2013

Osoyoos

Canada's warmest welcome ®*

WATER

2013 Annual Report

Submitted by:

Town of Osoyoos
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Prepared by:

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February 2014

Town of Osoyoos Water Annual Report

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System Description

The Town of Osoyoos has a Class II Water Distribution System. The source of water comes from five different wells with three reservoirs. The water is untreated with one well equipped with a standby chlorinator if necessary. A cross connection program is in effect. Attached to the report is a copy of the up to date cross connection program that includes new services and existing facility survey status.

Operator Certification

The Town of Osoyoos has **five certified** operators:

Karl Fichter	Certificate #6840
Leigh Lougheed	Certificate #6846
David Stene	Certificate #6851
Mike Thomas	Certificate #3219
Frank Zandvliet	Certificate #5657

The Town of Osoyoos also has an Irrigation System with two lake inlets and one well that provide domestic water in the non-irrigation season; all irrigation water sources are treated. Chlorinator residual testing is done daily during the irrigation season and well testing during the non-irrigation season is done a minimum of twice a week.

Bacteriological Summary

The Town of Osoyoos collected 90 Coliform Samples for the Irrigation system.

The Town of Osoyoos collected 90 Coliform Samples for the Town System.

The Irrigation system also had Trihalomethane analysis done. Results are enclosed in the following reports from Caro. Attached for your perusal is various water reports taken for the Town of Osoyoos Water System.

Capital Works Plan

The following is an update for 2013 Capital Projects:

- Water main extension – Hwy 3 from Tamarack to 45th Street
- GWUDI Report completed IHA and Town discussed results
- SCADA upgrade

The 2014 **Proposed** Capital Projects for the Town of Osoyoos Water System include the following:

- Water metering strategy
- Well #1 assessment
- Well #1 & #8 water treatment and plan design
- Station 9 – pumps and motor replacement
- 340 Booster pump preventative maintenance
- 402 Booster Station additional pump
- SCADA upgrades Wells #3, #4, #5, & #6
- Reservoir mixer
- Reservoir cleaning

Water Monitoring Plan

The following is the Water Monitoring Schedule for the Town of Osoyoos Water System and the Town of Osoyoos System 8 & 9 Irrigation systems:

January 1 to Dec 31, 2014	Weekly Sampling for Bacterial Coliforms and E-Coli
June 10, 2014	Nitrate/Nitrite/Hardness/Manganese
August 5, 2014	THM's System #8 & #9
September 9, 2014	Chemical and Bacterial Parameters for Well #5
September 16, 2014	Nitrate/Nitrite/Hardness/Manganese
December 2, 2014	THM's System #8 & #9
December 9, 2014	Nitrate/Nitrite/Hardness/Manganese

We will be doing weekly samples of the Beaches as outlined by Interior Health from June 17th to September 9th, 2014.

Water Master Plan

To date the Water Master Plan relating to Irrigation District Systems 8 & 9 has been completed and adopted by the Town. The master plan for the Irrigation systems recommends a twinning program 43210 compliance.

The Master Plan for the municipal water system has not been completed because of uncertainties related to GWUDI classification of the Town water supply wells. It is anticipated that finalization of the GWUDI assessment report by Western Water will provide the basis for developing 43210 compliance plans for each well and thereby enable completion of components of the water master plan which relate to the municipal water system.

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Water Consumption Summary

Water Consumption - Town System

Well #	2013	2012	2011
1	113,881 m^3	133,850 m^3	251,949 m^3
3	993,669 m^3	980,568 m^3	1,004,705 m^3
4	190,095 m^3	117,539 m^3	134,513 m^3
5	398,090m^3	368,432m^3	368,432 m^3
6	53,522 m^3	78,066 m^3	66,902 m^3
8	379,126 m^3	556,905 m^3	332,527 m^3
Total	2,128,383 m^3	2,235,360 m^3	2,159,028 m^3

Water Consumption - Irrigation System

	2013	2012	2011
System 8	3,657,576 m^3	3,640,274 m^3	4,097,360 m^3
System 9	3,132,083 m^3	2,850,940 m^3	3,069,815 m^3
Well #6	212,766 m^3	226,638 m^3	220,166 m^3
Total	7,002,425 m^3	6,717,852 m^3	7,387,341 m^3

Total Chlorine Used = 15,121.4 kg

Well #6 - Water Consumption 2013

Month	Hrs Ran	In Min	x gpm	m^3
January	303	18,180	495	34,110
February	272	16,320	486	30,037
March	299	17,940	489	33,207
April	401	24,060	517	47,118
May	-	-	-	-
June	14	840	499	1,589
July	205	12,300	540	25,161
August	213	12,780	553	26,772
September	16	960	-	-
October	-	-	-	-
November	279	16,740	575	36,487
December	246	14,760	569	31,807
Total	2,248	134,880	394	266,288
To Town Water System June, July, Aug, =				**53,522 m^3**
To Irrigation System All Other Months =				**212,766 m^3**

System 8
Water Consumption 2013

Month	m^3
January	-
February	-
March	-
April	137,121
May	616,667
June	555,682
July	1,045,833
August	882,197
September	332,955
October	87,121
November	-
December	-
Total	**3,657,576 m^3**

System 9
Water Consumption 2013

Month	m^3
January	-
February	-
March	-
April	119,924
May	454,508
June	428,977
July	750,076
August	602,348
September	222,955
October	553,295
November	-
December	-
Total	**3,132,083m^3**

Well Monthly Summary

Water Well #1 Consumption 2013

Month	m^3	Hrs Ran
January	-	-
February	-	-
March	-	1
April	2,602	43
May	4,497	3
June	10,042	144
July	44,698	732
August	41,195	744
September	9,606	402
October	1,174	19
November	67	1
December	-	-
Total	**113,881 m^3**	**2,089**

Water Well #3 Consumption 2013

Month	m^3	Hrs Ran
January	48,117	319
February	53,216	376
March	44,170	421
April	122,083	752
May	105,170	742
June	93,008	657
July	103,667	732
August	102,140	697
September	99,333	701
October	97,591	678
November	60,931	424
December	64,242	474
Total	**993,669 m^3**	**6,973**

Water Well #4 Consumption 2013

Month	m^3	Hrs Ran
January	3,033	70
February	-	-
March	-	-
April	1,935	10
May	28,931	156
June	38,759	211
July	53,699	289
August	50,179	271
September	12,508	75
October	916	6
November	135	1
December	-	-
Total	**190,095 m^3**	**1,089**

Water Well #5 Consumption 2013

Month	m^3	Hrs Ran
January	-	-
February	-	-
March	-	-
April	28,174	137
May	80,068	390
June	75,375	366
July	91,848	447
August	78,136	380
September	33,977	166
October	10,201	50
November	311	1
December	-	-
Total	**398,090m^3**	**1,937**

Well #8 Water Consumption 2013

Month	m^3	Hrs Ran
January	-	-
February	-	-
March	-	-
April	689	5
May	82,917	557
June	84,735	567
July	99,091	667
August	98,295	666
September	6,473	432
October	1,519	96
November	2,788	20
December	2,618	18
Total	**379,126 m^3**	**3,028**

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Osoyoos, Town of
PROJECT THM Analysis

WORK ORDER 3080379
REPORTED Aug-14-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Calculated Parameters							
Sample ID: System #9, ST. #9 (3080379-01) [Water] Sampled: Aug-06-13 11:35							
Total Trihalomethanes	**0.022**	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	**0.022**		0.003	mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)							
Sample ID: System #9, ST. #9 (3080379-01) [Water] Sampled: Aug-06-13 11:35							
Bromodichloromethane	< 0.001		0.001	mg/L	N/A	Aug-13-13	
Bromoform	< 0.001		0.001	mg/L	N/A	Aug-13-13	
Chloroform	**0.022**		0.001	mg/L	N/A	Aug-13-13	
Dibromochloromethane	< 0.001		0.001	mg/L	N/A	Aug-13-13	
Surrogate: Toluene-d8	*84 %*		*80-120*		*N/A*	*Aug-13-13*	
Surrogate: 4-Bromofluorobenzene	*79 %*		*80-120*		*N/A*	*Aug-13-13*	*S02*

Sample / Analysis Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Osoyoos, Town of
PROJECT THM Analysis

WORK ORDER 3080378
REPORTED Aug-14-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Calculated Parameters							
Sample ID: System #8, ST. #8 (3080378-01) [Water] Sampled: Aug-06-13 11:20							
Total Trihalomethanes	**0.067**	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	**0.066**		0.003	mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)							
Sample ID: System #8, ST. #8 (3080378-01) [Water] Sampled: Aug-06-13 11:20							
Bromodichloromethane	**0.003**		0.001	mg/L	N/A	Aug-12-13	
Bromoform	< 0.001		0.001	mg/L	N/A	Aug-12-13	
Chloroform	**0.064**		0.001	mg/L	N/A	Aug-12-13	
Dibromochloromethane	< 0.001		0.001	mg/L	N/A	Aug-12-13	
Surrogate: Toluene-d8	*105 %*		*80-120*		*N/A*	*Aug-12-13*	
Surrogate: 4-Bromofluorobenzene	*95 %*		*80-120*		*N/A*	*Aug-12-13*	

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Osoyoos, Town of
PROJECT Comprehensive Analysis

WORK ORDER 3090695
REPORTED Sep-18-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Anions							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20							
Alkalinity, Total as CaCO3	**148**		1	mg/L	N/A	Sep-12-13	
Chloride	**7.09**	AO ≤ 250	0.10	mg/L	Sep-13-13	Sep-13-13	
Fluoride	**0.24**	MAC = 1.5	0.10	mg/L	Sep-13-13	Sep-13-13	
Nitrogen, Nitrate as N	**0.255**	MAC = 10	0.010	mg/L	Sep-13-13	Sep-13-13	
Nitrogen, Nitrite as N	< 0.010	MAC = 1	0.010	mg/L	Sep-13-13	Sep-13-13	
Sulfate	**29.9**	AO ≤ 500	1.0	mg/L	Sep-13-13	Sep-13-13	
General Parameters							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20							
Colour, True	< 5	AO ≤ 15	5	Color Unit	N/A	Sep-11-13	
Conductivity (EC)	**362**		2	uS/cm	N/A	Sep-12-13	
Cyanide, total	< 0.010	MAC = 0.2	0.010	mg/L	Sep-17-13	Sep-17-13	
pH	**7.99**	AO = 6.5 - 8.5	0.01	pH units	N/A	Sep-12-13	
Turbidity	**0.1**	See Guidelines	0.1	NTU	N/A	Sep-13-13	
UV Transmittance @ 254nm	**87.5**		0.1	%	N/A	Sep-16-13	
Calculated Parameters							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20							
Hardness, Total (Total as CaCO3)	**155**		5.0	mg/L	N/A	N/A	
Solids, Total Dissolved	**206**		2.0	mg/L	N/A	N/A	
Total Recoverable Metals							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20							
Aluminum, total	< 0.05	AO ≤ 0.1	0.05	mg/L	Sep-16-13	Sep-16-13	
Antimony, total	< 0.001	MAC = 0.006	0.001	mg/L	Sep-16-13	Sep-16-13	
Arsenic, total	< 0.005	MAC = 0.01	0.005	mg/L	Sep-16-13	Sep-16-13	
Barium, total	< 0.05	MAC = 1	0.05	mg/L	Sep-16-13	Sep-16-13	
Beryllium, total	< 0.001		0.001	mg/L	Sep-16-13	Sep-16-13	
Boron, total	< 0.04	MAC = 5	0.04	mg/L	Sep-16-13	Sep-16-13	
Cadmium, total	< 0.0001	MAC = 0.005	0.0001	mg/L	Sep-16-13	Sep-16-13	
Calcium, total	**42**		2	mg/L	Sep-16-13	Sep-16-13	
Chromium, total	< 0.005	MAC = 0.05	0.005	mg/L	Sep-16-13	Sep-16-13	
Cobalt, total	< 0.0005		0.0005	mg/L	Sep-16-13	Sep-16-13	
Copper, total	**0.004**	AO ≤ 1	0.002	mg/L	Sep-16-13	Sep-16-13	
Iron, total	< 0.1	AO ≤ 0.3	0.1	mg/L	Sep-16-13	Sep-16-13	
Lead, total	< 0.001	MAC = 0.01	0.001	mg/L	Sep-16-13	Sep-16-13	
Magnesium, total	**12.1**		0.1	mg/L	Sep-16-13	Sep-16-13	
Manganese, total	**0.124**	AO ≤ 0.05	0.002	mg/L	Sep-16-13	Sep-16-13	
Mercury, total	< 0.0002	MAC = 0.001	0.0002	mg/L	Sep-16-13	Sep-16-13	
Molybdenum, total	**0.006**		0.001	mg/L	Sep-16-13	Sep-16-13	
Nickel, total	< 0.002		0.002	mg/L	Sep-16-13	Sep-16-13	
Phosphorus, total	< 0.2		0.2	mg/L	Sep-16-13	Sep-16-13	

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Osoyoos, Town of
PROJECT Comprehensive Analysis

WORK ORDER 3090695
REPORTED Sep-18-13

Analyte	Result / *Recovery*	Canadian DW Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Total Recoverable Metals, Continued							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20, Continued							
Potassium, total	**3.7**		0.2	mg/L	Sep-16-13	Sep-16-13	
Selenium, total	< 0.005	MAC = 0.01	0.005	mg/L	Sep-16-13	Sep-16-13	
Silicon, total	< 5		5	mg/L	Sep-16-13	Sep-16-13	
Silver, total	< 0.0005		0.0005	mg/L	Sep-16-13	Sep-16-13	
Sodium, total	**19.0**	AO ≤ 200	0.2	mg/L	Sep-16-13	Sep-16-13	
Uranium, total	**0.0024**	MAC = 0.02	0.0002	mg/L	Sep-16-13	Sep-16-13	
Vanadium, total	< 0.01		0.01	mg/L	Sep-16-13	Sep-16-13	
Zinc, total	< 0.04	AO ≤ 5	0.04	mg/L	Sep-16-13	Sep-16-13	
Microbiological Parameters							
Sample ID: Well #8/Town System (3090695-01) [Water] Sampled: Sep-10-13 13:20							
Coliforms, Total	**18**	MAC < 1	1	CFU/100mL	Sep-11-13	Sep-12-13	
E. coli	< 1	MAC < 1	1	CFU/100mL	Sep-11-13	Sep-12-13	

CARO ANALYTICAL SERVICES

SAMPLE ANALYTICAL DATA

REPORTED TO Osoyoos, Town of
PROJECT THM Analysis

WORK ORDER 3120213
REPORTED Dec-09-13

Analyte	Result / *Recovery*	Canadian DWQ Guideline	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Calculated Parameters							
Sample ID: System #9, 5001-107 St (3120213-01) [Water] Sampled: Dec-03-13 13:30							
Total Trihalomethanes	**0.018**	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	**0.016**	No Guideline	0.003	mg/L	N/A	N/A	
Sample ID: System #8, 9103-100 th Ave. (3120213-02) [Water] Sampled: Dec-03-13 13:45							
Total Trihalomethanes	**0.015**	0.1	0.004	mg/L	N/A	N/A	
Total Trihalomethanes (as CHCl3)	**0.013**	No Guideline	0.003	mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)							
Sample ID: System #9, 5001-107 St (3120213-01) [Water] Sampled: Dec-03-13 13:30							
Bromodichloromethane	**0.005**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Bromoform	< 0.001	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Chloroform	**0.011**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Dibromochloromethane	**0.002**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Surrogate: Toluene-d8	*93 %*		*70-130*		*N/A*	*Dec-05-13*	
Surrogate: 4-Bromofluorobenzene	*92 %*		*70-130*		*N/A*	*Dec-05-13*	
Sample ID: System #8, 9103-100 th Ave. (3120213-02) [Water] Sampled: Dec-03-13 13:45							
Bromodichloromethane	**0.004**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Bromoform	< 0.001	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Chloroform	**0.009**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Dibromochloromethane	**0.001**	No Guideline	0.001	mg/L	N/A	Dec-05-13	
Surrogate: Toluene-d8	*97 %*		*70-130*		*N/A*	*Dec-05-13*	
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*		*N/A*	*Dec-05-13*	

Cross Connection Program

The Town of Osoyoos currently has a Cross Connection program in place.

See the following pages for various reports that contain information on the Town's Cross Connection program.

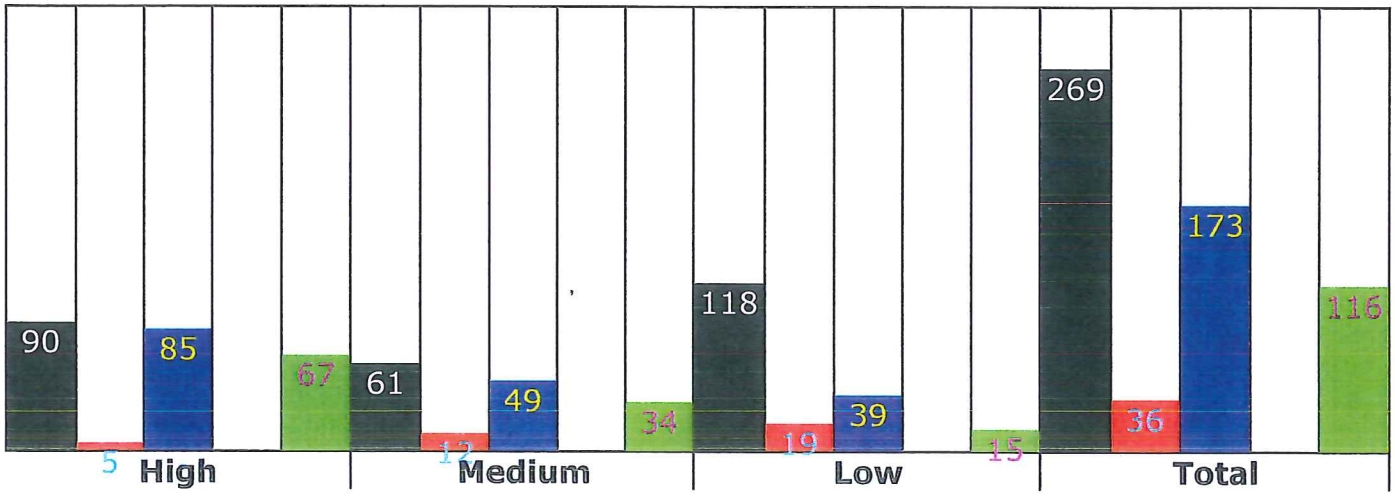
Cross-Connection Control Program

Town of Osoyoos

Summary Report - Jan 22, 2014

Customers	290
BFP's Tracked	272

Hazards	Quantity	Not Surveyed	Surveyed	Vacant	Compliant
High	90	5	85	0	67
Medium	61	12	49	0	34
Low	118	19	39	0	15
Totals	269	36	173	0	116



Legend
Total
Not Surveyed
Surveyed
Vacant
Compliant