



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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Tel: 613-332-4783
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Ms. Lorna Hudder
Township of Killaloe, Hagarty and Richards
1 John Street
Killaloe, ON
K0J 2A0

February 1, 2011

Dear Lorna Hudder:

RE: 2010 Annual Reports required by Ontario Regulations

Attached please find the 2010 Summary Report for the Killaloe Water Treatment System. This report is completed based on the information we have in our records in accordance with Schedule 22 of O.Reg 170/03, under the Safe Drinking Water Act. This schedule requires a Summary Report to be prepared no later than March 31st of each year for the preceding calendar year.

Any orders that you have received directly from the Ministry of the Environment (MOE) should be reviewed. Where noncompliance with the Order is evident and it is not included in the attached 2010 Summary Report, then we recommend that this information be added.

After your review and inclusion of any additional information, this Summary Report is to be provided to the members of the municipal council. It is also important to record and keep on record that this document was reviewed in council (resolution of council).

Also attached is the Section 11 Annual Report. This report is prepared to satisfy the requirements of O.Reg 170/03 section 11.

As part of the requirements of the Water Taking and Transfer Regulation (O. Reg 387/04) it is required that all the raw water daily flow volumes are submitted electronically for review by the MOE. This data was submitted and a copy of the data that was submitted is attached.

Section 12 of O. Reg. 170/03, requires that these reports be made available for inspection by any member of the public during normal business hours, without charge. The reports are to be made available for inspection at the office of the municipality.

Sincerely,

A handwritten signature in blue ink that reads "Vanessa Greatrix".

Vanessa Greatrix
Process and Compliance Technician
Ontario Clean Water Agency

cc: Jeremy Manning, OCWA
Brian Symondson, OCWA
Copy to file

.../Encls.

Killaloe Drinking Water System

2010 Annual Water Reports

Prepared By
Vanessa Greatrix
Process and Compliance Technician
Ottawa Valley Hub



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This document contains three different annual reports required for the Killaloe Drinking Water System Section 11 Annual Report (as per Section 11 of Ontario Regulation 170/03), Summary Report (as per Schedule 22 of the Ontario Regulation 170/03), and the Summary of the raw water values that were submitted to the Ministry of the Environment (as per Ontario Regulation 387/04 (Water Taking and Transfer))

Contents

Foreword	1
Schedule 22 Report	2
Summary of Non-Compliance	2
Summary of Non-Compliance Identified in a Ministry Inspection:	2
Flows	3
Raw Water Flows	3
<i>Annual Record of Water Taking</i>	3
Treated Water Flows	3
Ontario Regulation 170/03, Section 11, Annual Report.....	5
System Information	5
Drinking Water Systems that receive drinking water from system:	5
Brief System Description	5
Treatment Chemicals used during the reporting year:	5
Summary of Adverse Reports:	5
Regulatory Sample Results Summary	6
Microbiological Testing (170/03, Sch.10, Sch.11 or Sch.12):	6
Operational Testing (170/03, Sch.7, Sch.8 or Sch.9):	6
<i>On-Line</i>	6
<i>In-House</i>	6
<i>Laboratory</i>	6
Summary of additional samples:	7
Summary of inorganic parameters tested or most recent sample result:	8
Summary of Lead Sampling:	8
Summary of Organic parameters tested or most recent result	8
Maintenance Summary.....	10
Ontario Regulation 387/04, Water Taking and Transfer Data	11

Foreword

This document contains three different annual reports required for the Killaloe Drinking Water System;

- Summary Report as per Schedule 22 of the Ontario Regulation 170/03
- Section 11 Annual Report, as per Section 11 of Ontario Regulation 170/03
- Summary of the raw water values that were submitted to the Ministry of the Environment under the Ontario Regulation 387/04 (Water Taking and Transfer).

Section 12 of O.Reg 170/03, requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. These reports are to be made available for inspection at the office of the municipality and on the municipality internet site.

Schedule 22 Report

This report is required to be completed and provided in the case of a drinking-water system owned by a municipality, the members of the municipal council;

Summary of Non-Compliance

Drinking Water Legislation	List the requirement(s) the system failed to meet	Specify the duration of the failure (i.e. date(s))	Describe the measures taken to correct the failure	Status (complete or outstanding)
O. Reg 169	Distribution THM	26-Jul-10	AWQI#96537 - DW THM's avg 115 ug/L. Resample July 27, 2010 resulted in AWQI#96741. No further direction required by health unit.	Complete
O. Reg 169	Distribution THM	30-Jul-10	AWQI#96741 - DW THM's avg 108 ug/L. Re-sample from AWQI 96537. No further direction required by health unit.	Complete
O. Reg 169	Distribution THM	14-Oct-10	AWQI #98633 - Distribution THM's 106 ug/L - Re-sample and Flush. Results caused AWQI #98752. No further action required by health unit.	Complete
O. Reg 169	Distribution THM	21-Oct-10	AWQI #98752 - Distribution THM's 114 ug/L - Sample taken for AWQI #98633 resample. No further action required by health unit.	Complete

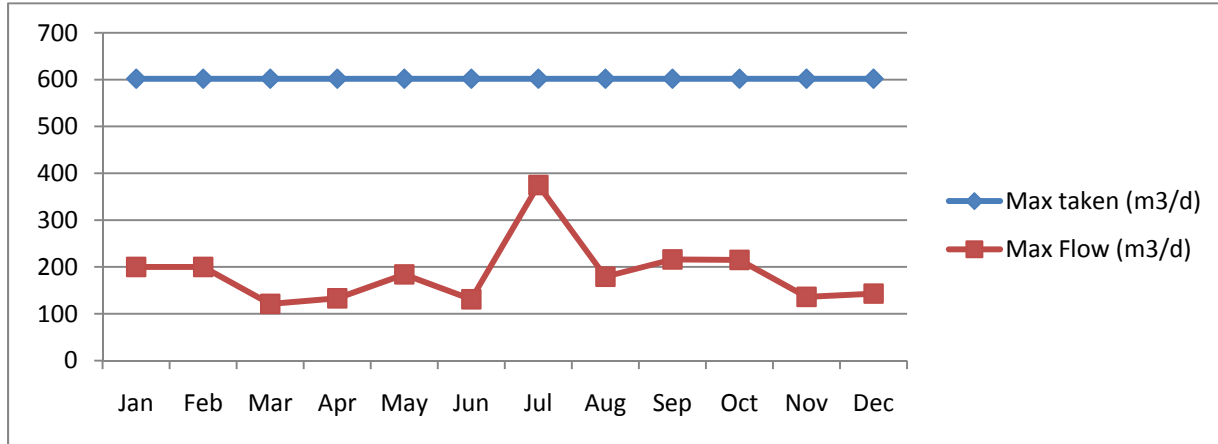
Summary of Non-Compliance Identified in a Ministry Inspection:

There were no non-compliance identified in the 2010 Ministry of Environment Inspection.

Flows

Raw Water Flows

The Raw Water flow are regulated under the Permit to Take Water.



Annual Record of Water Taking

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Annual Record Of Ground Water Taking
Relevé annuel des prises d'eau de souterraine

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 20. The Purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the respective hub office in your area.

Les renseignements personnels qui figurent dans le présent formulaire sont recueillis en vertu de l'article 20 de la Loi sur les ressources en eau de l'Ontario. Ce formulaire sert à dossiers les détails et les renseignements concernant la prise d'eau annuelle. Prière d'adresser toutes questions au personnel du bureau régional de votre secteur.

Year(Année): 2010 Permit No.(N° de permis): 6713-62X4ER Source: Well Water
Location: RW - Raw Water

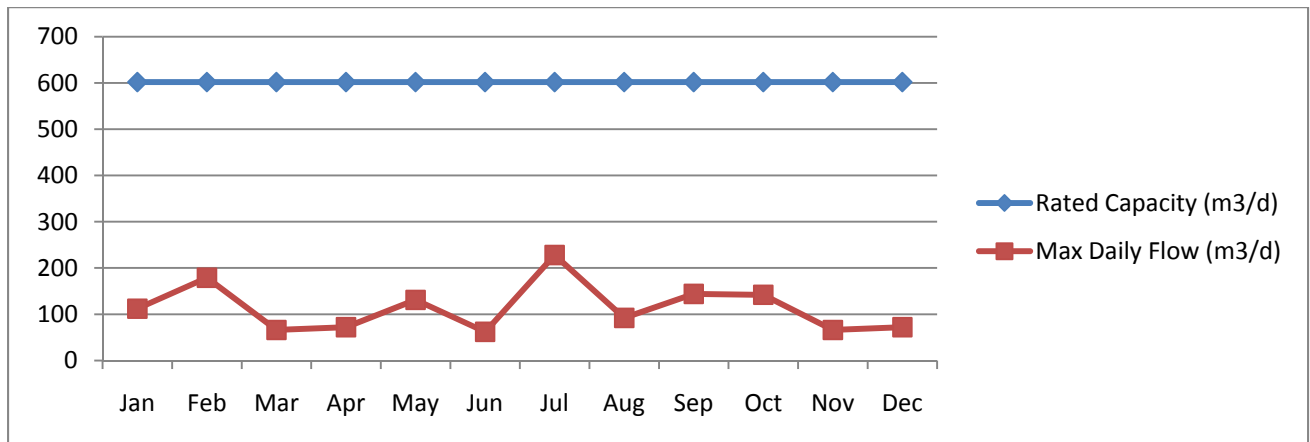
Name of Permittee: Mailing Address:
Nom du titulaire du permis Adresse postale

Location Of Taking: Twp. or Municipality: Concession: Lot:
Lieu de la prise d'eau Canton ou municipalité Township of Killaloe Hagarty and Richards

	Jan/2010	Feb/2010	Mar/2010	Apr/2010	May/2010	Jun/2010	Jul/2010	Aug/2010	Sep/2010	Oct/2010	Nov/2010	Dec/2010	<- Total ->	<- Avg. ->	<- Max. ->	<- Criteria-->
Total Hrs of Taking	116.6	110.2	95.7	100.1	141.0	94.8	138.4	137.2	133.0	139.5	97.0	107.0	1,410.5	117.54		
Avg Daily Rate of Taking(L/sec)	6.06	6.04	5.99	6.11	6.1	6.09	6.18	6.13	6.19	6.19	6.21	6.12		6.12		
Total Amt of Taking(m3)	2,552.0	2,410.0	2,065.0	2,178.0	3,126.0	2,095.0	3,078.0	3,050.0	2,960.0	3,119.0	2,170.0	2,383.0	31,186.0			
Avg Monthly Taking(m3/month)	82.32	86.07	66.61	72.6	100.84	69.83	99.29	98.39	98.67	100.61	72.33	76.87		85.37		
Max Daily Flow(m3)	200.0	200.0	121.0	133.0	184.0	131.0	375.0	179.0	216.0	215.0	136.0	143.0			375.0	601.92
Peak Daily Rate of Taking(L/sec)	6.3	6.3	6.3	6.3	6.3	6.3	6.4	6.4	6.4	6.4	6.4	6.4			6.4	0
Peak Daily Rate of Taking(L/min)	378.0	378.0	378.0	378.0	378.0	378.0	384.0	384.0	384.0	384.0	384.0	384.0			384.0	636.0

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.



Ontario Regulation 170/03, Section 11, Annual Report

System Information

Drinking Water System Name:	Killaloe Drinking Water System
Drinking Water System Number:	220006026
System Owner:	Township of Killaloe, Hagarty and Richards
Operating Authority:	Ontario Clean Water Agency
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2010 – December 31, 2010

This system does not serve more than 10,000 residence and the annual reports will be available to residence at the Killaloe, Hagarty and Richards Township Municipal Office. Notification will be at the Municipal Office and copies provided free of charge if requested. The Killaloe, Hagarty and Richards Township Municipal Office is located at 1 John Street in the Village of Killaloe.

Drinking Water Systems that receive drinking water from system:

There are no systems that receive water from this facility.

Brief System Description

Killaloe Water Treatment Plant is a single well, groundwater system equipped with greensand contactors that provide iron and manganese removal. Pre-disinfection is provided using Ultraviolet light and post disinfection is provided by sodium hypochlorite. pH adjustment equipment is installed but not required.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Potassium Permanganate	Contactors	Cariox
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Adverse Reports:

Date	AWQI #	Cause			Corrective Action Taken
		Parameter	Result	Exceedance of	
26-Jul-10	96537	Distribution THM's	Avg. 115 ug/L	O.Reg 169 100 ug/L	Resample on July 27, 2010 resulted in AWQI#96741.
30-Jul-10	96741	Distribution THM's	Avg. 108 ug/L	O.Reg 169 100 ug/L	No further direction required by health unit.
14-Oct-10	98633	Distribution THM's	Avg. 106 ug/L	O.Reg 169 100 ug/L	Resample Results caused AWQI #98752.
21-Oct-10	98752	Distribution THM's	Avg. 114 ug/L	O.Reg 169 100 ug/L	No further action required by health unit.

Regulatory Sample Results Summary

Microbiological Testing (170/03, Sch.10, Sch.11 or Sch.12):

Location	Number of Samples	E.coli Results (min) - (max)	Total Coliform Results (min) – (max)	Number of HPC Samples	HPC Results (min) - (max)
Raw - RW	52	0-0	0-0	N/A	N/A
Treated - TW	52	0-0	0-0	52	0-6
Distribution - DW	108	0-0	0-0	108	0-25

Operational Testing (170/03, Sch.7, Sch.8 or Sch.9):

On-Line

	Range of Results (min # - max #)
Treated Turbidity	0 – 5 NTU
Treated Free Chlorine	0.23 – 3.18 mg/L
Distribution Free Chlorine	0 - 5.0 mg/L
Fluoride	Fluoride is not added at this facility

*turbidity spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03

In-House

Parameter	# of grab samples taken	Range of Results (min # - max #)
Treated Free Chlorine	248	0.71 – 2.09 mg/L
Treated Turbidity	248	0.17 – 0.23 NTU
Treated Colour	104	0-0 TCU
Treated pH	104	7.7 – 7.9
Iron	104	0.002 – 0.005 mg/L
Manganese	104	0.019 – 0.045 mg/L
Potassium	104	0.068 – 0.096 mg/L
Distribution Free Chlorine	108	0.19 – 1.69 mg/L

Laboratory

Parameter	# of grab samples taken	Range of Results (min # - max #)
Fluoride	Fluoride is not used at this facility	
Treated Alkalinity	12	225 – 258 mg/L
Treated Colour	12	3 – 4 TCU
Treated Conductivity	12	651 – 724 uS/cm
Treated pH	12	8.04 – 8.49
Distribution Alkalinity	12	226 – 259 mg/L
Distribution Colour	12	<3 - <3 TCU
Distribution Conductivity	12	665 – 742 uS/cm

Distribution pH	12	8.05 – 8.43
Production Well Benzene	1	<0.32 ug/L
Production Well Ethylbenzene	1	<0.33 ug/L
Production Well m/p-xylene	1	<0.39 ug/L
Production Well o-xylene	1	<0.17 ug/L
Production Well Toluene	1	<0.36 ug/L
Test Well Benzene	1	<0.32 ug/L
Test Well Ethylbenzene	1	<0.33 ug/L
Test Well m/p-xylene	1	<0.39 ug/L
Test Well o-xylene	1	<0.17 ug/L
Test Well Toluene	1	<0.36 ug/L

Summary of additional samples:

Legal Document	Date of Issuance	Parameter	Date Sampled	Result	Unit of measure
Certificate of Approval #0621-7UES9F	01-Oct-09	Backwash Suspended Solids	19-Jan-10	2.0	mg/L
			17-Feb-10	2.0	mg/L
			23-Mar-10	<2.0	mg/L
			20-Apr-10	2.0	mg/L
			18-May-10	3.0	mg/L
			15-Jun-10	3.0	mg/L
			20-Jul-10	3.0	mg/L
			17-Aug-10	<2.0	mg/L
			21-Sep-10	<2.0	mg/L
			19-Oct-10	4.0	mg/L
16-Nov-10	<2.0	mg/L			
Municipal License #259-101	06-Dec-10	Backwash Suspended solids	21-Dec-10	2.0	mg/L
Certificate of Approval #0621-7UES9F	01-Oct-09	Backwash pH	19-Jan-10	7.8	no units
			17-Feb-10	8.01	no units
			23-Mar-10	8.04	no units
			20-Apr-10	8.27	no units
			18-May-10	8.24	no units
			15-Jun-10	8.03	no units
			20-Jul-10	7.98	no units
			17-Aug-10	7.85	no units
			21-Sep-10	7.93	no units
			19-Oct-10	7.58	no units
16-Nov-10	8.26	no units			
Municipal License #259-101	06-Dec-10	pH	21-Dec-10	8.3	no units

Summary of inorganic parameters tested or most recent sample result:

MAC = Maximum Allowable Concentration as per O.Reg 169/03

BDL = Below the laboratory detection level

Parameter	Sample Date	Result Value	Exceedance
Antimony: Sb (ug/L) - TW	11-Jan-10	<0.02	No
Arsenic: As (ug/L) - TW	11-Jan-10	0.8	No
Barium: Ba (ug/L) - TW	11-Jan-10	159	No
Boron: B (ug/L) - TW	11-Jan-10	111	No
Cadmium: Cd (ug/L) - TW	11-Jan-10	<0.003	No
Chromium: Cr (ug/L) - TW	11-Jan-10	0.6	No
Mercury: Hg (ug/L) - TW	11-Jan-10	<0.02	No
Selenium: Se (ug/L) - TW	11-Jan-10	<1.0	No
Sodium: Na (mg/L) - TW	15-Jan-08	28	No
Uranium: U (ug/L) - TW	11-Jan-10	2.22	No
Fluoride Residual: Mean (mg/L) - TW	15-Jan-08	0.28	No
1 st Quarter Nitrite (mg/L)	05-Jan-10	<0.005	No
2 nd Quarter Nitrite (mg/L)	06-Apr-10	<0.005	No
3 rd Quarter Nitrite (mg/L)	06-Jul-10	<0.005	No
4 th Quarter Nitrite (mg/L)	05-Oct-10	<0.005	No
1 st Quarter Nitrate (mg/L)	05-Jan-10	<0.013	No
2 nd Quarter Nitrate (mg/L)	06-Apr-10	<0.013	No
3 rd Quarter Nitrate (mg/L)	06-Jul-10	<0.013	No
4 th Quarter Nitrate (mg/L)	05-Oct-10	<0.013	No

Summary of Lead Sampling:

This facility met the requirements of the Certificate of Approval for Reduced Sampling and is now sampling under the exemption requirements.

Summary of Organic parameters tested or most recent result

MAC = Maximum Allowable Concentration as per O.Reg 169/03

BDL = Below the laboratory detection level

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	11-Jan-10	<0.11	No
Aldicarb (ug/L) - TW	11-Jan-10	<0.3	No
Aldrin + Dieldrin (ug/L) - TW	11-Jan-10	<0.067	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	11-Jan-10	<0.12	No
Azinphos-methyl (ug/L) - TW	11-Jan-10	<0.21	No
Bendiocarb (ug/L) - TW	11-Jan-10	<0.13	No
Benzene (ug/L) - TW	11-Jan-10	<0.32	No
Benzo(a)pyrene (ug/L) - TW	11-Jan-10	<0.004	No
Bromoxynil (ug/L) - TW	11-Jan-10	<0.33	No
Carbaryl (ug/L) - TW	11-Jan-10	<0.16	No
Carbofuran (ug/L) - TW	11-Jan-10	<0.37	No
Carbon Tetrachloride (ug/L) - TW	11-Jan-10	<0.16	No
Chlordane:Total (ug/L) - TW	11-Jan-10	<0.11	No
Chlorpyrifos (ug/L) - TW	11-Jan-10	<0.18	No
Cyanazine (ug/L) - TW	11-Jan-10	<0.18	No

Diazinon (ug/L) - TW	11-Jan-10	<0.081	No
Dicamba (ug/L) - TW	11-Jan-10	<0.2	No
1,2-Dichlorobenzene (ug/L) - TW	11-Jan-10	<0.41	No
1,4-Dichlorobenzene (ug/L) - TW	11-Jan-10	<0.36	No
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L) - TW	11-Jan-10	<0.14	No
1,2-Dichloroethane (ug/L) - TW	11-Jan-10	<0.35	No
1,1-Dichloroethylene (ug/L) - TW	11-Jan-10	<0.33	No
Dichloromethane (ug/L) - TW	11-Jan-10	<0.35	No
2,4-Dichlorophenol (ug/L) - TW	11-Jan-10	<0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	11-Jan-10	<0.19	No
Diclofop-methyl (ug/L) - TW	11-Jan-10	<0.4	No
Dimethoate (ug/L) - TW	11-Jan-10	<0.12	No
Dinoseb (ug/L) - TW	11-Jan-10	<0.36	No
Diquat (ug/L) - TW	11-Jan-10	<1.0	No
Diuron (ug/L) - TW	11-Jan-10	<0.087	No
Glyphosate (ug/L) - TW	11-Jan-10	<6.0	No
Heptachlor+Hepachlor Epoxide (ug/L) - TW	11-Jan-10	<0.11	No
Lindane: (ug/L) - TW	11-Jan-10	<0.056	No
Malathion (ug/L) - TW	11-Jan-10	<0.091	No
Methoxychlor (ug/L) - TW	11-Jan-10	<0.14	No
Metolachlor (ug/L) - TW	11-Jan-10	<0.092	No
Metribuzin (ug/L) - TW	11-Jan-10	<0.12	No
Monochlorobenzene (ug/L) - TW	11-Jan-10	<0.3	No
Paraquat (ug/L) - TW	11-Jan-10	<1.0	No
Parathion (ug/L) - TW	11-Jan-10	<0.18	No
Pentachlorophenol (ug/L) - TW	11-Jan-10	<0.15	No
Phorate (ug/L) - TW	11-Jan-10	<0.11	No
Picloram (ug/L) - TW	11-Jan-10	<0.25	No
Polychlorinated Bichenysl(PCB) (ug/L) - TW	11-Jan-10	<0.04	No
Prometryne (ug/L) - TW	11-Jan-10	<0.23	No
Simazine (ug/L) - TW	11-Jan-10	<0.15	No
THM (ug/L) - DW	Annual Running Average	114	YES
Temephos (ug/L) - TW	11-Jan-10	<0.31	No
Terbufos (ug/L) - TW	11-Jan-10	<0.12	No
Tetrachloroethylene (ug/L) - TW	11-Jan-10	<0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	11-Jan-10	<0.14	No
Triallate (ug/L) - TW	11-Jan-10	<0.1	No
Trichloroethylene (ug/L) - TW	11-Jan-10	<0.43	No
2,4,6-Trichlorophenol (ug/L) - TW	11-Jan-10	<0.25	No
2,4,5-Trichlorophenoxy acetic acid (ug/L) - TW	11-Jan-10	<0.22	No
Trifluralin (ug/L) - TW	11-Jan-10	<0.12	No
Vinyl Chloride (ug/L) - TW	11-Jan-10	<0.17	No

Maintenance Summary

Routine scheduled maintenance is captured in OCWA's Workplace Management System. The maintenance items described below are outside the scope of routine scheduled maintenance:

Work Order #	Brief Description
2103907	UV sensor replacement
1937458	Clearwell piping replacement
1791680	Recirculation pump and parts for THM reduction
2055346	Annual service by H2Flow on both UV units (Bronze Service)
2169653	UPS installed on distribution system analyzer
2081559	Battery replacement for Back-up generator

Ontario Regulation 387/04, Water Taking and Transfer Data

2010 Data was submitted electronically on January 11, 2011 under permit #6713-62X4ER.

Raw flows are in m3/d

Jan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	75	75	75	117	53	53	53	66	66	66	145	57	57	57	87	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	87	87	131	62	62	62	75	75	75	200	101	101	101	77	77	77

Feb	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	148	95	95	95	95	95	95	200	83	83	83	84	84	84	84	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	63	94	94	63	63	63	89	58	58	58	68	68	68			

Mar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	93	56	56	56	64	64	64	121	57	57	57	65	65	65	84	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	54	54	54	67	67	67	84	55	55	55	67	67	67	62	83	83

Apr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	66	66	66	66	66	93	61	61	65	65	65	103	67	67	67	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	70	70	70	133	80	80	80	65	65	65	120	54	54	54	74	

May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	74	74	114	59	59	59	65	65	65	83	71	71	71	78	78	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	78	159	184	184	184	96	96	96	96	180	155	155	77	77	77	146

Jun	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	54	54	54	70	70	70	96	56	56	56	70	70	70	113	69	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	69	69	57	57	57	131	57	57	57	67	67	67	119	68	68	

Jul	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	68	84	84	84	83	84	84	84	75	75	75	161	60	60	60	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	69	69	69	186	64	64	64	77	77	77	375	154	154	154	102	102

Aug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	102	102	105	78	78	97	97	97	82	89	89	89	117	117	117	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	113	115	115	115	85	85	85	179	81	81	81	69	69	69	176	76

Sep	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	76	76	82	82	82	82	103	83	83	72	72	72	128	80	80	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	80	70	70	70	152	85	85	85	71	71	71	149	216	216	216	

Oct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	215	215	215	145	116	116	74	99	99	99	99	105	110	110	117	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	117	117	50	73	73	73	69	69	69	91	68	68	68	60	60	60

Nov	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	121	54	54	54	63	63	63	136	71	71	71	49	49	49	111	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	63	63	63	68	68	68	115	55	55	55	71	71	71	128	77	

Dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	77	77	72	72	72	98	78	78	78	68	68	68	143	77	77	
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	77	56	56	56	104	79	79	79	84	84	84	84	84	48	48	78