles Golf Course**





Remarks: Access to station via Boucherie Road at bottom of Two Eagles Golf Course.

RISCHYD02 Not completed to date – Survey data to be collected during 2015 open water period.
RISCHYD03 Not applicable – water level only measured at Boucherie Pond.
RISCHYD05 Not applicable – water level only measured at Boucherie Pond.

(Adapted from) RISC HYD-04 Water Stage Recorder-Station Log

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Boucherie Pond at Two Eagles Golf Course** EMS ID: **n/a**
Station #: **n/a**

Date (yyyy/mm/dd)	Arrival				Departure				
	Time		Gauge Height/Stage (m)		Time		Gauge Height/Stage (m)		Initials
	Watch	Logger	Ref. Gauge	Logger	Watch	Logger	Ref. Gauge	Logger	
2013/10/29	13:41	-	-	-	13:41	13:41	0.114	0.1183	GV
Comments:	Initial site set up, set sensor to arbitrary depth.								
2013/11/29	13:24	13:21	0.111	0.1169	13:57	13:57	0.111	0.1169	GV
Comments:	Data downloaded.								
2014/01/04	13:44	13:38	0.088	0.081	14:08	14:08	0.088	0.081	GV
Comments:	Data downloaded, reprogrammed sensor, new batteries.								
2014/02/28	12:30	12:31	0.069	0.1054	12:20	12:16	0.069	0.1054	GV
Comments:	Data downloaded, no problems noted.								
2014/03/31	12:47	12:43	0.102	0.1109	12:45	12:45	0.102	0.1109	GV
Comments:	Data downloaded.								
2014/05/09	14:59	14:52	0.061	0.0675	14:53	14:49	0.061	0.0675	GV
Comments:	Data downloaded.								
2014/06/25	08:02	08:00	0.104	-1.44	07:56	07:59	0.104	-	GV
Comments:	Data downloaded, sensor failure and removed for service. Overpressure/flooded likely.								
2014/06/30	10:15	10:15	0.078	0.104	11:15	11:15	0.078	0.104	GV
Comments:	Sensor re-deployed post repair, will monitor to ensure ok.								
2014/07/30	08:25	-	0.068	-	08:35	-	0.068	-	GV
Comments:	Sensor failure again, removed from service and repaired and replaced again.								
2014/08/30	09:45	-	0.168	-	10:00	-	0.168	-	GV
Comments:	Sensor failure, instrument is beyond repair, must replace and install new deployment well to top of pond to ensure future failures avoided.								
2014/09/30	13:55	-	-	-	14:10	-	0.430	-	GV
Comments:	Old stilling well assessed, will remove and install new equipment as per WFN request during 2015 season.								
2014/10/09	14:00	-	-	-	15:00	-	-	-	GV
Comments:	Final site visit, survey completed and old deployment well removed.								

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 1 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Station Operating Agency/Firm: **Westbank First Nation**
Station Name: **Boucherie Pond at Two Eagles Golf Course** EMS ID: **n/a**
Station #: **n/a**

Number of level checks made per year: 2 or more, **1 or more,** None/undefined
Gauge Correction Required Y/**N**
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor
Date/Time: ----/--/-- (yyyy/mm/dd) Correction: 0.000 m from sensor

Discharge Record: Water level only, not applicable

Discharge (m^3/s)		Corresponding Gauge Height (m)	Date/Time
Max. Inst. Discharge	-	-	-
Max Inst. Measured Discharge	-	-	-
Min Inst. Measured Discharge	-	-	-

Number of Manual Flow Measurements per Year: **N/A**
5 or more, 3 or more, 2 or more, <2 undefined

Missing Period From: (yyyy/mm/dd) **2014/06/15 through 2014/12/31** and Reason:
Sensor failure due to overpressure/water intrusion

Stage Discharge Relationship: Water level only, not applicable

	Curve #	**Start Date**	**End Date**	**Cause for Shift**
2013-2014	-	2013/10/29	2014/12/31	---

Remarks: The pond was subject to significant/greater than anticipated water level fluctuations during/following peak flow storm events. The sensor was overwhelmed and subsequently failed on several occasions during the 2013-2014 measurement period. The sensor and stilling well/deployment tube must be replaced with a higher range sensor and must be accessible from the top of the pond berm. Discharge values out of the pond are not measured and only the water level values are referenced for determining storm responses in the Tomat Creek drainage through the golf course.

Please Refer to Next Page for Data Grades and Declaration

(Adapted from) RISC HYD-06 Station Analysis for the Period: (page 2 of 2)
From: 2013/10/29 (yyyy/mm/dd) To: 2014/12/31 (yyyy/mm/dd)

Boucherie Pond at Two Eagles Golf Course, page 2 of 2 – Data Grades

Item	Data Grade	Item	Data Grade
Instrumentation			
Meter Calibration	-	Meter Field Verification	-
Water Level Gauge	-	Water Level Gauge Accuracy	-
Stream Channel Condition			
Stream Channel Stability	-		
Field Procedure			
# Benchmarks (1)	C	#Verticals in flow measurements w meter	-
#Level Checks per year	B	# Manual Flow measurements per year	-
Data Calculation and Assessment			
Discharge Rating Accuracy	-	Data and Calculations Reviewed for Anomalies	A
		Results are Compared with other Stations	A

Standard Procedure followed for hydrometric Operation: RISC, March 2009
Instruments and Methods appropriate for the field Conditions? **No – sensor range too low**
All Field forms HYD-01 through HYD-06 and field data/calculations reviewed for anomalies? **Yes**
Reviewed Time series Data with Metadata submitted to the Provincial Water Database? **No**
Results were compared with other stations and/or other years for check? **Yes**
Data can be made available to the public? **No/yes**, proprietary data collected paid for by Westbank First Nation, permission required prior to data sharing.

Dated: March 1, 2015

Declaration: I, Gary Van Emmerik, AScT, have reviewed all data and operating information for this hydrometric station. Data grades have been assigned as per standards requirement criteria as defined by the Manual of British Columbia Hydrometric Standards.

Date (yyyy/mm/dd)	Professional Seal/Signature	Designation	Professional/Technological Association
2015/03/01		AScT	ASTTBC

Boucherie Pond at Two Eagles Golf Course
2014 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.070	0.071	0.107	0.105	0.056	0.064	-	-	-	-	-	-	**1**
2	0.075	-0.003	0.102	0.088	0.056	0.062	-	-	-	-	-	-	**2**
3	0.119	-0.152	0.107	0.083	0.054	0.076	-	-	-	-	-	-	**3**
4	0.086	-0.352	0.122	0.091	0.097	0.172	-	-	-	-	-	-	**4**
5	0.081	-0.389	0.167	0.089	0.137	0.146	-	-	-	-	-	-	**5**
6	0.077	-0.194	0.157	0.094	0.102	0.096	-	-	-	-	-	-	**6**
7	0.078	-0.123	0.126	0.085	0.086	0.070	-	-	-	-	-	-	**7**
8	0.102	-0.268	0.121	0.079	0.065	0.065	-	-	-	-	-	-	**8**
9	0.087	-0.265	0.116	0.115	0.065	0.059	-	-	-	-	-	-	**9**
10	0.081	-0.358	0.114	0.112	0.061	0.065	-	-	-	-	-	-	**10**
11	0.139	-0.628	0.115	0.081	0.061	0.088	-	-	-	-	-	-	**11**
12	0.103	-0.303	0.082	0.074	0.063	0.111	-	-	-	-	-	-	**12**
13	0.091	0.106	0.070	0.071	0.070	0.742	-	-	-	-	-	-	**13**
14	0.088	0.085	0.073	0.070	0.061	0.687	-	-	-	-	-	-	**14**
15	0.086	0.073	0.105	0.066	0.059	-	-	-	-	-	-	-	**15**
16	0.084	0.114	0.120	0.143	0.055	-	-	-	-	-	-	-	**16**
17	0.085	0.073	0.119	0.122	0.067	-	-	-	-	-	-	-	**17**
18	0.082	0.068	0.118	0.233	0.062	-	-	-	-	-	-	-	**18**
19	0.081	0.074	0.123	0.096	0.063	-	-	-	-	-	-	-	**19**
20	0.080	0.064	0.123	0.084	0.058	-	-	-	-	-	-	-	**20**
21	0.080	0.063	0.128	0.081	0.059	-	-	-	-	-	-	-	**21**
22	0.079	0.065	0.128	0.075	0.060	-	-	-	-	-	-	-	**22**
23	0.079	0.070	0.130	0.067	0.064	-	-	-	-	-	-	-	**23**
24	0.080	0.075	0.128	0.145	0.093	-	-	-	-	-	-	-	**24**
25	0.085	0.070	0.132	0.144	0.113	-	-	-	-	-	-	-	**25**
26	0.078	0.074	0.137	0.093	0.119	-	-	-	-	-	-	-	**26**
27	0.076	0.076	0.175	0.092	0.115	-	-	-	-	-	-	-	**27**
28	0.077	0.091	0.118	0.087	0.093	-	-	-	-	-	-	-	**28**
29	0.089	-	0.085	0.070	0.070	-	-	-	-	-	-	-	**29**
30	0.103	-	0.103	0.053	0.064	-	-	-	-	-	-	-	**30**
31	0.093	-	0.111	-	0.064	-	-	-	-	-	-	-	**31**
Max	**0.139**	**0.114**	**0.175**	**0.233**	**0.137**	**0.742**							
Min	**0.070**	**-0.628**	**0.070**	**0.053**	**0.054**	**0.059**							
Mean	**0.087**	**-0.062**	**0.118**	**0.096**	**0.075**	**0.179**							

Sensor failure due to flooding/overpressure conditions. Data not available beyond June 14, 2014

Boucherie Pond at Two Eagles Golf Course
2013 Mean Daily Water Level (m) Data confirmed February 2015

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-	-	-	-	-	-	-	-	-	-	0.126	0.212	**1**
2	-	-	-	-	-	-	-	-	-	-	0.708	0.141	**2**
3	-	-	-	-	-	-	-	-	-	-	0.459	0.122	**3**
4	-	-	-	-	-	-	-	-	-	-	0.130	0.117	**4**
5	-	-	-	-	-	-	-	-	-	-	0.140	0.110	**5**
6	-	-	-	-	-	-	-	-	-	-	0.139	0.187	**6**
7	-	-	-	-	-	-	-	-	-	-	0.162	0.533	**7**
8	-	-	-	-	-	-	-	-	-	-	0.185	0.648	**8**
9	-	-	-	-	-	-	-	-	-	-	0.138	0.684	**9**
10	-	-	-	-	-	-	-	-	-	-	0.136	0.669	**10**
11	-	-	-	-	-	-	-	-	-	-	0.126	0.650	**11**
12	-	-	-	-	-	-	-	-	-	-	0.125	-0.322	**12**
13	-	-	-	-	-	-	-	-	-	-	0.126	-1.821	**13**
14	-	-	-	-	-	-	-	-	-	-	0.123	-2.647	**14**
15	-	-	-	-	-	-	-	-	-	-	0.148	-1.357	**15**
16	-	-	-	-	-	-	-	-	-	-	0.176	0.034	**16**
17	-	-	-	-	-	-	-	-	-	-	0.127	0.080	**17**
18	-	-	-	-	-	-	-	-	-	-	0.130	0.091	**18**
19	-	-	-	-	-	-	-	-	-	-	0.247	2.007	**19**
20	-	-	-	-	-	-	-	-	-	-	0.131	3.082	**20**
21	-	-	-	-	-	-	-	-	-	-	0.123	1.729	**21**
22	-	-	-	-	-	-	-	-	-	-	0.123	0.243	**22**
23	-	-	-	-	-	-	-	-	-	-	0.119	0.055	**23**
24	-	-	-	-	-	-	-	-	-	-	0.120	0.095	**24**
25	-	-	-	-	-	-	-	-	-	-	0.120	0.075	**25**
26	-	-	-	-	-	-	-	-	-	-	0.119	0.078	**26**
27	-	-	-	-	-	-	-	-	-	-	0.118	0.090	**27**
28	-	-	-	-	-	-	-	-	-	-	0.117	0.097	**28**
29	-	-	-	-	-	-	-	-	-	0.118	0.118	0.078	**29**
30	-	-	-	-	-	-	-	-	-	0.126	0.126	0.071	**30**
31	-	-	-	-	-	-	-	-	-	0.135	-	0.072	**31**
Max										**0.135**	**0.708**	**3.082**	
Min										**0.118**	**0.117**	**-2.647**	
Mean										**0.126**	**0.166**	**0.190**	

Station established October 29, 2013, prior data not available.
December data may be subject to error due to ice conditions.

up with sediment. In these cases, the structure is essentially an improved streambed control, and the station should be rated with other discharge measurements.

Table 1: Standards requirement criteria.

Data Quality Indicator	**Standard Grade for Discharge Data**					
	Grade A/RS	**Grade A**	**Grade B**	**Grade C**	**Grade E** (Estimated)	**Grade U** (Unknown data quality)
Instrumentation						
Meter calibration (When applicable)	N/A	Meter calibrated and the validity of calibration is confirmed	Meter calibrated and the validity of calibration is confirmed	Meter calibrated and the validity of calibration is confirmed	Meter previously calibrated but validity of calibration is not confirmed	Undefined
Meter field verification	N/A	At least annually	At least annually	Less often than annually	See Notes below	Undefined
Water level gauge type	Recorder	Recorder	Recorder	At least manual gauge	See Notes below	Undefined
Water level gauge reading/sensor accuracy	2 mm or less	2 mm or less	5 mm or less	1 cm or less	See Notes below	Undefined
Stream Channel Condition						
Channel condition or other condition affecting control or discharge measurements using current meter or rated structure	Fixed Control, stable channel, straight reach, measurements are consistent with rating curve, no weeds, boulders or debris	Stable channel, measurements are consistent with rating curve, relatively straight reach, minimal weeds or boulders	Minor hydraulic problems related to channel instability, measurements are not consistent with rating curve, weed growth or occasional boulders	Unstable channel due to erosion or aggradations, variable backwater, turbulence, significant weed growth or boulder bed	See Notes below	Undefined

Table 1. Standards requirement criteria (Contd.)

Data Quality Indicator	Standard Grade for Discharge Data					
	Grade A/RS	**Grade A**	**Grade B**	**Grade C**	**Grade E** (Estimated)	**Grade U** (Unknown data quality)
Field Procedure						
Minimum number of bench marks	3	3	3	1	See Notes below	Undefined
Number of verticals in manual flow measurements when current meter is used	N/A	20 or more and not more than 10% of total flow in each panel	20 or more and not more than 10% of total flow in each panel	10 or more and not more than 20% of total flow in each panel	See Notes below	Undefined
Number of manual flow measurements per year	N/A	5 or more, or at least once when Rating Curve is stable	3 or more, or at least once when Rating Curve is stable	2 or more, or at least once when Rating Curve is stable	See Notes below	Undefined
Number of level checks per year	2 or more, or at least once when Ref. Gauge, Bench Marks are stable	2 or more, or at least once when Ref. Gauge, Bench Marks are stable	1 or more	1 or more	See Notes below	Undefined
Data Calculation & Assessment						
Discharge rating accuracy	<5%	<7%	<15%	<25%	See Notes below	Undefined
Data and calculation reviewed for anomalies	Yes	Yes	Yes	Yes	See Notes below	Undefined
Results are compared with other stations and/or other year for check	Yes	Yes	No	No	See notes below	Undefined

[**Notes:** Hydrometric data should be graded as "E" (i.e., Estimated) when stations were operated using RISC Standards i.e., water level or discharge data could be either Grade A/RS, A, B or C but data were estimated because of instrument anomalies, shift correction, missing data or rating curve extrapolation beyond measured discharge level. Hydrometric data should be graded as "U" (i.e., Unknown data quality), when RISC Hydrometric Standards are not followed for data collection and/or data quality is unknown]

Table 1. Standards requirement criteria (Contd.)

Data Quality Indicator	**Standard Grade for Stage/Water Level Data Only**				
	Grade A	**Grade B**	**Grade C**	**Grade E** (Estimated)	**Grade U** (Unknown data quality)
Instrumentation					
Water level gauge type	Recorder	Recorder	At least manual gauge	See Notes below	Undefined
Water level gauge reading/sensor accuracy	2 mm or less	5 mm or less	1 cm or less	See Notes below	Undefined
Stream Channel Condition					
Channel condition or other condition affecting control or discharge measurements using current meter or rated structure	Stable control, relatively straight reach, minimal weeds or boulders (for water level only stations)	Minor hydraulic problems related to control instability, weed growth or occasional boulders (for water level only stations)	Unstable control due to erosion or aggradations, variable backwater, turbulence, significant weed growth or boulder bed (for water level only stations)	See notes below	Undefined
Field Procedure					
Minimum number of bench marks	3	3	1	See Notes below	Undefined
Number of level checks per year	2 or more, or at least once when Ref. Gauge, Bench Marks are stable	1 or more	1 or more	See Notes below	Undefined
Data Calculation & Assessment					
Data and calculation reviewed for anomalies	Yes	Yes	Yes	See Notes below	Undefined
Results are compared with other stations and/or other year for check	Yes	No	No	See Notes below	Undefined

[**Notes:** Hydrometric data should be graded as "E" (i.e., Estimated) when stations were operated using RISC Standards i.e., water level or discharge data could be either Grade A/RS, A, B or C but data were estimated because of instrument anomalies, shift correction, missing data or rating curve extrapolation beyond measured discharge level. Hydrometric data should be graded as "U" (i.e., Unknown data quality), when RISC Hydrometric Standards are not followed for data collection and/or data quality is unknown]

WFN - IR #9 2013 Daily Precipitation/Rainfall
2013 Daily Rainfall (mm)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.0	0.0	0.2	0.0	0.0	1.4	0.0	1.0	0.0	1.4	0.0	3.4	**1**
2	0.0	0.0	0.0	0.0	0.4	4.0	0.0	3.0	0.0	0.0	0.8	0.0	**2**
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.0	**3**
4	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	4.4	0.0	0.6	0.0	**4**
5	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	5.4	0.0	0.6	0.0	**5**
6	0.0	0.2	8.2	1.0	0.0	0.0	0.0	0.0	10.6	0.0	0.6	0.0	**6**
7	0.2	2.6	0.0	6.2	0.0	0.0	0.0	0.0	3.4	0.0	0.2	0.0	**7**
8	1.8	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	**8**
9	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	**9**
10	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	**10**
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.2	0.0	**11**
12	0.0	0.0	6.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	**12**
13	0.0	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	0.0	0.2	0.0	**13**
14	0.0	0.0	0.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	**14**
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	3.0	0.0	0.2	0.0	**15**
16	0.0	1.0	3.8	0.0	0.0	0.0	0.0	0.2	6.4	0.0	0.2	0.0	**16**
17	0.0	0.0	0.0	0.0	1.4	1.2	2.2	0.0	0.0	0.0	4.0	0.0	**17**
18	0.0	0.0	0.0	1.4	0.0	1.6	0.0	0.0	0.2	0.0	1.4	0.4	**18**
19	0.0	1.4	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.8	0.0	**19**
20	0.0	0.0	0.6	3.4	0.0	16.6	0.0	0.0	0.0	0.0	0.0	0.0	**20**
21	0.0	0.0	0.0	0.0	12.2	0.0	0.0	0.0	2.4	0.0	1.2	0.0	**21**
22	0.0	0.0	0.2	0.0	9.6	1.0	0.0	0.0	0.0	0.0	0.2	0.0	**22**
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.8	0.0	0.2	1.6	**23**
24	0.0	0.0	0.0	0.0	0.0	15.2	0.0	2.0	0.0	0.0	1.2	0.0	**24**
25	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	1.0	0.0	**25**
26	0.0	0.0	0.0	0.0	0.0	2.2	0.0	3.2	1.4	0.2	0.0	0.0	**26**
27	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0	1.6	0.6	0.0	1.6	**27**
28	0.0	0.8	0.0	0.0	1.4	0.0	0.0	0.8	0.4	0.4	0.0	0.0	**28**
29	0.0	-	0.0	0.8	3.2	1.6	0.0	3.2	0.6	0.2	0.0	0.0	**29**
30	2.8	-	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.6	0.0	**30**
31	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	**31**
Max	**8.6**	**2.6**	**8.2**	**8.2**	**12.2**	**16.6**	**2.2**	**3.2**	**10.6**	**1.4**	**4.0**	**3.4**	
Min	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Total	**13.4**	**6.6**	**19.8**	**27.6**	**34.4**	**51.0**	**2.2**	**18.8**	**43.0**	**3.2**	**17.4**	**7.0**	**244.4**

Values during winter months affected by freezing conditions, and may not accurately account for all precipition.

WFN - IR #9 2013 Air Temperature (*C)
2013 Mean Daily Air Temperature (*C)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-3.1	2.9	8.4	13.0	10.6	13.3	27.2	22.8	21.7	8.4	7.5	2.2	**1**
2	-4.2	0.9	9.2	14.3	13.2	13.7	28.6	19.6	24.3	7.7	4.8	-2.4	**2**
3	-3.7	1.6	3.8	12.0	14.2	16.8	25.6	21.6	23.7	9.0	3.7	-7.0	**3**
4	-2.9	2.7	2.9	8.4	16.1	19.4	23.2	21.6	18.1	10.2	2.8	-8.1	**4**
5	-2.6	3.5	3.0	10.9	18.5	21.4	22.5	21.9	18.8	11.5	1.7	-9.8	**5**
6	-1.0	3.5	1.2	9.1	20.2	21.7	22.0	24.9	17.0	13.5	3.1	-10.4	**6**
7	-0.6	1.9	2.9	4.2	22.0	20.5	20.4	25.0	16.7	12.9	2.6	-13.7	**7**
8	1.2	1.1	3.8	6.0	21.5	18.4	22.5	26.3	18.4	9.5	4.3	-11.0	**8**
9	2.8	2.0	4.7	7.8	21.7	16.8	24.7	26.6	20.9	8.6	3.8	-7.5	**9**
10	-1.1	-0.1	5.8	9.6	22.1	17.7	24.5	25.7	21.1	9.3	4.2	-5.0	**10**
11	-4.5	-0.7	5.7	7.7	22.9	17.1	19.2	24.7	21.3	7.1	4.0	-3.5	**11**
12	-7.8	2.1	2.9	4.1	20.1	15.9	17.8	23.9	23.1	9.2	5.5	-0.3	**12**
13	-7.7	5.6	10.5	5.6	15.2	15.9	19.8	24.5	23.8	9.4	7.9	0.3	**13**
14	-4.7	3.1	10.2	5.4	12.6	15.1	21.2	24.6	23.1	7.7	6.0	1.7	**14**
15	-4.8	3.8	11.1	5.3	13.5	18.6	18.3	23.3	22.3	7.8	4.0	2.9	**15**
16	-5.5	5.0	6.9	6.1	15.1	21.1	21.5	22.3	18.5	9.6	2.5	3.6	**16**
17	-3.6	4.9	3.7	7.6	15.7	19.1	19.7	22.9	16.6	8.3	2.1	2.6	**17**
18	-2.7	-0.3	2.0	9.0	14.3	16.1	22.1	21.8	16.1	6.8	5.0	0.9	**18**
19	-3.7	0.8	2.9	11.8	15.6	13.6	25.2	21.2	14.8	7.7	2.0	-4.8	**19**
20	-3.0	-0.1	5.5	7.1	17.1	12.5	26.2	19.8	16.2	9.2	-6.5	-5.0	**20**
21	-4.3	1.7	2.3	6.2	13.2	16.1	27.0	20.4	16.0	9.4	-5.7	-2.4	**21**
22	-6.4	3.1	0.9	8.0	8.5	17.5	26.7	22.5	13.2	7.2	-4.1	-1.0	**22**
23	-2.7	4.3	1.4	9.4	9.9	19.1	27.0	19.4	12.2	6.5	-2.0	1.8	**23**
24	-0.8	3.4	2.7	12.0	12.2	16.1	27.9	19.5	11.0	6.3	0.6	1.2	**24**
25	0.7	3.0	4.3	15.2	14.0	16.3	27.9	20.4	11.0	6.2	1.3	-1.1	**25**
26	0.4	4.3	6.3	15.7	13.7	16.4	26.7	17.7	11.2	5.5	1.2	1.3	**26**
27	-0.5	5.1	9.5	13.9	12.7	16.8	23.8	18.8	9.2	6.6	0.0	1.3	**27**
28	-1.2	3.1	10.0	11.3	14.0	20.7	22.2	18.1	12.3	6.2	1.3	1.6	**28**
29	0.7	-	10.5	5.5	12.7	20.8	22.5	17.7	11.8	4.1	2.6	-0.1	**29**
30	0.5	-	11.1	6.3	14.1	24.6	23.3	19.3	11.0	5.5	1.7	-0.3	**30**
31	2.0	-	12.0	-	15.1	-	24.9	19.1	-	8.9	-	1.2	**31**
Max	**2.8**	**5.6**	**12.0**	**15.7**	**22.9**	**24.6**	**28.6**	**26.6**	**24.3**	**13.5**	**7.9**	**3.6**	
Min	**-7.8**	**-0.7**	**0.9**	**4.1**	**8.5**	**12.5**	**17.8**	**17.7**	**9.2**	**4.1**	**-6.5**	**-13.7**	
Mean	**-2.4**	**2.6**	**5.7**	**9.0**	**15.6**	**17.6**	**23.6**	**21.9**	**17.2**	**8.2**	**2.3**	**-2.3**	

WFN - IR #10 2013 Precipitation Totals (rainfall)
2013 Daily Rainfall (mm)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.4	0.0	1.4	0.4	6.0	**1**
2	0.0	0.0	0.0	0.0	0.6	3.8	0.0	1.4	0.0	1.0	17.4	0.0	**2**
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**3**
4	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	**4**
5	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.2	0.0	2.0	0.0	**5**
6	0.0	0.0	4.8	1.8	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	**6**
7	0.0	1.8	0.0	6.8	0.0	0.0	0.0	0.0	0.8	0.0	4.2	0.0	**7**
8	0.0	0.0	0.0	8.6	0.0	0.0	0.8	0.0	0.6	0.6	3.0	0.0	**8**
9	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	**9**
10	0.0	0.0	0.0	3.6	0.0	0.0	0.0	0.6	0.0	0.0	0.2	0.0	**10**
11	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	**11**
12	0.0	0.0	7.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	**12**
13	0.0	0.0	0.0	0.2	0.4	0.4	0.0	0.0	0.0	0.0	0.2	0.0	**13**
14	0.0	0.0	0.2	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.2	0.0	**14**
15	0.4	0.0	0.0	0.0	0.0	0.0	0.0	4.2	5.2	0.4	3.2	0.0	**15**
16	0.0	0.8	7.8	0.0	0.0	0.0	0.0	0.0	10.8	0.0	1.8	0.0	**16**
17	0.0	0.0	0.0	0.0	0.0	0.6	4.6	0.0	0.0	0.0	0.0	0.0	**17**
18	0.0	0.0	0.2	3.6	0.0	2.2	0.0	0.0	0.0	0.0	4.6	0.0	**18**
19	0.0	0.0	0.0	1.6	0.8	5.0	0.0	0.0	0.0	0.0	3.4	0.0	**19**
20	0.0	0.0	0.8	0.8	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	**20**
21	0.0	0.0	0.0	0.0	18.4	0.0	0.0	-	3.2	0.0	0.0	1.0	**21**
22	0.0	0.6	0.0	0.0	14.2	0.2	0.0	-	0.0	0.0	0.0	0.0	**22**
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.2	0.0	0.0	4.8	**23**
24	0.0	0.0	0.0	0.0	0.0	10.8	0.0	-	0.0	0.0	0.0	0.0	**24**
25	0.0	1.2	0.0	0.0	0.0	0.2	0.0	-	0.0	0.0	0.0	0.0	**25**
26	0.0	0.0	0.0	0.0	0.0	3.4	0.0	-	1.4	0.6	0.0	0.8	**26**
27	0.6	0.0	0.0	0.0	7.6	0.0	0.0	-	1.8	1.8	0.0	1.4	**27**
28	0.0	0.8	0.0	0.0	3.8	0.0	0.0	-	2.2	0.0	0.0	0.0	**28**
29	0.0	-	0.0	1.0	4.8	1.4	0.0	5.0	1.0	0.0	0.8	0.2	**29**
30	3.0	-	0.0	0.0	0.2	0.0	0.0	0.0	2.0	0.0	3.8	0.2	**30**
31	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	**31**
Max	**14.8**	**1.8**	**7.8**	**8.6**	**18.4**	**16.2**	**4.6**	**5.0**	**10.8**	**1.8**	**17.4**	**6.0**	
Min	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Total	**18.8**	**5.2**	**21.8**	**34.2**	**50.8**	**47.2**	**5.4**	**11.8**	**46.0**	**6.0**	**45.8**	**15.4**	**308.4**

Data missing from August 21-28, 2013 due to power failure.
Values during winter months affected by freezing conditions, and may not accurately account for all precipition.

WFN - IR #10 2013 Air Temperature (*C)
2013 Mean Daily Air Temperature (*C)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-2.8	2.2	8.5	12.1	9.8	13.4	27.2	23.0	21.0	8.7	6.7	2.5	**1**
2	-3.6	0.4	8.9	13.9	12.4	14.0	28.7	19.9	23.5	7.9	4.9	-1.6	**2**
3	-3.7	1.5	4.1	11.0	14.4	16.6	25.7	21.9	23.2	8.9	3.7	-6.1	**3**
4	-2.5	3.2	2.4	7.8	15.7	19.1	24.0	21.5	18.4	9.7	2.9	-7.4	**4**
5	-2.5	3.3	3.3	10.1	17.8	21.5	22.4	21.9	18.9	11.6	1.8	-9.4	**5**
6	-0.8	3.3	1.2	8.8	19.7	21.6	22.1	24.6	17.2	12.5	3.6	-9.9	**6**
7	-0.7	1.8	3.0	4.4	21.1	21.2	20.6	24.4	16.9	12.5	2.6	-12.9	**7**
8	0.2	1.0	3.6	6.3	20.0	17.8	22.0	25.7	18.3	9.5	4.3	-10.8	**8**
9	1.9	1.7	4.0	7.7	20.1	17.3	24.7	26.4	20.2	8.1	3.8	-7.1	**9**
10	-0.8	-0.6	5.6	9.3	21.4	17.6	24.7	24.9	20.7	8.9	4.3	-4.6	**10**
11	-4.1	-1.0	5.7	7.6	22.4	17.1	20.2	24.0	20.9	6.8	4.4	-3.4	**11**
12	-7.9	2.4	2.0	4.0	20.2	16.4	17.9	23.7	22.5	9.1	5.0	0.1	**12**
13	-7.7	4.4	9.5	5.9	15.1	16.4	19.5	24.2	22.9	9.0	8.3	0.6	**13**
14	-4.3	2.5	8.0	5.3	13.3	15.1	21.2	24.2	22.5	6.9	5.7	2.2	**14**
15	-4.3	3.5	10.8	5.5	13.7	18.3	18.9	23.3	22.0	7.3	3.6	3.4	**15**
16	-4.9	4.6	6.8	6.1	15.1	20.8	21.5	22.0	19.0	9.4	2.6	2.4	**16**
17	-3.2	4.9	3.9	8.0	16.0	19.4	19.5	23.1	16.8	8.0	1.8	3.0	**17**
18	-2.3	-0.4	2.2	9.1	14.9	16.6	21.9	22.1	16.6	6.1	4.5	1.1	**18**
19	-3.3	1.0	2.6	10.3	15.8	13.9	24.9	21.0	14.2	7.0	2.0	-4.7	**19**
20	-2.9	-0.4	4.8	7.2	17.0	12.7	26.5	19.8	16.1	8.6	-6.2	-5.0	**20**
21	-3.7	1.6	2.7	6.5	13.2	16.2	26.7	-	16.1	8.5	-5.8	-2.2	**21**
22	-5.9	3.4	0.8	7.7	8.8	17.9	27.0	-	13.3	7.1	-4.3	-0.9	**22**
23	-2.6	4.5	1.1	9.3	10.2	19.5	26.2	-	12.7	6.8	-2.6	1.7	**23**
24	-0.2	3.2	2.1	11.8	12.0	16.1	27.4	-	11.1	6.6	0.2	0.8	**24**
25	0.7	2.5	3.9	15.4	14.8	17.0	27.6	-	10.9	6.4	0.9	-0.9	**25**
26	0.5	4.5	5.8	15.2	13.9	16.7	26.7	-	11.2	5.7	0.9	1.7	**26**
27	-0.1	5.2	9.0	13.9	12.3	16.9	24.3	-	8.9	7.0	0.0	1.5	**27**
28	-0.9	2.8	9.8	11.4	14.5	20.4	21.9	-	11.7	6.4	1.2	1.0	**28**
29	0.3	-	10.3	6.1	12.7	20.4	22.0	17.5	11.8	3.3	2.7	-0.2	**29**
30	0.6	-	10.2	6.8	14.8	24.5	23.0	19.5	11.3	5.1	2.1	0.3	**30**
31	1.5	-	10.9	-	15.0	-	24.7	18.8	-	8.3	-	1.2	**31**
Max	**1.9**	**5.2**	**10.9**	**15.4**	**22.4**	**24.5**	**28.7**	**26.4**	**23.5**	**12.5**	**8.3**	**3.4**	
Min	**-7.9**	**-1.0**	**0.8**	**4.0**	**8.8**	**12.7**	**17.9**	**17.5**	**8.9**	**3.3**	**-6.2**	**-12.9**	
Mean	**-2.3**	**2.4**	**5.4**	**8.8**	**15.4**	**17.7**	**23.6**	**22.5**	**17.0**	**8.0**	**2.2**	**-2.0**	

Data missing from August 21-28, 2013 due to power failure.

WFN - IR #9 2014 Daily Precipitation/Rainfall
2014 Daily Rainfall (mm)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1**
2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	**2**
3	1.8	0.0	0.0	0.0	0.2	7.0	0.0	0.0	0.0	0.6	0.0	0.0	**3**
4	0.0	0.0	1.0	0.0	6.4	0.8	0.0	0.0	0.0	0.2	0.2	0.0	**4**
5	0.0	0.0	5.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**5**
6	0.0	0.0	1.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	7.2	**6**
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**7**
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**8**
9	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**9**
10	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	**10**
11	1.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	**11**
12	0.0	1.8	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	**12**
13	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.6	0.0	0.2	0.0	0.0	**13**
14	0.0	0.2	0.0	0.0	0.0	4.0	0.0	3.4	0.0	1.0	0.0	0.0	**14**
15	0.0	2.0	0.8	2.6	0.0	1.6	0.0	0.0	0.0	0.6	0.0	0.0	**15**
16	0.0	2.6	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	**16**
17	0.0	0.0	0.0	8.2	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	**17**
18	0.0	1.0	0.0	1.4	0.0	0.0	0.0	0.0	0.6	0.2	0.0	1.4	**18**
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	**19**
20	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.8	0.0	5.6	**20**
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	1.8	**21**
22	0.0	0.0	0.2	1.2	0.0	0.0	0.0	1.2	1.2	1.6	0.6	0.0	**22**
23	0.0	0.0	0.0	0.0	0.0	0.0	12.4	0.0	4.2	0.0	0.4	0.0	**23**
24	0.0	0.0	0.0	6.6	0.0	0.2	9.4	0.0	3.0	0.0	0.0	0.0	**24**
25	0.0	0.2	0.2	0.2	0.0	1.6	1.8	0.0	0.4	0.4	4.0	0.0	**25**
26	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	1.4	0.0	15.8	0.0	**26**
27	0.0	3.4	0.0	0.0	0.0	0.8	0.0	0.0	1.0	0.0	4.0	0.0	**27**
28	0.0	0.0	0.2	0.0	0.0	0.0	0.0	1.0	0.4	0.4	0.4	0.6	**28**
29	0.0	-	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**29**
30	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**30**
31	0.0	-	0.0	-	0.0	-	0.0	0.0	-	6.6	-	0.0	**31**
Max	**1.8**	**3.4**	**5.0**	**8.2**	**6.4**	**10.8**	**12.4**	**3.4**	**4.2**	**6.6**	**15.8**	**7.2**	
Min	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Total	**3.0**	**13.8**	**9.0**	**20.2**	**9.4**	**29.2**	**28.8**	**6.2**	**16.4**	**12.6**	**28.6**	**21.6**	**198.8**

Values during winter months affected by freezing conditions, and may not accurately account for all precipition.

WFN - IR #9 2014 Air Temperature (*C)
2014 Mean Daily Air Temperature (*C)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-1.0	-8.2	-5.2	6.7	17.6	19.8	23.3	26.8	18.1	13.6	7.6	-9.0	**1**
2	1.9	-5.8	-5.9	7.6	19.3	19.5	25.1	27.1	15.4	11.4	7.0	-6.9	**2**
3	2.3	-6.9	-1.7	8.5	12.7	16.7	23.3	25.0	14.8	9.9	8.7	-6.6	**3**
4	0.4	-9.0	2.2	9.8	8.2	16.8	21.0	25.8	16.9	12.2	11.3	-5.4	**4**
5	-3.5	-11.8	1.6	8.6	10.5	16.4	22.7	27.4	18.2	13.7	8.1	-3.0	**5**
6	-4.4	-12.6	3.6	10.7	11.6	17.0	21.6	26.4	19.7	14.7	10.9	1.3	**6**
7	-3.0	-10.9	7.8	11.1	12.2	18.1	22.5	24.7	21.9	16.7	11.5	2.3	**7**
8	-0.7	-11.2	8.4	11.0	13.1	20.0	26.3	23.9	20.4	15.6	8.3	2.7	**8**
9	0.6	-9.0	9.9	9.7	11.8	18.4	27.0	23.1	14.0	14.0	8.0	6.2	**9**
10	2.5	-4.6	7.2	10.2	10.9	15.2	24.9	24.5	12.0	15.1	4.7	8.3	**10**
11	5.7	-0.9	6.7	9.6	12.2	18.2	25.4	26.3	12.0	14.7	-0.5	6.1	**11**
12	3.9	5.2	7.1	9.4	14.3	18.5	27.6	24.0	13.9	13.3	-3.9	6.7	**12**
13	8.5	5.9	8.6	9.7	16.3	12.6	29.5	24.8	16.3	12.3	-4.8	2.7	**13**
14	4.4	4.6	7.8	11.0	19.2	16.1	26.0	20.3	17.1	14.3	-4.8	0.8	**14**
15	4.2	2.2	6.0	9.1	20.1	16.0	28.1	19.7	18.6	11.1	-5.0	-0.5	**15**
16	-1.1	3.8	9.0	8.1	18.4	12.1	30.1	21.3	19.4	10.9	-4.9	-1.3	**16**
17	-1.9	4.0	6.0	8.9	15.5	16.7	28.2	22.7	18.1	9.8	-4.1	0.3	**17**
18	-0.4	2.5	4.9	8.5	12.8	20.2	24.9	24.1	17.4	12.8	-1.9	2.4	**18**
19	0.3	2.9	5.3	6.8	15.9	19.1	23.6	23.3	20.3	13.8	-0.3	3.0	**19**
20	-0.9	3.3	3.5	11.7	17.5	17.9	21.2	21.1	18.6	12.6	3.2	2.4	**20**
21	-1.3	0.9	2.2	10.6	18.9	17.5	20.7	19.2	19.6	13.4	2.3	6.5	**21**
22	-0.3	-3.2	-0.7	8.5	20.5	21.4	20.2	17.5	16.9	11.4	4.5	5.2	**22**
23	1.4	-3.7	2.9	8.3	18.4	22.8	17.7	19.7	16.3	11.4	3.9	3.2	**23**
24	1.2	-5.9	2.9	6.5	16.9	17.6	14.0	20.1	16.8	8.3	3.6	2.1	**24**
25	-0.1	-6.3	3.9	7.3	12.6	20.7	18.7	19.8	14.9	8.1	2.6	1.8	**25**
26	0.1	-4.7	6.5	9.4	12.8	20.3	21.1	24.5	13.9	10.1	1.7	0.9	**26**
27	1.3	-0.5	5.2	8.4	13.6	17.6	24.1	26.0	14.6	6.7	6.0	-0.1	**27**
28	0.8	1.1	4.3	10.4	13.4	19.1	26.3	20.0	14.6	7.6	-0.2	0.1	**28**
29	-0.6	-	6.8	12.5	13.7	17.2	27.9	17.4	15.3	10.7	-13.3	-5.1	**29**
30	-1.3	-	7.2	15.1	14.6	20.2	28.0	18.3	12.7	9.4	-13.6	-10.5	**30**
31	-6.0	-	7.3	-	17.7	-	27.2	15.9	-	9.5	-	-9.2	**31**
Max	**8.5**	**5.9**	**9.9**	**15.1**	**20.5**	**22.8**	**30.1**	**27.4**	**21.9**	**16.7**	**11.5**	**8.3**	
Min	**-6.0**	**-12.6**	**-5.9**	**6.5**	**8.2**	**12.1**	**14.0**	**15.9**	**12.0**	**6.7**	**-13.6**	**-10.5**	
Mean	**0.4**	**-2.8**	**4.6**	**9.5**	**14.9**	**18.0**	**24.1**	**22.6**	**16.6**	**11.9**	**1.9**	**0.2**	

WFN - IR #10 2014 Precipitation Totals (rainfall)
2014 Daily Rainfall (mm)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1**
2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	**2**
3	0.6	0.0	2.2	0.0	0.2	9.8	0.0	0.0	0.0	1.6	0.4	0.0	**3**
4	0.0	0.0	1.6	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.6	0.0	**4**
5	0.0	0.0	4.6	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	**5**
6	0.0	0.0	1.4	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	8.6	**6**
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**7**
8	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0	0.8	**8**
9	0.8	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	**9**
10	0.0	0.2	0.0	0.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4	**10**
11	3.0	4.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.0	**11**
12	0.4	1.8	0.0	0.4	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.2	**12**
13	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.4	0.0	0.0	0.0	0.0	**13**
14	0.0	0.6	0.4	0.0	0.0	0.0	0.0	2.4	0.0	0.2	0.0	0.0	**14**
15	0.0	0.6	1.2	1.2	0.0	1.8	0.0	0.0	0.0	0.8	0.0	0.0	**15**
16	0.0	3.8	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	**16**
17	0.0	0.2	0.0	13.0	0.0	0.2	0.0	0.0	0.0	0.8	0.0	0.0	**17**
18	0.0	1.4	0.0	0.2	1.4	0.0	0.0	0.0	1.6	0.4	0.0	3.0	**18**
19	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	**19**
20	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.0	1.2	0.0	7.8	**20**
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.6	**21**
22	0.0	0.0	0.8	1.6	0.0	0.0	0.0	0.4	0.6	1.6	0.6	0.0	**22**
23	0.0	0.0	0.0	0.0	0.6	0.0	26.0	0.0	11.2	0.6	1.0	0.4	**23**
24	0.0	0.0	0.0	8.2	0.0	1.2	8.0	0.0	5.8	0.0	0.4	0.0	**24**
25	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	3.8	0.2	5.2	0.0	**25**
26	0.0	0.4	0.0	0.4	1.2	0.0	0.0	0.0	0.4	0.6	11.0	0.0	**26**
27	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	**27**
28	0.0	0.0	0.2	0.0	0.0	0.0	0.0	2.6	0.0	0.4	0.2	4.2	**28**
29	0.0	-	0.8	0.0	1.2	1.4	0.0	0.2	0.0	0.0	0.0	0.0	**29**
30	0.0	-	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**30**
31	0.0	-	0.0	-	0.0	-	0.0	0.0	-	4.4	-	0.0	**31**
Max	**3.0**	**4.6**	**4.6**	**13.0**	**5.8**	**20.0**	**26.0**	**2.6**	**11.2**	**4.4**	**11.0**	**8.6**	
Min	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Total	**4.8**	**13.6**	**14.6**	**25.4**	**15.4**	**40.8**	**35.4**	**6.2**	**29.6**	**13.0**	**29.2**	**31.6**	**259.6**

Values during winter months affected by freezing conditions, and may not accurately account for all precipition.

WFN - IR #10 2014 Air Temperature (*C)
2014 Mean Daily Air Temperature (*C)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	-0.9	-8.2	-4.6	6.2	16.7	19.7	23.3	26.5	18.2	13.3	7.7	-9.1	**1**
2	2.3	-5.6	-5.5	7.2	18.5	19.7	24.9	26.6	15.5	11.7	6.4	-6.8	**2**
3	2.5	-6.4	-1.4	8.1	12.0	16.4	24.0	24.4	15.0	9.7	8.2	-6.7	**3**
4	-0.2	-8.6	2.2	9.5	8.1	17.2	21.2	25.2	16.4	11.8	10.4	-5.3	**4**
5	-4.0	-11.2	1.1	8.3	10.6	16.4	23.3	26.4	17.4	12.9	7.8	-3.1	**5**
6	-4.4	-13.0	2.3	10.3	11.5	16.7	22.0	26.6	19.2	14.4	10.9	1.1	**6**
7	-3.0	-11.0	5.4	10.0	11.4	17.7	22.3	24.7	21.7	16.0	11.4	2.4	**7**
8	-0.5	-11.0	6.5	10.6	13.3	20.2	25.7	24.3	20.6	14.9	8.3	2.0	**8**
9	1.2	-9.2	9.8	10.6	12.0	18.5	27.3	22.9	14.3	13.0	8.3	5.8	**9**
10	2.5	-4.9	6.3	10.4	10.5	16.0	24.9	24.1	12.6	14.2	5.1	6.5	**10**
11	5.1	-0.6	6.0	8.1	11.9	17.9	25.1	26.0	11.8	14.4	-0.4	5.9	**11**
12	3.2	4.4	6.7	8.6	14.0	18.4	27.2	23.2	13.3	13.2	-3.8	4.7	**12**
13	8.4	5.3	8.5	8.4	15.3	13.1	28.6	24.4	15.7	11.1	-5.2	1.6	**13**
14	3.3	3.6	7.1	10.6	18.6	16.6	25.4	20.2	16.2	14.5	-4.4	0.7	**14**
15	3.1	1.6	4.5	9.5	19.2	16.2	27.1	19.8	17.8	11.3	-4.7	-0.3	**15**
16	-1.0	3.9	8.7	8.0	18.0	12.7	28.6	21.0	18.7	10.6	-5.1	-1.3	**16**
17	-1.9	3.8	6.3	8.5	16.2	17.2	28.8	22.2	17.4	9.7	-4.5	0.3	**17**
18	-0.1	1.9	4.5	8.8	12.3	20.2	25.6	23.4	17.3	12.3	-2.0	1.9	**18**
19	0.4	3.1	4.8	6.2	15.6	19.1	23.6	22.7	20.8	12.7	-0.4	2.8	**19**
20	-0.9	2.7	3.9	12.1	17.5	18.2	21.6	21.0	18.1	11.8	3.0	1.8	**20**
21	-1.1	0.8	1.9	9.6	18.8	17.5	20.7	19.1	19.0	13.3	2.3	5.1	**21**
22	0.0	-3.4	-0.7	8.2	20.2	21.1	20.5	17.7	16.3	11.4	4.5	4.6	**22**
23	1.4	-3.3	2.6	8.1	18.2	22.4	17.8	19.9	16.0	10.3	3.7	2.5	**23**
24	1.2	-5.3	2.5	6.1	17.5	17.9	14.1	20.6	16.5	7.8	3.2	1.9	**24**
25	0.4	-6.6	3.4	7.0	12.7	20.4	18.8	19.2	14.7	8.2	2.7	1.2	**25**
26	0.4	-4.8	5.8	9.5	13.2	20.8	21.2	24.0	13.8	9.9	1.3	0.4	**26**
27	1.5	-0.7	4.9	8.8	13.3	18.0	23.5	25.9	14.5	6.6	4.7	-0.1	**27**
28	0.6	0.9	3.7	10.7	13.0	20.0	25.4	19.7	14.1	7.3	-0.1	0.0	**28**
29	-0.4	-	6.5	12.2	13.7	17.2	26.7	17.3	15.1	10.2	-12.7	-3.9	**29**
30	-1.1	-	7.4	14.6	14.7	20.0	26.5	18.2	13.2	9.4	-13.4	-9.8	**30**
31	-5.7	-	6.9	-	17.4	-	25.8	16.0	-	9.3	-	-8.9	**31**
Max	**8.4**	**5.3**	**9.8**	**14.6**	**20.2**	**22.4**	**28.8**	**26.6**	**21.7**	**16.0**	**11.4**	**6.5**	
Min	**-5.7**	**-13.0**	**-5.5**	**6.1**	**8.1**	**12.7**	**14.1**	**16.0**	**11.8**	**6.6**	**-13.4**	**-9.8**	
Mean	**0.4**	**-2.9**	**4.1**	**9.2**	**14.7**	**18.1**	**23.9**	**22.4**	**16.4**	**11.5**	**1.8**	**-0.1**	

IR9 5 mm Storms

DateTime	Storm Period	Duration (hours)	Intensity (mm/hr)	Total Rainfall (mm)
01-Nov-13	23:45-08:15	8.5	0.00	0
02-Nov-13	10:00-14:45	4.75	0.04	0.2
18-Nov-13	21:15-05:00	7.75	0.03	0.2
17-Apr-14	20:30-01:00	3.5	1.77	6.2
24-Apr-14	03:15-07:30	4.25	1.22	5.2
03-Jun-14	19:00-01:45	6.75	0.95	6.4
12-Jun-14	23:15-10:15	11	0.62	6.8
13-Jun-14	16:30-20:00	3.5	0.29	1
23-Jul-14	14:30-03:45	13.25	1.13	15
24-Jul-14	04:15-23:15	19	0.36	6.8
02-Sep-14	16:15-23:00	6.75	0.62	4.2
23-Sep-14	01:45-07:45	6	0.70	4.2
31-Oct-14	00:30-09:15	8.75	0.57	5
21-Nov-14	16:15-21:15	5	0.64	3.2
26-Nov-14	13:15-04:30	15.25	1.29	19.6
06-Dec-14	11:15-14:15	3	2.40	7.2

IR10 5 mm Storms

DateTime	Storm Period	Duration (hours)	Intensity (mm/hr)	Total Rainfall (mm)
01-Nov-13	23:45-08:15	8.5	1.44	12.2
02-Nov-13	10:00-14:45	4.75	1.14	5.4
18-Nov-13	21:15-05:00	7.75	0.65	5
17-Apr-14	18:45-23:45	5	1.88	9.4
24-Apr-14	03:15-07:30	4.25	0.89	3.8
03-Jun-14	19:00-20:15	1.25	4.80	6
12-Jun-14	23:15-10:15	11	1.35	14.8
13-Jun-14	16:30-20:00	3.5	1.60	5.6
23-Jul-14	14:30-01:30	11	2.93	32.2
24-Jul-14	04:15-23:15	19	0.06	1.2
02-Sep-14	16:15-23:00	6.75	0.89	6
23-Sep-14	01:45-02:45	1	10.80	10.8
31-Oct-14	00:30-09:15	8.75	0.30	2.6
21-Nov-14	16:15-21:15	5	1.96	9.8
26-Nov-14	16:45-21:00	4.25	2.59	11
06-Dec-14	13:30-15:45	2.25	3.64	8.2

Pre to Post Storm Peak Flow Responses

(Storms defined as events when a minimum 5 mm rainfall occurs at either IR9 or IR10 weather station over a consecutive/nearly consecutive period)

Stream/Pond Level Responses Only (meters water depth)

Date	IR9	IR10	Tomat Cr. At Elk Rd. Level (m)		Tomat Cr. Above Pond Level (m)		Boucheire Pond Level (m)	
	Rain (mm)	Rain (mm)	*Pre-Storm*	*Post Storm Peak*	*Pre-Storm*	*Post Storm Peak*	*Pre-Storm*	*Post Storm Peak*
01-Nov-13	0.0	12.2	0.175	0.425	0.111	0.260	0.126	0.611
			Change (m)	**0.250**	**Change (m)**	**0.149**	**Change (m)**	**0.485**
02-Nov-13	0.2	5.4	0.257	0.423	0.204	0.239	0.756	1.165
			Change (m)	**0.166**	**Change (m)**	**0.035**	**Change (m)**	**0.409**
18-Nov-13	0.2	5.0	0.233	0.366	0.153	0.209	0.166	0.374
			Change (m)	**0.133**	**Change (m)**	**0.056**	**Change (m)**	**0.208**
17-Apr-14	6.2	9.4	0.195	0.451	0.105	0.238	0.097	0.404
			Change (m)	**0.256**	**Change (m)**	**0.133**	**Change (m)**	**0.307**
24-Apr-14	5.2	3.8	0.180	0.373	0.111	0.154	0.078	0.158
			Change (m)	**0.193**	**Change (m)**	**0.043**	**Change (m)**	**0.080**
03-Jun-14	6.4	6.0	0.189	0.402	0.104	0.172	0.082	0.194
			Change (m)	**0.213**	**Change (m)**	**0.068**	**Change (m)**	**0.112**
12-Jun-14	6.8	14.8	0.187	0.489	0.115	0.283	0.116	1.175
			Change (m)	**0.302**	**Change (m)**	**0.168**	**Change (m)**	**1.059**
13-Jun-14	9.0	5.6	0.245	0.488	0.185	0.267	1.175	1.589
			Change (m)	**0.243**	**Change (m)**	**0.082**	**Change (m)**	**0.414**
23-Jul-14	15.0	32.2	0.201	0.469	0.087	0.343	n/a	n/a
			Change (m)	**0.268**	**Change (m)**	**0.256**	**Change (m)**	n/a
24-Jul-14	6.8	1.2	0.301	0.322	0.257	0.343	n/a	n/a
			Change (m)	**0.021**	**Change (m)**	**0.086**	**Change (m)**	n/a
02-Sep-14	4.2	6.0	0.214	0.387	0.092	0.140	n/a	n/a
			Change (m)	**0.173**	**Change (m)**	**0.048**	**Change (m)**	n/a
23-Sep-14	4.2	10.8	0.224	0.448	0.141	0.193	n/a	n/a
			Change (m)	**0.224**	**Change (m)**	**0.052**	**Change (m)**	n/a
31-Oct-14	5.0	2.6	0.234	0.419	0.117	0.192	n/a	n/a
			Change (m)	**0.185**	**Change (m)**	**0.075**	**Change (m)**	n/a
21-Nov-14	3.2	9.8	0.212	0.341	0.113	0.156	n/a	n/a
			Change (m)	**0.129**	**Change (m)**	**0.043**	**Change (m)**	n/a
26-Nov-14	19.6	11.0	0.296	0.306	n/a	n/a	n/a	n/a
			Change (m)	**0.010**	**Change (m)**	n/a	**Change (m)**	n/a
06-Dec-14	7.2	8.2	0.317	0.317	n/a	n/a	n/a	n/a
			Change (m)	**0.000**	**Change (m)**	n/a	**Change (m)**	n/a

Pre to Post Storm Peak Flow Responses

(Storms defined as events when a minimum 5 mm rainfall occurs at either IR9 or IR10 weather station over a consecutive/nearly consecutive period)

Stream Responses (m^3/s) Pond Level Responses (meters water depth)

Date	IR9 Rain (mm)	IR10 Rain (mm)	Tomat Cr. At Elk Rd. Q (m^3/s)		Tomat Cr. Above Pond Q (m^3/s)		Boucheire Pond Level (m)	
			Pre-Storm	***Post Storm Peak***	***Pre-Storm***	***Post Storm Peak***	***Pre-Storm***	***Post Storm Peak***
01-Nov-13	0.0	12.2	0.002	0.094	0.004	0.089	0.126	0.611
			Change (m^3/s)	**0.092**	**Change (m^3/s)**	**0.085**	**Change (m)**	**0.485**
02-Nov-13	0.2	5.4	0.013	0.093	0.056	0.077	0.756	1.165
			Change (m^3/s)	**0.080**	**Change (m^3/s)**	**0.021**	**Change (m)**	**0.409**
18-Nov-13	0.2	5.0	0.008	0.061	0.025	0.059	0.166	0.374
			Change (m^3/s)	**0.053**	**Change (m^3/s)**	**0.033**	**Change (m)**	**0.208**
17-Apr-14	6.2	9.4	0.004	0.109	0.003	0.076	0.097	0.404
			Change (m^3/s)	**0.105**	**Change (m^3/s)**	**0.074**	**Change (m)**	**0.307**
24-Apr-14	5.2	3.8	0.002	0.065	0.004	0.026	0.078	0.158
			Change (m^3/s)	**0.063**	**Change (m^3/s)**	**0.022**	**Change (m)**	**0.080**
03-Jun-14	6.4	6.0	0.003	0.081	0.002	0.037	0.082	0.194
			Change (m^3/s)	**0.078**	**Change (m^3/s)**	**0.034**	**Change (m)**	**0.112**
12-Jun-14	6.8	14.8	0.003	0.130	0.005	0.103	0.116	1.175
			Change (m^3/s)	**0.128**	**Change (m^3/s)**	**0.098**	**Change (m)**	**1.059**
13-Jun-14	9.0	5.6	0.010	0.130	0.044	0.093	1.175	1.589
			Change (m^3/s)	**0.120**	**Change (m^3/s)**	**0.049**	**Change (m)**	**0.414**
23-Jul-14	15.0	32.2	0.004	0.119	0.001	0.139	n/a	n/a
			Change (m^3/s)	**0.115**	**Change (m^3/s)**	**0.138**	**Change (m)**	n/a
24-Jul-14	6.8	1.2	0.024	0.036	0.087	0.139	n/a	n/a
			Change (m^3/s)	**0.012**	**Change (m^3/s)**	**0.051**	**Change (m)**	n/a
02-Sep-14	4.2	6.0	0.006	0.073	0.001	0.018	n/a	n/a
			Change (m^3/s)	**0.067**	**Change (m^3/s)**	**0.016**	**Change (m)**	n/a
23-Sep-14	4.2	10.8	0.007	0.107	0.018	0.049	n/a	n/a
			Change (m^3/s)	**0.100**	**Change (m^3/s)**	**0.031**	**Change (m)**	n/a
31-Oct-14	5.0	2.6	0.008	0.091	0.005	0.049	n/a	n/a
			Change (m^3/s)	**0.083**	**Change (m^3/s)**	**0.044**	**Change (m)**	n/a
21-Nov-14	3.2	9.8	0.006	0.047	0.004	0.027	n/a	n/a
			Change (m^3/s)	**0.041**	**Change (m^3/s)**	**0.023**	**Change (m)**	n/a
26-Nov-14	19.6	11.0	0.022	0.027	n/a	n/a	n/a	n/a
			Change (m^3/s)	**0.004**	**Change (m^3/s)**	n/a	**Change (m)**	n/a
06-Dec-14	7.2	8.2	0.033	0.033	n/a	n/a	n/a	n/a
			Change (m^3/s)	**0.000**	**Change (m^3/s)**	n/a	**Change (m)**	n/a

Pre to Post Storm Peak Flow Responses

(Storms defined as events when a minimum 5 mm rainfall occurs at either IR9 or IR10 weather station over a consecutive/nearly consecutive period)

Stream Responses (m^3/s) Pond Level Responses (meters water depth)

Date	IR9 Rain (mm)	IR10 Rain (mm)	Tomat Cr. At Elk Rd. Q (m^3/s)		Tomat Cr. Above Pond Q (m^3/s)		Boucheire Pond Level (m)	
			Pre-Storm	***Post Storm Peak***	***Pre-Storm***	***Post Storm Peak***	***Pre-Storm***	***Post Storm Peak***
01-Nov-13	0.0	12.2	0.0018	0.0941	0.0038	0.0892	0.1260	0.6110
			Change (%)	**5128%**	**Change (%)**	**2247%**	**Change (%)**	**385%**
02-Nov-13	0.2	5.4	0.0128	0.0930	0.0558	0.0766	0.7560	1.1650
			Change (%)	**627%**	**Change (%)**	**37%**	**Change (%)**	**54%**
18-Nov-13	0.2	5.0	0.0078	0.0607	0.0254	0.0588	0.1660	0.3740
			Change (%)	**678%**	**Change (%)**	**131%**	**Change (%)**	**125%**
17-Apr-14	6.2	9.4	0.0036	0.1089	0.0025	0.0760	0.0970	0.4040
			Change (%)	**2925%**	**Change (%)**	**2940%**	**Change (%)**	**316%**
24-Apr-14	5.2	3.8	0.0020	0.0647	0.0038	0.0260	0.0780	0.1580
			Change (%)	**3135%**	**Change (%)**	**584%**	**Change (%)**	**103%**
03-Jun-14	6.4	6.0	0.0030	0.0811	0.0023	0.0367	0.0820	0.1940
			Change (%)	**2603%**	**Change (%)**	**1496%**	**Change (%)**	**137%**
12-Jun-14	6.8	14.8	0.0028	0.1304	0.0046	0.1029	0.1160	1.1750
			Change (%)	**4557%**	**Change (%)**	**2137%**	**Change (%)**	**913%**
13-Jun-14	9.0	5.6	0.0098	0.1298	0.0444	0.0933	1.1750	1.5890
			Change (%)	**1224%**	**Change (%)**	**110%**	**Change (%)**	**35%**
23-Jul-14	15.0	32.2	0.0043	0.1190	0.0009	0.1387	n/a	n/a
			Change (%)	**2667%**	**Change (%)**	**15311%**	**Change (%)**	n/a
24-Jul-14	6.8	1.2	0.0240	0.0358	0.0874	0.1387	n/a	n/a
			Change (%)	**49%**	**Change (%)**	**59%**	**Change (%)**	n/a
02-Sep-14	4.2	6.0	0.0057	0.0726	0.0012	0.0176	n/a	n/a
			Change (%)	**1174%**	**Change (%)**	**1367%**	**Change (%)**	n/a
23-Sep-14	4.2	10.8	0.0068	0.1072	0.0182	0.0492	n/a	n/a
			Change (%)	**1476%**	**Change (%)**	**170%**	**Change (%)**	n/a
31-Oct-14	5.0	2.6	0.0079	0.0907	0.0051	0.0486	n/a	n/a
			Change (%)	**1048%**	**Change (%)**	**853%**	**Change (%)**	n/a
21-Nov-14	3.2	9.8	0.0055	0.0466	0.0042	0.0272	n/a	n/a
			Change (%)	**747%**	**Change (%)**	**548%**	**Change (%)**	n/a
26-Nov-14	19.6	11.0	0.0224	0.0268	n/a	n/a	n/a	n/a
			Change (%)	**20%**	**Change (%)**	n/a	**Change (%)**	n/a
06-Dec-14	7.2	8.2	0.0330	0.0330	n/a	n/a	n/a	n/a
			Change (%)	**0%**	**Change (%)**	n/a	**Change (%)**	n/a