

Quarterly Oil and Gas Water Management Summary



First Quarter 2021 (Jan - Mar)





PURPOSE

This *Quarterly Oil and Gas Water Management Summary* presents short-term water use and water licence data from the Q1 January to March 2021 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.



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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, gas and geothermal activities in British Columbia, including exploration, development, pipeline transportation and reclamation. We protect public safety and safeguard the environment while balancing a broad range of environmental, economic, and social considerations.

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.

From exploration through to final reclamation, we respect those affected by oil and gas activities, cooperating with partner agencies while working closely with communities, First Nations, and land owners, and confirming industry compliance with provincial legislation. We are committed to advancing reconciliation and establishing close working relationships with Indigenous peoples throughout the energy life cycle.



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 section 9 of 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 January to March of 2021, there were 300 short-term water use approvals in place, representing 974 withdrawal locations, held by 48 companies (Table 1).

The total water volume associated with short-term approvals active on the last day of the first quarter was 20,621,144 m³.

A total of 284,797 m³ was reported as withdrawn by oil and gas operators in the first quarter of 2021.

TABLE 1 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO MARCH 2021

	Q1
SHORT-TERM	Companies with Active Approvals
	48
	Active Approvals
	300
	Approved Withdrawal locations
	974
	Volume Available for Use (m ³)
	20,621,144
	Cumulative Volume Reported Withdrawn (m ³)
	284,797

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 first quarter of 2021, there were 103 active oil and gas related water licences, representing 108 withdrawal locations, held by 29 companies (Table 2).

The total annual volume available for use for water licences was 32,932,555 m³.

A total of 462,012 m³ of licenced water was reported withdrawn by the end of Q1. Companies with active withdrawals in Q1 are listed in Table 3.

TABLE 2 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO MARCH 2021

	Q1
WATER LICENCE	Companies with Active Water Licences
	29
	Active Water Licences
	103
	Licensed Withdrawal Locations
	108
	Annual Volume Available for Use for Water Licences (m ³)
	32,932,555
	Cumulative Volume Reported Withdrawn (m ³)
	462,012

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 JANUARY TO MARCH 2021

LICENCE #	LICENCEE	SOURCE	OGC WATER MGMT BASIN	ANNUAL APPROVAL (m ³ /YR)	2021 WATER USE (m ³ /YR)
C112155	Whitecap Resources Inc.	Peace River	Lower Peace River	1,825,000	160,177
C132688	Canadian Natural Resources Limited (CNRL)	Charlie Lake	Lower Beatton River	394,000	321
C133155	Pacific Canbriam Energy	Williston Lake	Peace Arm	3,650,000	64,087
C134471	Petronas Energy Canada	Sikanni Chief River	Upper Sikanni Chief	2,993,000	26,173
C500172	Tervita Corporation	Aquifer 634	Lower Peace River	36,500	757
C500226	Veresen Energy Pipeline	Aquifer 621	Smoky River	5,500	933
C500345	Ovintiv Canada ULC	Unnamed Creek	Lower Kiskatinaw	102,100	75,439
C501120	Canlin Energy Corp.	FSJ Aquifer	Upper Beatton River	1,825	36
C501398	Umbrella Oilfield Ltd.	Chrissy Creek/FSJ Aquifer	Cameron River	150,000	107,258
C501773	Black Swan Energy Ltd.	FSJ Aquifer	Upper Beatton River	19,710	983
C501793	CNRL	Aquifer 931	Milligan Creek	36,500	271
C501865	Boundry Lake Sand & Gravel Ltd.	FSJ Aquifer	Lower Peace River	10,950	195
C502134	Petronas Energy Canada	FSJ Aquifer	Cameron River	4,015	583
C502277	Peaceland Farm Ltd.	Aquifer 908	Lower Halfway River	360,000	2,435
C502448	CNRL	Dawson Creek Bedrock	Murray River	5,475	30
C502452	CNRL	FSJ Aquifer	Kahntah River	3,650	87
C502455	CNRL	Dawson Creek Aquifer	Smoky River	1,095	324
C502462	CNRL	FSJ Aquifer	Kahntah River	7,300	764
C502467	CNRL	FSJ Aquifer	Upper Beatton River	3,650	85
C502795	CNRL	Aquifer 451	Blueberry River	3,650	309
C502884	Peaceland Oilfield Services Ltd.	FSJ Aquifer/2 unnamed streams	Cameron River	32,290	15,390
C502900	Pineview Trucking & Excavating Ltd.	Unconsolidated Aquifer	Outside of NEBC	98,550	4,683
C503048	Albright Flush Systems	Aquifer 451	Cache Creek	2,920	685

TABLE 4 - SUMMARY OF WATER ALLOCATION
AND USE FOR OIL AND GAS ACTIVITIES IN 2020,
ORGANIZED BY OGC WATER MANAGEMENT BASIN
(Page 1 of 4)

MAJOR and Sub-Basin Name	OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10					OIL AND GAS RELATED WATER LICENCES - SECTION 9					
	NUMBER OF WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³)	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2021 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2021 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
BEATTON RIVER (sub-basin of Peace River)											
Upper Beatton River	18	695,410	0.139%	7,969	0.002%	19	2,355,519	0.472%	1,106	0.000%	499,408,440
Middle Beatton River	27	313,396	0.126%	32,171	0.013%	1	1,095	0.000%	0	0.000%	249,152,995
Middle Beatton Total (incl. Upper Beatton)	45	1,008,806	0.135%	40,140	0.005%	20	2,356,614	0.315%	1,106	0.000%	748,561,435
Milligan Creek	19	140,550	0.073%	742	0.000%	6	235,425	0.123%	271	0.006%	191,536,686
Blueberry River	42	1,006,506	0.343%	9,369	0.003%	4	198,925	0.068%	309	0.000%	293,278,540
Doig River	6	57,200	0.018%	669	0.000%	1	51,100	0.016%	0	0.000%	323,069,523
Lower Beatton River	25	155,738	0.113%	930	0.001%	1	394,000	0.285%	321	0.000%	138,262,629
BEATTON TOTAL	137	2,368,800	0.140%	51,850	0.003%	32	3,236,064	0.191%	2,007	0.000%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)											
Chowade River	0					0					327,027,527
Upper Halfway River	0					1	72,000	0.009%	0	0.000%	795,962,409
Upper Halfway Total (includes Chowade)	0	0	0.000%	0	0.000%	1	72,000	0.006%	0	0.000%	1,122,989,936
Graham River	1	2,400	0.000%	0	0.000%	0					860,627,172
Cameron River	43	1,412,696	0.632%	39,065	0.017%	19	1,111,919	0.497%	123,231	0.055%	223,679,567
Lower Halfway River	7	836,595	0.552%	0	0.000%	9	5,448,688	3.596%	2,436	0.002%	151,526,991
HALFWAY TOTAL	51	2,251,691	0.095%	39,065	0.002%	29	6,632,607	0.281%	125,667	0.005%	2,358,823,666
MOBERLY RIVER (sub-basin of Peace River)											
Moberly River	0					0					391,714,995
MOBERLY TOTAL	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	391,714,995
PINE RIVER (sub-basin of Peace River)											
Burnt River	1	39,000	0.005%	0	0.000%	0					737,930,022
Sukunka River	12	270,000	0.026%	0	0.000%	0					1,047,282,572
Sukunka River Total (includes Burnt)	13	309,000	0.017%	0	0.000%	0	0	0.000%	0	0.000%	1,785,212,594
Upper Pine River	1	18,000	0.001%	0	0.000%	0					1,466,884,035
Murray River	9	223,850	0.008%	3,863	0.000%	1	5,475	0.000%	31	0.000%	2,698,285,017
Lower Pine River	29	1,367,010	0.993%	4,812	0.003%	1	650,000	0.472%	0	0.000%	137,619,889
PINE TOTAL	52	1,917,860	0.032%	8,675	0.000%	2	655,475	0.011%	31	0.000%	6,088,001,535

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10

OIL AND GAS RELATED WATER LICENCES - SECTION 9

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³)	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2021 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2021 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
KISKATINAW RIVER (sub-basin of Peace River)											
West Kiskatinaw River	0					0					117,515,115
East Kiskatinaw River	0					0					105,452,962
Middle Kiskatinaw River	9	147,846	0.262%	11,891	0.021%	1	600,000	1.065%	0	0.000%	56,347,972
Middle Kiskatinaw Total (incl. West & East)	9	147,846	0.053%	11,891	0.004%	1	600,000	0.215%	0	0.000%	279,316,049
Lower Kiskatinaw River	40	1,667,426	1.860%	9,981	0.011%	9	2,948,317	3.288%	75,439	0.084%	89,659,847
KISKATINAW TOTAL	49	1,815,272	0.492%	21,872	0.006%	10	3,548,317	0.962%	75,439	0.020%	368,975,896
PEACE RIVER											
Peace Arm	0					3	9,125,000	N/A	64,088	N/A	N/A
Upper Peace River	1	510,000	0.001%	77,006	0.000%	0					36,423,413,429
Lynx Creek	0					0					30,436,635
Farrell Creek	5	314,412	0.345%	0	0.000%	0					91,018,843
Cache Creek	4	26,120	0.035%	0	0.000%	6	580,150	0.778%	685	0.001%	74,603,546
Pouce Coupe River	17	387,064	0.151%	0	0.000%	4	1,650,200	0.645%	0	0.000%	255,686,202
Lower Peace River	17	817,296	0.714%	0	0.000%	8	4,204,919	3.673%	161,130	0.141%	114,470,012
PEACE TOTAL (incl. Kisk/Pine/Moberly/Half/Beaton)	333	10,408,515	0.022%	198,468	0.000%	94	29,632,732	0.062%	429,047	0.001%	47,891,853,572
SMOKY RIVER											
Smoky River	3	27,000	0.001%	0	0.000%	2	6,595	0.000%	1,258	0.000%	2,669,506,123
SMOKY TOTAL	3	27,000	0.001%	0	0.000%	2	6,595	0.000%	1,258	0.000%	2,669,506,123
MUSKWA RIVER (sub-basin of Fort Nelson River)											
Upper Muskwa River	0					0					1,725,201,511
Middle Muskwa River	0					0					1,973,711,816
Middle Muskwa Total (incl. Upper Muskwa)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	3,698,913,327
Lower Muskwa River	0					0					646,841,560
MUSKWA TOTAL	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	4,345,754,887
PROPHET RIVER (sub-basin of Fort Nelson River)											
Upper Prophet River	0					1	36,593	0.002%	0	0.000%	1,470,271,289
Middle Prophet River	6	61,900	0.010%	150	0.000%	0					621,428,680
Middle Prophet Total (incl. Upper Prophet)	6	61,900	0.003%	150	0.000%	1	36,593	0.002%	0	0.000%	2,091,699,969
Lower Prophet River	1	7,800	0.003%	0	0.000%	0					272,262,427
PROPHET TOTAL	7	69,700	0.003%	150	0.000%	1	36,593	0.002%	0	0.000%	2,363,962,396

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10						OIL AND GAS RELATED WATER LICENCES - SECTION 9					
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SIKANNI CHIEF RIVER (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	4	50,000	0.006%	0	0.000%	3	3,117,689	0.386%	26,173	0.003%	807,771,692
Middle Sikanni Chief River	26	348,488	0.037%	22,284	0.002%	4	29,203	0.003%	0	0.000%	949,755,794
Middle Sikanni Chief Total (incl. Upper Sikanni)	30	398,488	0.023%	22,284	0.001%	7	3,146,892	0.179%	26,173	0.001%	1,757,527,486
Lower Sikanni Chief	25	209,480	0.024%	2,216	0.000%	0					875,678,142
SIKANNI CHIEF TOTAL	55	607,968	0.023%	24,500	0.001%	7	3,146,892	0.120%	26,173	0.001%	2,633,205,628
FORT NELSON RIVER											
Kahntah River	31	172,648	0.043%	0	0.000%	2	10,950	0.003%	851	0.000%	400,582,903
Fontas River	4	27,200	0.005%	0	0.000%	0					591,531,903
Fontas Total (includes Kahntah)	35	199,848	0.020%	0	0.000%	2	10,950	0.001%	851	0.000%	992,114,806
Klua Creek	0					0					402,135,448
Upper Fort Nelson River	0					0					276,181,026
Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)	90	807,816	0.019%	24,500	0.001%	9	3,157,842	0.073%	27,024	0.001%	4,303,636,908
Snake River	0					0					310,763,522
Sahtaneh River	9	30,500	0.006%	552	0.000%	0					474,904,729
Middle Fort Nelson River	7	30,230	0.006%	30	0.000%	0					515,348,901
Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)	113	938,246	0.008%	25,232	0.000%	10	3,194,435	0.026%	27,024	0.000%	12,314,371,343
Kiwigana River	9	68,400	0.015%	0	0.000%	0					441,657,543
Lower Fort Nelson River	0					0					312,768,938
FORT NELSON TOTAL	122	1,006,646	0.008%	25,232	0.000%	10	3,194,435	0.024%	27,024	0.000%	13,068,797,824
LIARD RIVER											
Muncho River	0					0					551,551,360
Upper Liard River	0					0					33,125,817,465
Upper Liard Total (incl. Muncho)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	33,677,368,825
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

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10

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LIARD RIVER con't											
Middle Liard Total (incl. Upper Liard Total, Grayling, Upper Toad, Racing, Lower Toad, Beaver)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	49,063,379,456
Capot-Blanc Creek	0					0					183,879,851
Dunedin River	0					0					820,464,167
Lower Liard River	4	52,000	0.004%	21,255	0.002%	0					1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	126	1,058,646	0.002%	46,487	0.000%	10	3,194,435	0.005%	27,024	0.000%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	27	85,000	0.034%	3,094	0.001%	0					252,625,362
Upper Petitot River	47	165,400	0.011%	1,214	0.000%	0					1,476,579,488
Tsea River	36	208,234	0.048%	245	0.000%	0					434,062,484
Middle Petitot River	13	62,600	0.009%	285	0.000%	0					698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	123	521,234	0.018%	4,838	0.000%	0	0	0.000%	0	0.000%	2,861,830,087
Lower Petitot River	33	443,400	0.049%	1,430	0.000%	0					904,314,069
PETITOT TOTAL	156	964,634	0.026%	6,268	0.000%	0	0	0.000%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	0					0					311,519,217
Kyklo River	2	26,720	0.018%	0	0.000%	0					145,897,691
Shekilie River	41	379,920	0.084%	112	0.000%	0					450,747,494
Lower Kotcho River	3	14,400	0.005%	0	0.000%	0					311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	46	418,040	0.034%	112	0.000%	0	0	0.000%	0	0.000%	1,219,683,619
Hay River	28	212,300	0.039%	2,158	0.000%	0					538,672,352
HAY TOTAL	74	630,340	0.036%	2,270	0.000%	0	0	0.000%	0	0.000%	1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	41	279,100	0.255%	1,104	0.001%	0					109,492,680
CHINCHAGA TOTAL	41	279,100	0.255%	1,104	0.001%	0	0	0.000%	0	0.000%	109,492,680
OTHER (outside Northeast B.C.)	241	7,252,909	N/A	30,200	N/A	2	98,793	N/A	4,683	N/A	N/A
GRAND TOTAL	974	20,621,144	0.017%	284,797	0.000%	108	32,932,555	0.027%	462,012	0.000%	120,568,508,464



PREVIOUS REPORTS

Previous annual water reports and quarterly updates are available on the Commission's website at: <https://www.bcogc.ca/data-reports>.

For questions regarding this report, please contact: OGC.Communications@bcogc.ca