

# Quarterly Oil and Gas Water Use Summary



Second Quarter 2014 (Apr-Jun)



## PURPOSE

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This *Quarterly Oil and Gas Water Use Summary* presents short-term water use and water licence data from the Q2 April to June 2014 period.

Previous annual water use reports and quarterly water use summaries are available on the BC Oil and Gas Commission website at [www.bcogc.ca](http://www.bcogc.ca).

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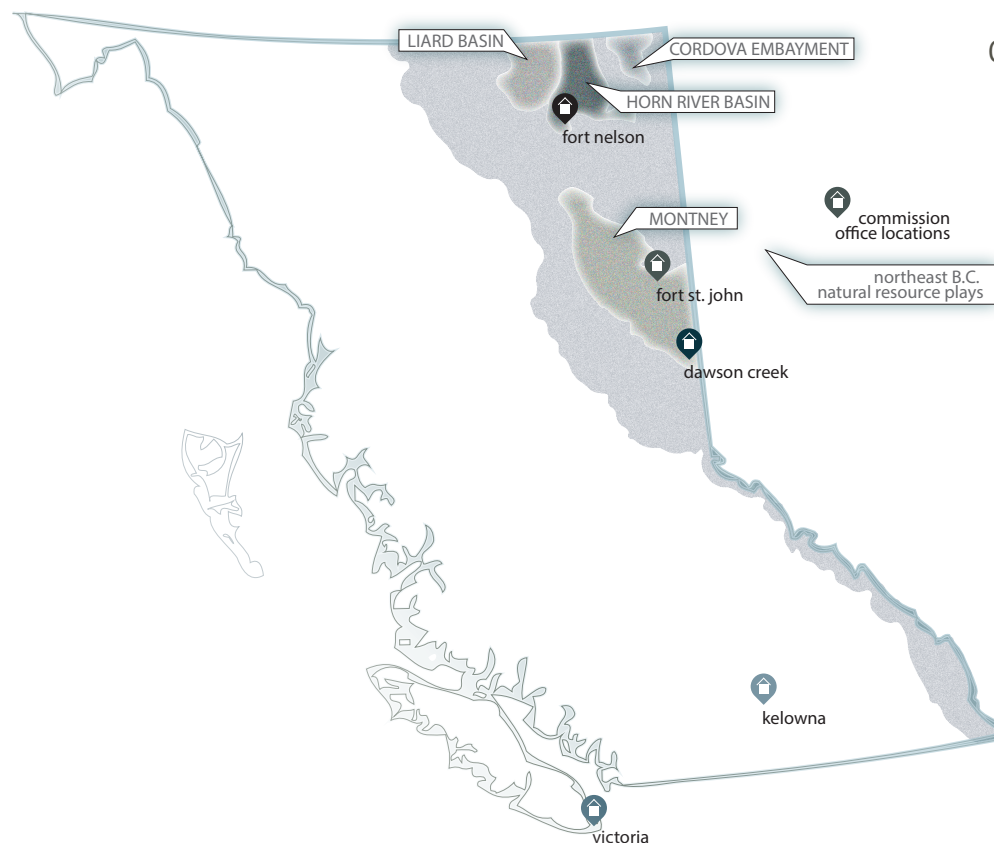
# BC OIL AND GAS COMMISSION

The [BC Oil and Gas Commission](#) (Commission) is a single-window Crown corporation that regulates oil and gas activity in the Province of British Columbia.

The Commission regulates industry using the [Oil and Gas Activities Act \(OGAA\)](#), the [Petroleum and Natural Gas \(PNG\) Act](#), and associated regulations. Specified enactments provide the Commission additional authorities to permit oil and gas activities related to forestry, heritage conservation, roads, land and water use, and other natural resources. This consolidated authority allows the Commission to monitor activity in a comprehensive and effective manner where oil and gas activities occur, including Crown land, privately held land, and the Agricultural Land Reserve.

The Commission is responsible for reviewing, assessing, and making decisions on water authorizations from both surface and subsurface water sources. The Commission has the expertise and tools to make informed water allocation decisions; protecting and maintaining environmental and community water needs are its first priorities.

Where water authorization is granted, the Commission becomes responsible for regulating the permissions by which oil and gas companies operate.



Commission Office Locations  
Throughout B.C.

The Commission manages water use with a specific focus on environmental values at every opportunity, monitoring the water withdrawal and enforcing compliance with applicable legislation where required.

The Commission's workforce operates out of Fort Nelson, Fort St. John, Dawson Creek, Kelowna and Victoria, with the largest number of employees concentrated in Fort St. John, the heart of oil and gas activity in the province. The offices in Fort Nelson and Dawson Creek ensure the Commission's presence in communities of the Horn River Basin and Montney gas plays respectively.

## HOW WATER IS USED

Water is used for various purposes in the oil and gas industry.



The largest use of water for oil and gas activities is for hydraulic fracturing.

However, water is used for other purposes, such as:



Seismic or geophysical exploration



Drilling



Machine washing



Dust control



Water floods (to enhance oil recovery)



Ice road freezing



Hydrostatic testing of pipelines

## HOW WATER IS ACCESSED

There are different ways the oil and gas industry in British Columbia may access water. Some methods are managed through provincial legislation, including:

- **Water licences** issued under the Water Act. The Commission has staff designated as Regional Water Managers with authority for issuing and administering long-term water licences.
- **Short-term surface water use or diversion approvals** issued under Section 8 of the Water Act. Short-term water use is administered by the Commission.
- **Water source wells** authorized by the Commission under OGAA. Water source wells are a specific type of well where the water withdrawn is intended for injection into an underground formation to enhance oil or natural gas recovery.
- **Flowback water** that returns to the surface after being injected for hydraulic fracturing.
- **Produced water** that flows to the surface as a by-product of oil and gas production.

The oil and gas industry can also access water by other means:



- **Private agreements** can be made with landowners or others who have a source of surface water supply such as a dugout or a groundwater well.
- **Groundwater wells** for oil and gas use where the activity does not involve water injection (hydraulic fracturing) into the subsurface. These include road maintenance, geophysical exploration, and other possible uses.



## SHORT-TERM WATER APPROVALS AND USE

During April to June of 2014, there were a total of 259 short-term water use approvals in place, representing 1,026 withdrawal locations, held by 43 companies (Table 1).

The total water volume associated with short-term approvals that were active on the last day of the quarter was 12,101,997 m<sup>3</sup>.

A total of 1,705,414 m<sup>3</sup> was reported as used by oil and gas operators for the first half of the year.

A break-down of short-term water approval and use by OGC Water Management Basin is listed in Table 4 on page 8.

TABLE 1 - WATER APPROVAL AND USE FOR OIL AND GAS ACTIVITIES IN 2014

	Q1	Q2
<b>SHORT-TERM</b>		
Companies with Active Section 8 Approvals	40	43
Active Section 8s	281	259
Approved Withdrawal locations for Section 8s	1,197	1,026
Volume Available for Use for Section 8s (m <sup>3</sup> )	13,096,294	12,101,997
Cumulative Volume Reported Withdrawn for Section 8s (m <sup>3</sup> )	1,135,656	1,705,414

TABLE 2 - QUARTERLY WATER WITHDRAWALS (m<sup>3</sup>) FROM SECTION 8 APPROVALS, 2011 Q1 - 2014 Q2

	Q1	Q2	Q3	Q4	SUM
<b>2011</b>	782,388	662,767	1,266,317	1,100,613	3,812,085
<b>2012</b>	1,345,289	982,376	1,088,192	340,607	3,756,464
<b>2013</b>	1,061,417	482,054	605,408	747,986	2,896,865
<b>2014</b>	1,135,656	569,758			1,705,414



## LONG-TERM WATER LICENCES AND USE

In the second quarter of 2014, there were 22 active oil and gas related water licences, representing 36 withdrawal locations, held by nine companies. The total annual licensed water volume remains at 22,035,035 m<sup>3</sup> (Table 3).

Mandatory reporting of water use under water licence has generally not been a requirement; in 2014, the Commission amended these licences to require water use reporting.

A total of 1,156,354 m<sup>3</sup> of licensed water was reported as used in the first half of 2014.

TABLE 3 - WATER APPROVAL AND USE FOR OIL AND GAS ACTIVITIES IN 2014		Q1	Q2
WATER LICENCE	Companies with Active Water Licences	9	9
	Active Water Licences	22	22
	Licensed Withdrawal Locations	36	36
	Annual Volume Available for Use for Water Licences (m <sup>3</sup> )	22,035,035	22,035,035
	Cumulative Volume Reported Used in 2014 (m <sup>3</sup> )	129,808	1,156,354

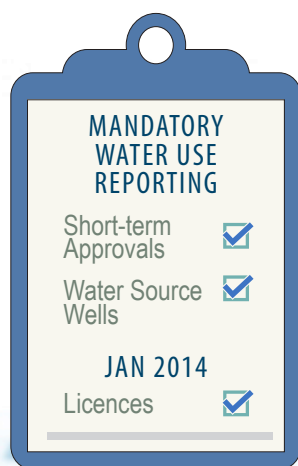


TABLE 4 - SUMMARY OF WATER APPROVAL AND USE FOR OIL AND GAS ACTIVITIES IN 2014, ORGANIZED BY OGC WATER MANAGEMENT BASIN (Page 1 of 4)

MAJOR and Sub-Basin Name	SECTION 8 WATER USE APPROVALS - BC OIL AND GAS COMMISSION					OIL AND GAS RELATED WATER LICENCES				
	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³) FOR LOCATIONS ACTIVE ON 6/30/2014	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2014 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENSED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENSED (m³)	TOTAL VOLUME LICENSED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN (m³)	MEAN ANNUAL RUNOFF (m³)
<b>BEATTON RIVER</b> (sub-basin of Peace River)										
Upper Beatton River	42	1,188,051	0.238%	51,245	0.010%	0				499,408,440
Middle Beatton River	11	63,750		270		0				249,152,995
<b>Middle Beatton Total (incl. Upper Beatton)</b>	<b>53</b>	<b>1,251,801</b>	<b>0.167%</b>	<b>51,515</b>	<b>0.007%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>		<b>748,561,435</b>
Milligan Creek	11	235,854	0.123%	1,155	0.001%	0				191,536,686
Blueberry River	43	858,243	0.293%	44,017	0.015%	2	15,100	0.005%		293,278,540
Doig River	4	48,549	0.015%	40	0.000%	1	2,321,800	0.719%		323,069,523
Lower Beatton River	3	0		0		1	394,000			138,262,629
<b>BEATTON TOTAL</b>	<b>114</b>	<b>2,394,447</b>	<b>0.141%</b>	<b>96,727</b>	<b>0.006%</b>	<b>4</b>	<b>2,730,900</b>	<b>0.161%</b>		<b>1,694,708,813</b>
<b>HALFWAY RIVER</b> (sub-basin of Peace River)										
Chowade River	0					0				327,027,527
Upper Halfway River	2	150,000		0		0				795,962,409
<b>Upper Halfway Total (includes Chowade)</b>	<b>2</b>	<b>150,000</b>	<b>0.013%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>		<b>1,122,989,936</b>
Graham River	3	1,279,900	0.149%	0	0.000%	0				860,627,172
Cameron River	35	730,509	0.327%	94,465	0.042%	0				223,679,567
Lower Halfway River	23	1,968,454		18,953		0				151,526,991
<b>HALFWAY TOTAL</b>	<b>63</b>	<b>4,128,863</b>	<b>0.175%</b>	<b>113,418</b>	<b>0.005%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>		<b>2,358,823,666</b>
<b>MOBERLY RIVER</b> (sub-basin of Peace River)										
Moberly River	1	40,000		0		0				391,714,995
<b>MOBERLY TOTAL</b>	<b>1</b>	<b>40,000</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>		<b>391,714,995</b>
<b>PINE RIVER</b> (sub-basin of Peace River)										
Burnt River	2	10,000	0.001%	8	0.000%	0				737,930,022
Sukunka River	2	10,360		20		0				1,047,282,572
<b>Sukunka River Total (includes Burnt)</b>	<b>4</b>	<b>20,360</b>	<b>0.001%</b>	<b>28</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>		<b>1,785,212,594</b>
Upper Pine River	3	300	0.000%	0	0.000%	0				1,466,884,035
Murray River	37	76,898	0.003%	30	0.000%	7	25,000	0.001%		2,698,285,017
Lower Pine River	39	835,621		124,479		0				137,619,889
<b>PINE TOTAL</b>	<b>83</b>	<b>933,179</b>	<b>0.019%</b>	<b>124,537</b>	<b>0.002%</b>	<b>7</b>	<b>25,000</b>	<b>0.000%</b>		<b>6,088,001,535</b>



MAJOR and Sub-Basin Name	SECTION 8 WATER USE APPROVALS - BC OIL AND GAS COMMISSION					OIL AND GAS RELATED WATER LICENCES					
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<b>KISKATINAW RIVER</b> (sub-basin of Peace River)											
West Kiskatinaw River	13	30,000	0.026%	0	0.000%	0					117,515,115
East Kiskatinaw River	84	74,000	0.070%	16,928	0.016%	0					105,452,962
Middle Kiskatinaw River	23	166,536		8,145		0					56,347,972
<b>Middle Kiskatinaw Total (incl. West &amp; East)</b>	<b>120</b>	<b>270,536</b>	<b>0.097%</b>	<b>25,073</b>	<b>0.009%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>279,316,049</b>
Lower Kiskatinaw River	8	134,726		3,773	0.004%	1	400,000				89,659,847
<b>KISKATINAW TOTAL</b>	<b>128</b>	<b>405,262</b>	<b>0.110%</b>	<b>28,846</b>	<b>0.008%</b>	<b>1</b>	<b>400,000</b>	<b>0.108%</b>			<b>368,975,896</b>
<b>PEACE RIVER</b>											
Peace Arm	0					2	7,300,000	N/A	47,209	N/A	N/A
Upper Peace River	0					0					36,423,413,429
Lynx Creek	0					0					30,436,635
Farrell Creek	1	0		0	0.000%	0					91,018,843
Cache Creek	2	21,500	0.029%	0	0.000%	2	185,000	0.248%			74,603,546
Pouce Coupe River	2	0	0.000%	0	0.000%	1	2,000	0.001%			255,686,202
Lower Peace River	1	300,000		0		2	2,717,469				114,470,012
<b>PEACE TOTAL</b> (incl. Kisk/Pine/Moberly/Half/Beatton)	<b>395</b>	<b>8,223,251</b>	<b>0.017%</b>	<b>363,528</b>	<b>0.001%</b>	<b>19</b>	<b>13,360,369</b>	<b>0.028%</b>	<b>47,209</b>	<b>0.000%</b>	<b>47,891,853,572</b>
<b>SMOKY RIVER</b>											
Smoky River	54	160,000		1,485	0.000%	1	2,500	0.000%			2,669,506,123
<b>SMOKY TOTAL</b>	<b>54</b>	<b>160,000</b>	<b>0.006%</b>	<b>1,485</b>	<b>0.000%</b>	<b>1</b>	<b>2,500</b>	<b>0.000%</b>			<b>2,669,506,123</b>
<b>MUSKWA RIVER</b> (sub-basin of Fort Nelson River)											
Upper Muskwa River	0					0					1,725,201,511
Middle Muskwa River	0					0					1,973,711,816
<b>Middle Muskwa Total (incl. Upper Muskwa)</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>3,698,913,327</b>
Lower Muskwa River	0	0				0					646,841,560
<b>MUSKWA TOTAL</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>4,345,754,887</b>
<b>PROPHET RIVER</b> (sub-basin of Fort Nelson River)											
Upper Prophet River	6	101,190	0.007%	234	0.000%	0					1,470,271,289
Middle Prophet River	6	23,400		0		0					621,428,680
<b>Middle Prophet Total (incl. Upper Prophet)</b>	<b>12</b>	<b>124,590</b>	<b>0.006%</b>	<b>234</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>2,091,699,969</b>
Lower Prophet River	4	22,900		0		0					272,262,427
<b>PROPHET TOTAL</b>	<b>16</b>	<b>147,490</b>	<b>0.006%</b>	<b>234</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>2,363,962,396</b>

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<b>SIKANNI CHIEF RIVER</b> (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	1	720	0.000%	258,941	0.032%	1	2,993,000	0.371%	191,862	0.024%	807,771,692
Middle Sikanni Chief River	38	449,517		48,601		0					949,755,794
<b>Middle Sikanni Chief Total (incl. Upper Sikanni)</b>	<b>39</b>	<b>450,237</b>	<b>0.026%</b>	<b>307,542</b>	<b>0.017%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.170%</b>	<b>191,862</b>	<b>0.011%</b>	<b>1,757,527,486</b>
Lower Sikanni Chief	10	14,173		9,992		0					875,678,142
<b>SIKANNI CHIEF TOTAL</b>	<b>49</b>	<b>464,410</b>	<b>0.018%</b>	<b>317,534</b>	<b>0.012%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.114%</b>	<b>191,862</b>	<b>0.007%</b>	<b>2,633,205,628</b>
<b>FORT NELSON RIVER</b>											
Kahntah River	9	3,875	0.001%	10,975	0.003%	0					400,582,903
Fontas River	10	0		8,912		0					591,531,903
<b>Fontas Total (includes Kahntah)</b>	<b>19</b>	<b>3,875</b>	<b>0.000%</b>	<b>19,887</b>	<b>0.002%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>992,114,806</b>
Klua River	6	21,000	0.005%	11,773	0.003%	0					402,135,448
Upper Fort Nelson River	15	46,200		12,028		0					276,181,026
<b>Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)</b>	<b>89</b>	<b>535,485</b>	<b>0.012%</b>	<b>361,222</b>	<b>0.008%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.070%</b>	<b>191,862</b>	<b>0.004%</b>	<b>4,303,636,908</b>
Snake River	19	45,000	0.014%	5,342	0.002%	0					310,763,522
Sahtaneh River	51	87,200	0.018%	11,257	0.002%	2	40,000	0.008%			474,904,729
Middle Fort Nelson River	23	410,250		670,513		1	3,000,000				515,348,901
<b>Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)</b>	<b>198</b>	<b>1,225,425</b>	<b>0.010%</b>	<b>1,048,568</b>	<b>0.009%</b>	<b>4</b>	<b>6,033,000</b>	<b>0.049%</b>	<b>191,862</b>	<b>0.002%</b>	<b>12,314,371,343</b>
Kiwigana River	14	41,550	0.009%	13,260	0.003%	5	42,500	0.010%			441,657,543
Lower Fort Nelson River	12	74,600		2,412		0					312,768,938
<b>FORT NELSON TOTAL</b>	<b>224</b>	<b>1,341,575</b>	<b>0.010%</b>	<b>1,062,240</b>	<b>0.008%</b>	<b>9</b>	<b>6,075,500</b>	<b>0.046%</b>	<b>191,862</b>	<b>0.001%</b>	<b>13,068,797,824</b>
<b>LIARD RIVER</b>											
Muncho River	0					0					551,551,360
Upper Liard River	0					0					33,125,817,465
<b>Upper Liard Total (incl. Muncho)</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>33,677,368,825</b>
Grayling River	0					0					630,833,914
Upper Toad River	0					0					1,521,055,576
Racing River	0					0					1,488,336,681
Lower Toad River	0					0					419,472,722
Beaver River	0					0					10,862,659,426
Middle Liard River	0					0					463,652,312

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<b>LIARD RIVER</b> con't											
<b>Middle Liard (incl. Upper Liard Total, Grayling, Upper Toad, Racing, Lower Toad, Beaver)</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>49,063,379,456</b>
Capot-Blanc Creek	26	353,256	0.192%	14,789	0.008%	0					183,879,851
Dunedin Rlver	44	234,125	0.029%	7,472	0.001%	0					820,464,167
Lower Liard River	24	580,158		69,394		0					1,236,634,664
<b>LIARD TOTAL</b> (incl. Fort Nelson)	<b>318</b>	<b>2,509,114</b>	<b>0.004%</b>	<b>1,155,895</b>	<b>0.002%</b>	<b>9</b>	<b>6,075,500</b>	<b>0.009%</b>	<b>191,862</b>	<b>0.000%</b>	<b>64,373,155,962</b>
<b>PETITOT RIVER</b>											
Sahdoanah River	24	57,300	0.023%	1,642	0.001%	0					252,625,362
Upper Petitot River	44	365,490	0.025%	121,091	0.008%	0					1,476,579,488
Tsea River	26	43,900	0.010%	29,624	0.007%	4	2,540,000	0.585%	917,283	0.211%	434,062,484
Middle Petitot River	13	23,300		1,235		2	26,666				698,562,753
<b>Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)</b>	<b>107</b>	<b>489,990</b>	<b>0.017%</b>	<b>153,592</b>	<b>0.005%</b>	<b>6</b>	<b>2,566,666</b>	<b>0.090%</b>	<b>917,283</b>	<b>0.032%</b>	<b>2,861,830,087</b>
Lower Petitot River	12	439,400		2,350		1	30,000				904,314,069
<b>PETITOT TOTAL</b>	<b>119</b>	<b>929,390</b>	<b>0.025%</b>	<b>155,942</b>	<b>0.004%</b>	<b>7</b>	<b>2,596,666</b>	<b>0.069%</b>	<b>917,283</b>	<b>0.024%</b>	<b>3,766,144,156</b>
<b>HAY RIVER</b>											
Upper Kotcho River	4	16,800	0.005%	3,510	0.001%	0					311,519,217
Kyklo River	29	0	0.000%	5,520	0.004%	0					145,897,691
Shekilie River	19	3,150	0.001%	0	0.000%	0					450,747,494
Lower Kotcho River	5	0		0		0					311,519,217
<b>Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)</b>	<b>57</b>	<b>19,950</b>	<b>0.002%</b>	<b>9,030</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>1,219,683,619</b>
Hay River	26	82,970		14,471		0					538,672,352
<b>HAY TOTAL</b>	<b>83</b>	<b>102,920</b>	<b>0.006%</b>	<b>23,501</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>1,758,355,971</b>
<b>CHINCHAGA RIVER</b>											
Chinchaga River	29	165,869	0.151%	5,026	0.005%	0					109,492,680
<b>CHINCHAGA TOTAL</b>	<b>29</b>	<b>165,869</b>	<b>0.151%</b>	<b>5,026</b>	<b>0.005%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>			<b>109,492,680</b>
<b>OTHER (outside Northeast B.C.)</b>	<b>28</b>	<b>11,453</b>		<b>37</b>		<b>0</b>	<b>0</b>				N/A
<b>G R A N D T O T A L</b>	<b>1,026</b>	<b>12,101,997</b>	<b>0.010%</b>	<b>1,705,414</b>	<b>0.001%</b>	<b>36</b>	<b>22,035,035</b>	<b>0.018%</b>	<b>1,156,354</b>	<b>0.001%</b>	<b>120,568,508,464</b>



Previous annual water reports and quarterly updates  
are available on the Commission's website at:

<http://www.bcogc.ca/public-zone/water-information>

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