

# Quarterly Oil and Gas Water Management Summary



Fourth Quarter 2019 (Oct - Dec)



# PURPOSE

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This *Quarterly Oil and Gas Water Management Summary* presents short-term water use and water licence data from the Q4 October to December 2019 period.

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

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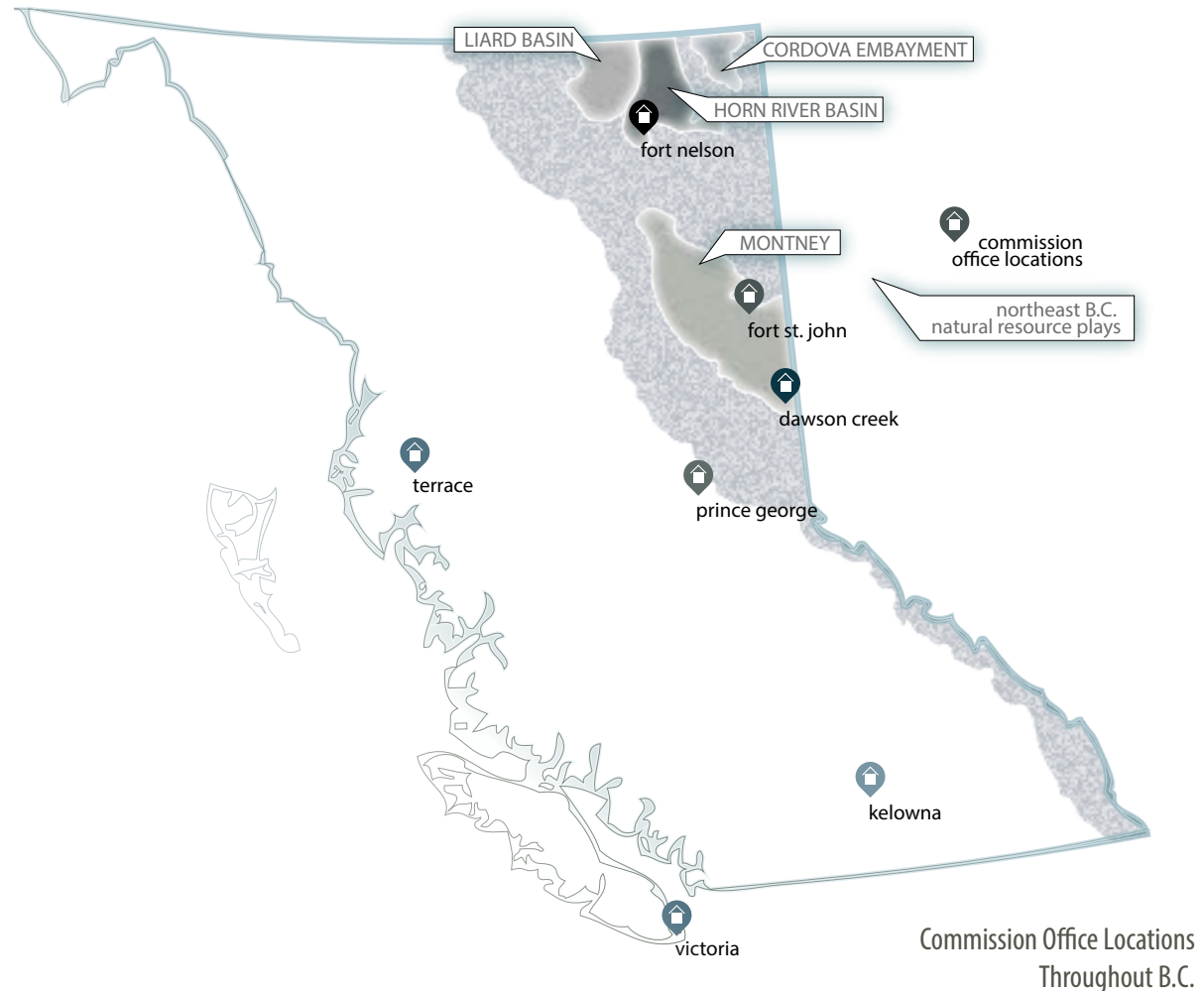
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# BC OIL AND GAS COMMISSION

The [BC Oil and Gas Commission](#) (Commission) is the provincial regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment, and ensuring equitable participation in production.

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, and protecting and maintaining environmental and community water needs are its first priorities.



## 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 may access water in British Columbia. Some methods are managed through provincial legislation, including:

- **Water licences** issued under the Water Sustainability Act (WSA) for surface and groundwater. 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 10 of the WSA. Short-term water use is administered by the Commission.
- **Water source wells** authorized by the Commission under the Oil and Gas Activities Act (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 access water by means outside of regulatory oversight:



- **Private agreements** can be made with land owners or others who have a source of surface water supply such as a dugout or a groundwater well. In some cases, private agreements may require a Waterworks water licence under the WSA.

## SHORT-TERM WATER APPROVAL AND USE

During October to December of 2019, there were 297 short-term water use approvals in place, representing 686 withdrawal locations, held by 49 companies (Table 1).

The total water volume associated with short-term approvals active on the last day of the fourth quarter was 13,347,623 m<sup>3</sup>.

A total of 1,281,115 m<sup>3</sup> was reported as withdrawn by oil and gas operators during 2019.

TABLE 1 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO DECEMBER 2019

	Q1	Q2	Q3	Q4	
SHORT-TERM	Companies with Active Approvals	46	44	43	49
	Active Approvals	201	239	267	297
	Approved Withdrawal locations	623	575	571	686
	Volume Available for Use (m <sup>3</sup> )	12,781,913	12,270,357	12,458,574	13,347,623
	Cumulative Volume Reported Withdrawn (m <sup>3</sup> )	313,178	647,292	1,109,121	1,281,115

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

## LONG-TERM WATER LICENCES AND USE

In the fourth quarter of 2019, there were 79 active oil and gas related water licences, representing 84 withdrawal locations, held by 21 companies (Table 2).

The total annual licenced water volume was 29,946,496 m<sup>3</sup>.

A total of 2,767,043 m<sup>3</sup> of licenced water was reported withdrawn by year end. Companies with active licences in Q4 are listed in Table 3.

TABLE 2 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO DECEMBER 2019

	Q1	Q2	Q3	Q4	
WATER LICENCE	Companies with Active Water Licences	15	18	19	21
	Active Water Licences	57	72	74	79
	Licensed Withdrawal Locations	60	77	79	84
	Annual Volume Available for Use for Water Licences (m <sup>3</sup> )	26,822,997	29,326,444	29,521,425	29,946,496
	Cumulative Volume Reported Withdrawn (m <sup>3</sup> )	464,272	1,759,139	2,530,827	2,767,043

A break-down of water licence allocation and use by OGC Water Management Basin is listed in Table 4.

TABLE 3: OIL AND GAS RELATED WATER LICENCES THAT WITHDREW WATER FROM OCTOBER TO DECEMBER 2019

LICENCE #	LICENCEE	SOURCE	OGC WATER MGMT BASIN	ANNUAL APPROVAL (m <sup>3</sup> /YR)	2019 WATER USE (m <sup>3</sup> /YR)
C112155	Whitecap Resources Inc.	Peace River	Lower Peace River	1,825,000	157,258
C132688	Canadian Natural Resources Limited (CNRL)	Charlie Lake	Lower Beatton River	394,000	5,592
C134104	Petronas Energy Canada	Unnamed Stream	Lower Halfway River	50,235	925
C134111	Petronas Energy Canada	Unnamed Stream	Upper Beatton River	49,588	765
C500226	Veresen Energy Pipeline	Aquifer 621	Smoky River	5,500	914
C500342	Petronas Energy Canada	FSJ Aquifer	Cameron River	8,988	36
C500355	Ovintiv Canada ULC	Dugout nr Eight Mile Creek	Lower Peace River	90,000	254
C500449	Kelt Exploration Ltd.	Aquifer 451	Cache Creek	146,000	22,417
C500453	Kelt Exploration Ltd.	Aquifer 451	Cache Creek	160,235	10,411
C500794	Petronas Energy Canada	FSJ Aquifer	Upper Beatton River	6,924	328
C501073	Petronas Energy Canada	FSJ Aquifer	Cameron River	6,240	588
C501076	Ovintiv Canada ULC	Bissette/Dawson Ck Aquifer	Pouce Coupe River	482,000	1,002
C501120	Canlin Energy Corp.	FSJ Aquifer	Upper Beatton River	1,825	40
C501135	CNRL	Aquifer 451	Blueberry River	1,825	301
C501206	CNRL	Dawson Creek Bedrock	Murray River	730	165
C501207	CNRL	FSJ Aquifer	Kahntah River	2,555	552
C501210	CNRL	FSJ Aquifer	Kahntah River	365	55
C501211	CNRL	FSJ Aquifer	Upper Beatton River	730	165
C501212	CNRL	Dawson Creek Aquifer	Smoky River	1,095	184
C501270	Black Swan Energy Ltd.	FSJ Aquifer	Upper Beatton River	6,570	425
C501357	Pineview Trucking/Excav.	Unnamed Aquifer	Parsnip River (Outside NEBC)	98,550	2,672
C501398	Umbrella Oilfield Ltd.	Chrissy Creek/FSJ Aquifer	Cameron River	150,000	12,963
C501477	TAQA North Ltd.	FSJ Aquifer	Middle Beatton River	1,095	148
C501507	Ovintiv Canada ULC	Aquifer 622	Pouce Coupe River	200,000	18,040
C501686	Kelt Exploration Ltd.	FSJ Aquifer	Blueberry River	27,375	9

TABLE 4 - SUMMARY OF WATER ALLOCATION AND USE FOR OIL AND GAS ACTIVITIES IN 2019, ORGANIZED BY OGC WATER MANAGEMENT BASIN (Page 1 of 4)

SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION

OIL AND GAS RELATED WATER LICENCES

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m <sup>3</sup> ) FOR LOCATIONS ACTIVE ON 12/31/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m <sup>3</sup> )	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m <sup>3</sup> )
<b>BEATTON RIVER</b> (sub-basin of Peace River)											
Upper Beatton River	14	240,510	0.048%	38,180	0.008%	18	2,089,459	0.418%	145,958	0.029%	499,408,440
Middle Beatton River	1	18,000	0.007%	0	0.000%	1	1,095	0.000%	149	0.000%	249,152,995
<b>Middle Beatton Total (incl. Upper Beatton)</b>	<b>15</b>	<b>258,510</b>	<b>0.035%</b>	<b>38,180</b>	<b>0.005%</b>	<b>19</b>	<b>2,090,554</b>	<b>0.279%</b>	<b>146,107</b>	<b>0.020%</b>	<b>748,561,435</b>
Milligan Creek	11	140,000	0.073%	887	0.000%	0					191,536,686
Blueberry River	41	1,464,722	0.499%	142,238	0.048%	4	197,100	0.000%	6,520	0.000%	293,278,540
Doig River	10	86,000	0.027%	0	0.000%	0					323,069,523
Lower Beatton River	32	378,033	0.273%	85,488	0.062%	1	394,000	0.285%	18,389	0.013%	138,262,629
<b>BEATTON TOTAL</b>	<b>109</b>	<b>2,327,265</b>	<b>0.137%</b>	<b>266,793</b>	<b>0.016%</b>	<b>24</b>	<b>2,681,654</b>	<b>0.158%</b>	<b>171,016</b>	<b>0.010%</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	0					0					795,962,409
<b>Upper Halfway Total (includes Chowade)</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>0</b>	<b>0.000%</b>	<b>1,122,989,936</b>
Graham River	2	3,450	0.000%	0	0.000%	0					860,627,172
Cameron River	33	958,957	0.429%	191,469	0.086%	13	685,625	0.307%	17,196	0.008%	223,679,567
Lower Halfway River	17	1,039,099	0.686%	97,697	0.064%	7	3,838,688	2.533%	1,181,993	0.780%	151,526,991
<b>HALFWAY TOTAL</b>	<b>52</b>	<b>2,001,506</b>	<b>0.085%</b>	<b>289,166</b>	<b>0.012%</b>	<b>20</b>	<b>4,524,313</b>	<b>0.192%</b>	<b>1,199,189</b>	<b>0.051%</b>	<b>2,358,823,666</b>
<b>MOBERLY RIVER</b> (sub-basin of Peace River)											
Moberly River	5	55,631	0.014%	24,296	0.006%	0					391,714,995
<b>MOBERLY TOTAL</b>	<b>5</b>	<b>55,631</b>	<b>0.000%</b>	<b>24,296</b>	<b>0.006%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>391,714,995</b>
<b>PINE RIVER</b> (sub-basin of Peace River)											
Burnt River	0					0					737,930,022
Sukunka River	3	30,000	0.003%	0	0.000%	0					1,047,282,572
<b>Sukunka River Total (includes Burnt)</b>	<b>3</b>	<b>30,000</b>	<b>0.002%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>1,785,212,594</b>
Upper Pine River	0	10,000	0.000%	2,650	0.000%	0					1,466,884,035
Murray River	3	20,850	0.001%	0	0.000%	1	730	0.000%	493	0.000%	2,698,285,017
Lower Pine River	34	563,908	0.410%	77,152	0.056%	1	650,000	0.472%	0	0.000%	137,619,889
<b>PINE TOTAL</b>	<b>40</b>	<b>614,758</b>	<b>0.019%</b>	<b>79,802</b>	<b>0.001%</b>	<b>2</b>	<b>650,730</b>	<b>0.011%</b>	<b>493</b>	<b>0.000%</b>	<b>6,088,001,535</b>



**SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION**

**OIL AND GAS RELATED WATER LICENCES**

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m <sup>3</sup> ) FOR LOCATIONS ACTIVE ON 12/31/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m <sup>3</sup> )	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m <sup>3</sup> )
<b>KISKATINAW RIVER</b> (sub-basin of Peace River)											
West Kiskatinaw River	0					0					117,515,115
East Kiskatinaw River	0					0					105,452,962
Middle Kiskatinaw River	7	100,296	0.178%	404	0.001%	1	600,000	0.000%	105,612	0.000%	56,347,972
<b>Middle Kiskatinaw Total (incl. West &amp; East)</b>	<b>7</b>	<b>100,296</b>	<b>0.036%</b>	<b>404</b>	<b>0.000%</b>	<b>1</b>	<b>600,000</b>	<b>0.215%</b>	<b>105,612</b>	<b>0.038%</b>	<b>279,316,049</b>
Lower Kiskatinaw River	33	1,447,662	1.615%	67,725	0.076%	7	2,738,100	3.054%	405,564	0.452%	89,659,847
<b>KISKATINAW TOTAL</b>	<b>40</b>	<b>1,547,958</b>	<b>0.420%</b>	<b>68,129</b>	<b>0.018%</b>	<b>8</b>	<b>3,338,100</b>	<b>0.905%</b>	<b>511,266</b>	<b>0.139%</b>	<b>368,975,896</b>
<b>PEACE RIVER</b>											
Peace Arm	0					3	9,125,000	0.000%	7,629	0.000%	N/A
Upper Peace River	5	859,313	0.002%	42,496	0.000%	0					36,423,413,429
Lynx Creek	3	43,996	0.145%	0	0.000%	0					30,436,635
Farrell Creek	7	271,644	0.298%	20,310	0.022%	0					91,018,843
Cache Creek	6	107,000	0.143%	52,567	0.070%	4	527,480	0.707%	215,765	0.289%	74,603,546
Pouce Coupe River	24	807,682	0.316%	175,567	0.069%	4	1,650,200	0.645%	34,012	0.013%	255,686,202
Lower Peace River	16	1,481,262	1.294%	112,809	0.099%	6	4,157,469	3.632%	618,612	0.540%	114,470,012
<b>PEACE TOTAL</b> (incl. Kisk/Pine/Moberly/Half/Beaton)	<b>307</b>	<b>10,118,015</b>	<b>0.021%</b>	<b>1,131,935</b>	<b>0.002%</b>	<b>71</b>	<b>26,654,946</b>	<b>0.056%</b>	<b>2,757,982</b>	<b>0.006%</b>	<b>47,891,853,572</b>
<b>SMOKY RIVER</b>											
Smoky River	3	9,000	0.000%	0	0.000%	2	6,595	0.000%	4,271	0.000%	2,669,506,123
<b>SMOKY TOTAL</b>	<b>3</b>	<b>9,000</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>2</b>	<b>6,595</b>	<b>0.000%</b>	<b>4,271</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>0</b>	<b>0.000%</b>	<b>3,698,913,327</b>
Lower Muskwa River	0	0	0.000%	522	0.000%	0					646,841,560
<b>MUSKWA TOTAL</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>522</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</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	0	0	0.000%	60	0.000%	1	36,593	0.002%	0	0.000%	1,470,271,289
Middle Prophet River	6	31,200	0.005%	63	0.000%	0					621,428,680
<b>Middle Prophet Total (incl. Upper Prophet)</b>	<b>6</b>	<b>31,200</b>	<b>0.001%</b>	<b>123</b>	<b>0.000%</b>	<b>1</b>	<b>36,593</b>	<b>0.002%</b>	<b>0</b>	<b>0.000%</b>	<b>2,091,699,969</b>
Lower Prophet River	1	3,900	0.001%	4,080	0.001%	0					272,262,427
<b>PROPHET TOTAL</b>	<b>7</b>	<b>35,100</b>	<b>0.001%</b>	<b>4,203</b>	<b>0.000%</b>	<b>1</b>	<b>36,593</b>	<b>0.002%</b>	<b>0</b>	<b>0.000%</b>	<b>2,363,962,396</b>

**SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION**

**OIL AND GAS RELATED WATER LICENCES**

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m <sup>3</sup> ) FOR LOCATIONS ACTIVE ON 12/31/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m <sup>3</sup> )	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m <sup>3</sup> )
<b>SIKANNI CHIEF RIVER</b> (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	0					3	3,117,689	0.386%	0	0.000%	807,771,692
Middle Sikanni Chief River	32	413,783	0.044%	70,240	0.007%	4	29,203	0.003%	302	0.000%	949,755,794
<b>Middle Sikanni Chief Total (incl. Upper Sikanni)</b>	<b>32</b>	<b>413,783</b>	<b>0.024%</b>	<b>70,240</b>	<b>0.004%</b>	<b>7</b>	<b>3,146,892</b>	<b>0.179%</b>	<b>302</b>	<b>0.000%</b>	<b>1,757,527,486</b>
Lower Sikanni Chief	19	200,042	0.023%	7,685	0.001%	0					875,678,142
<b>SIKANNI CHIEF TOTAL</b>	<b>51</b>	<b>613,825</b>	<b>0.023%</b>	<b>77,925</b>	<b>0.003%</b>	<b>7</b>	<b>3,146,892</b>	<b>0.120%</b>	<b>302</b>	<b>0.000%</b>	<b>2,633,205,628</b>
<b>FORT NELSON RIVER</b>											
Kahntah River	30	168,248	0.000%	2,660	0.001%	2	2,920	0.000%	1,815	0.000%	400,582,903
Fontas River	3	17,200	0.003%	4,200	0.001%	0					591,531,903
<b>Fontas Total (includes Kahntah)</b>	<b>33</b>	<b>185,448</b>	<b>0.019%</b>	<b>6,860</b>	<b>0.001%</b>	<b>2</b>	<b>2,920</b>	<b>0.000%</b>	<b>1,815</b>	<b>0.000%</b>	<b>992,114,806</b>
Klua Creek	0	0	0.000%	0		0					402,135,448
Upper Fort Nelson River	0	0	0.000%	0	0.000%	0					276,181,026
<b>Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)</b>	<b>84</b>	<b>799,273</b>	<b>0.019%</b>	<b>84,785</b>	<b>0.002%</b>	<b>9</b>	<b>3,149,812</b>	<b>0.073%</b>	<b>2,117</b>	<b>0.000%</b>	<b>4,303,636,908</b>
Snake River	1	4,200	0.001%	195	0.000%	0					310,763,522
Sahtaneh River	14	65,356	0.014%	595	0.000%	0					474,904,729
Middle Fort Nelson River	6	15,000	0.003%	6,987	0.001%	0					515,348,901
<b>Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)</b>	<b>112</b>	<b>918,929</b>	<b>0.007%</b>	<b>97,287</b>	<b>0.001%</b>	<b>10</b>	<b>3,186,405</b>	<b>0.026%</b>	<b>2,117</b>	<b>0.000%</b>	<b>12,314,371,343</b>
Kiwigana River	18	149,400	0.034%	1,866	0.000%	0					441,657,543
Lower Fort Nelson River	0					0					312,768,938
<b>FORT NELSON TOTAL</b>	<b>130</b>	<b>1,068,329</b>	<b>0.008%</b>	<b>99,153</b>	<b>0.001%</b>	<b>10</b>	<b>3,186,405</b>	<b>0.024%</b>	<b>2,117</b>	<b>0.000%</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>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

**SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION**

**OIL AND GAS RELATED WATER LICENCES**

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m <sup>3</sup> ) FOR LOCATIONS ACTIVE ON 12/31/2019	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m <sup>3</sup> )	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2019 (m <sup>3</sup> )	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m <sup>3</sup> )
<b>LIARD RIVER</b> con't											
<b>Middle Liard Total (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>0</b>	<b>0.000%</b>	<b>49,063,379,456</b>
Capot-Blanc Creek	0					0					183,879,851
Dunedin River	0					0					820,464,167
Lower Liard River	0					0					1,236,634,664
<b>LIARD TOTAL (incl. Fort Nelson)</b>	<b>130</b>	<b>1,068,329</b>	<b>0.002%</b>	<b>99,153</b>	<b>0.000%</b>	<b>10</b>	<b>3,186,405</b>	<b>0.005%</b>	<b>2,117</b>	<b>0.000%</b>	<b>64,373,155,962</b>
<b>PETITOT RIVER</b>											
Sahdoanah River	9	29,800	0.012%	4,023	0.002%	0					252,625,362
Upper Petitot River	31	73,200	0.005%	0	0.000%	0					1,476,579,488
Tsea River	27	198,734	0.046%	14,058	0.003%	0					434,062,484
Middle Petitot River	24	103,800	0.015%	0	0.000%	0					698,562,753
<b>Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)</b>	<b>91</b>	<b>405,534</b>	<b>0.014%</b>	<b>18,081</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>2,861,830,087</b>
Lower Petitot River	21	175,400	0.019%	1,210	0.000%	0					904,314,069
<b>PETITOT TOTAL</b>	<b>112</b>	<b>580,934</b>	<b>0.015%</b>	<b>19,291</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>3,766,144,156</b>
<b>HAY RIVER</b>											
Upper Kotcho River	0	0	0.000%	162	0.000%	0					311,519,217
Kyklo River	6	33,960	0.023%	1,825	0.001%	0					145,897,691
Shekilie River	27	158,940	0.035%	0	0.000%	0					450,747,494
Lower Kotcho River	4	10,065	0.003%	3,064	0.001%	0					311,519,217
<b>Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)</b>	<b>37</b>	<b>202,965</b>	<b>0.017%</b>	<b>5,051</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>1,219,683,619</b>
Hay River	29	198,500	0.037%	5,908	0.001%	0					538,672,352
<b>HAY TOTAL</b>	<b>66</b>	<b>401,465</b>	<b>0.023%</b>	<b>10,959</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>1,758,355,971</b>
<b>CHINCHAGA RIVER</b>											
Chinchaga River	41	279,100	0.255%	775	0.001%	0					109,492,680
<b>CHINCHAGA TOTAL</b>	<b>41</b>	<b>279,100</b>	<b>0.255%</b>	<b>775</b>	<b>0.001%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>109,492,680</b>
<b>OTHER (outside Northeast B.C.)</b>	<b>27</b>	<b>890,780</b>	<b>0.000%</b>	<b>19,002</b>	<b>0.000%</b>	<b>1</b>	<b>98,550</b>		<b>2,672</b>		N/A
<b>GRAND TOTAL</b>	<b>686</b>	<b>13,347,623</b>	<b>0.011%</b>	<b>1,281,115</b>	<b>0.001%</b>	<b>84</b>	<b>29,946,496</b>	<b>0.025%</b>	<b>2,767,043</b>	<b>0.002%</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>

For specific questions or enquiries  
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