

Quarterly Oil and Gas Water Use Summary



First Quarter 2015 (Jan - Mar)



PURPOSE

This *Quarterly Oil and Gas Water Use Summary* presents short-term water use and water licence data from the Q1 January to March 2015 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.

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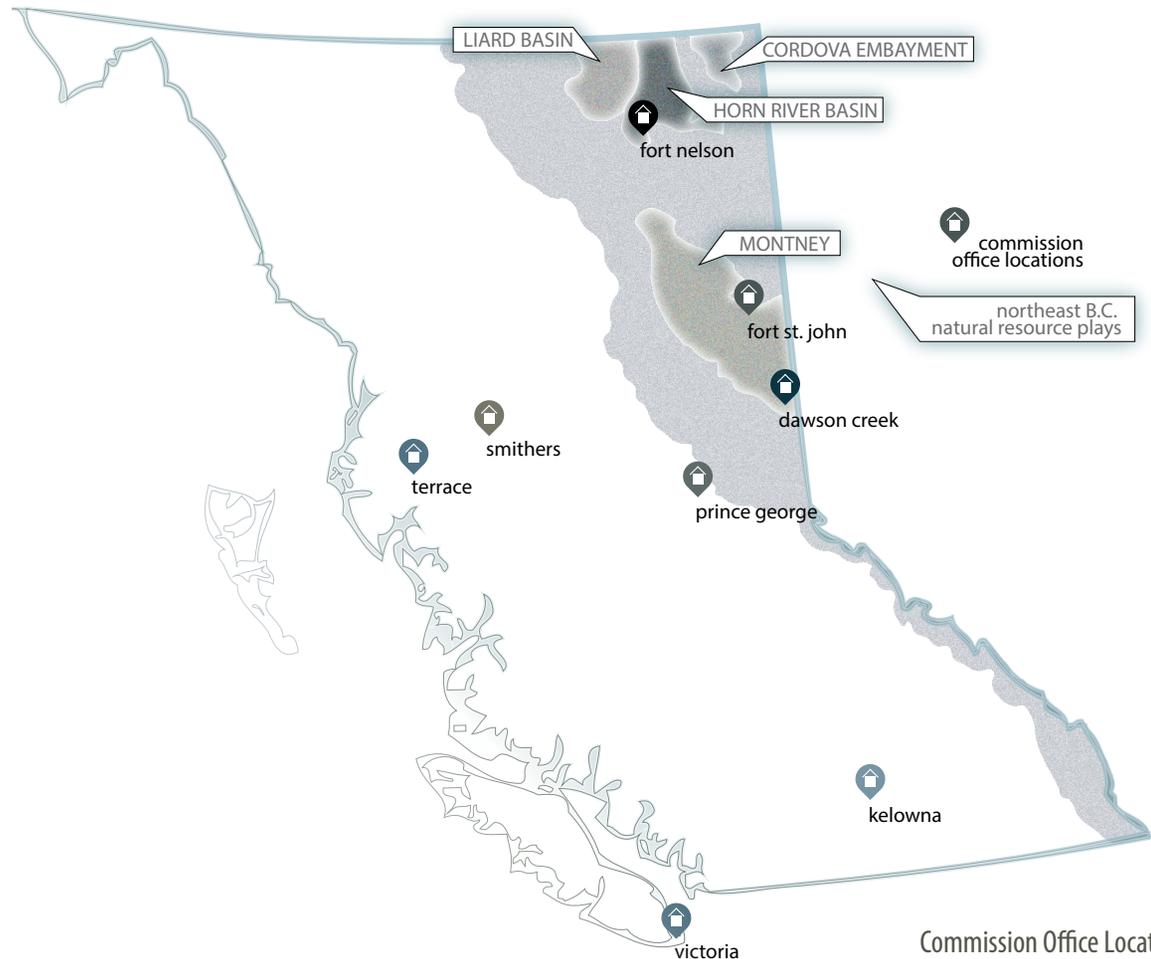
BC OIL AND GAS COMMISSION

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.

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.

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 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 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 also access water by means currently outside of regulatory oversight:



- **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.

LONG-TERM WATER LICENCES AND USE

In the first quarter of 2015, there were 18 active oil and gas related water licences, representing 33 withdrawal locations, held by eight companies (Table 1).

The total annual licenced water volume was 20,048,135 m³.

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 587,562 m³ of licenced water was reported as used in the first three months of the year by four companies (Table 1, 2, 3).

A break-down of water licence allocation and use by OGC Water Management Basin is listed in Table 6 on page 8.

TABLE 3:
OIL AND GAS RELATED
WATER LICENCES THAT
WITHDREW WATER IN 2015 - Q1

		Q1
WATER LICENCE	Companies with Active Water Licences	8
	Active Water Licences	18
	Licensed Withdrawal Locations	33
	Annual Volume Available for Use for Water Licences (m ³)	20,048,135
	Cumulative Volume Reported Used in 2015 (m ³)	587,562

	Q1	Q2	Q3	Q4	SUM
2014	246,887	1,143,170	812,534	595,969	2,798,560
2015	587,562				587,562

LICENCE #	LICENCEE	SOURCE	OGC WATER MANAGEMENT BASIN	ANNUAL APPROVAL (m ³ /YR)	2015 WATER USE (m ³ /YR)
C112155	Whitecap Resources	Peace River	Lower Peace River	1,825,000	146,551
C126568	Progress Energy Ltd.	Williston Lake	Peace Arm	3,650,000	4,922
C126877	Canadian Natural Resources Limited	Charlie Lake	Lower Beatton River	394,000	11,320
C127223	Canbriam Energy Inc.	Williston Lake	Peace Arm	3,650,000	80,780
C131230	Progress Energy Ltd.	Sikanni Chief River	Upper Sikanni Chief River	2,993,000	343,989

SHORT-TERM WATER APPROVAL AND USE

During January to March of 2015, there were a total of 295 short-term water use approvals in place, representing 1,068 withdrawal locations, held by 56 companies (Table 4).

The total water volume associated with short-term approvals that were active on the last day of the quarter was 11,094,777 m³.

A total of 264,527 m³ was reported as used by oil and gas operators for the first three months of the year (Table 4, 5).

A break-down of short-term water approval and use by OGC Water Management Basin is listed in Table 6 on page 8.

TABLE 4 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO MARCH 2015

		Q1
SHORT-TERM	Companies with Active Section 8 Approvals	56
	Active Section 8s	295
	Approved Withdrawal locations for Section 8s	1,068
	Volume Available for Use for Section 8s (m ³)	11,094,777
	Cumulative Volume Reported Withdrawn for Section 8s (m ³)	264,527

TABLE 5 - QUARTERLY WATER WITHDRAWALS (m³) FROM SECTION 8 APPROVALS, 2011 Q1 - 2015 Q1

	Q1	Q2	Q3	Q4	SUM
2011	782,388	662,767	1,266,317	1,100,613	3,812,085
2012	1,345,289	982,376	1,088,192	340,607	3,756,464
2013	1,077,316	482,054	612,542	728,607	2,900,519
2014	1,136,552	568,342	627,318	178,461	2,510,673
2015	264,527				

TABLE 6 - SUMMARY OF WATER ALLOCATION AND USE FOR OIL AND GAS ACTIVITIES IN 2015, ORGANIZED BY OGC WATER MANAGEMENT BASIN (Page 1 of 4)

SECTION 8 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 ³) FOR LOCATIONS ACTIVE ON 3/31/2015	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2015 (m ³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m ³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2015 (m ³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m ³)
BEATTON RIVER (sub-basin of Peace River)											
Upper Beatton River	60	1,359,806	0.272%	47,299	0.009%	0					499,408,440
Middle Beatton River	19	179,150		4,130		0					249,152,995
Middle Beatton Total (incl. Upper Beatton)	79	1,538,956	0.206%	51,429	0.007%	0	0	0.000%			748,561,435
Milligan Creek	11	171,340	0.089%	2,208	0.001%	0					191,536,686
Blueberry River	60	402,227	0.137%	429	0.000%	0					293,278,540
Doig River	6	1,000	0.000%	0	0.000%	0					323,069,523
Lower Beatton River	0	0		0		1	394,000		11,320		138,262,629
BEATTON TOTAL	156	2,113,523	0.125%	54,066	0.003%	1	394,000	0.023%	11,320	0.001%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)											
Chowade River	0					0					327,027,527
Upper Halfway River	2	150,000		0		0					795,962,409
Upper Halfway Total (includes Chowade)	2	150,000	0.013%	0	0.000%	0	0	0.000%	0	0.000%	1,122,989,936
Graham River	3	1,279,900	0.149%	0	0.000%	0					860,627,172
Cameron River	48	819,409	0.366%	8,917	0.004%	0					223,679,567
Lower Halfway River	20	1,757,137		2,170		0					151,526,991
HALFWAY TOTAL	73	4,006,446	0.170%	11,087	0.000%	0	0	0.000%	0	0.000%	2,358,823,666
MOBERLY RIVER (sub-basin of Peace River)											
Moberly River	0	0		0		0					391,714,995
MOBERLY TOTAL	0	0	0.000%	0	0.000%	0	0	0.000%			391,714,995
PINE RIVER (sub-basin of Peace River)											
Burnt River	3	13,080	0.002%	0	0.000%	0					737,930,022
Sukunka River	2	10,000		0		0					1,047,282,572
Sukunka River Total (includes Burnt)	5	23,080	0.001%	0	0.000%	0	0	0.000%	0	0.000%	1,785,212,594
Upper Pine River	3	0	0.000%	0	0.000%	0					1,466,884,035
Murray River	24	100,644	0.004%	0	0.000%	7	25,000	0.001%	0	0.000%	2,698,285,017
Lower Pine River	34	1,341,122		73,019		0					137,619,889
PINE TOTAL	66	1,464,846	0.019%	73,019	0.001%	7	25,000	0.000%	0	0.000%	6,088,001,535

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KISKATINAW RIVER (sub-basin of Peace River)											
West Kiskatinaw River	2	7,000	0.006%	0	0.000%	0					117,515,115
East Kiskatinaw River	17	102,600	0.097%	0	0.000%	0					105,452,962
Middle Kiskatinaw River	11	105,072		96		0					56,347,972
Middle Kiskatinaw Total (incl. West & East)	30	214,672	0.077%	96	0.000%	0	0	0.000%	0	0.000%	279,316,049
Lower Kiskatinaw River	5	74,534		505	0.001%	1	400,000		0		89,659,847
KISKATINAW TOTAL	35	289,206	0.078%	601	0.000%	1	400,000	0.108%	0	0.000%	368,975,896
PEACE RIVER											
Peace Arm	1	0	N/A	0	N/A	2	7,300,000	N/A	85,702	N/A	N/A
Upper Peace River	0					0					36,423,413,429
Lynx Creek	0					0					30,436,635
Farrell Creek	6	40,706	0.045%	0	0.000%	0					91,018,843
Cache Creek	4	24,000	0.032%	0	0.000%	1	185,000	0.248%	0	0.000%	74,603,546
Pouce Coupe River	1	0	0.000%	0	0.000%	1	2,000	0.001%	0	0.000%	255,686,202
Lower Peace River	5	0		9,323		3	3,067,469		146,551		114,470,012
PEACE TOTAL (incl. Kisk/Pine/Moberly/Half/Beaton)	347	7,938,727	0.017%	148,096	0.000%	16	11,373,469	0.024%	243,573	0.001%	47,891,853,572
SMOKY RIVER											
Smoky River	37	185,200		0	0.000%	1	2,500	0.000%			2,669,506,123
SMOKY TOTAL	37	185,200	0.007%	0	0.000%	1	2,500	0.000%	0	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				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	8	70,330	0.005%	0	0.000%	0					1,470,271,289
Middle Prophet River	5	19,500		765		0					621,428,680
Middle Prophet Total (incl. Upper Prophet)	13	89,830	0.004%	765	0.000%	0	0	0.000%	0	0.000%	2,091,699,969
Lower Prophet River	14	41,800		1,581		0					272,262,427
PROPHET TOTAL	27	131,630	0.006%	2,346	0.000%	0	0	0.000%	0	0.000%	2,363,962,396

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SIKANNI CHIEF RIVER (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	2	75,000	0.009%	0	0.000%	1	2,993,000	0.371%	343,989	0.043%	807,771,692
Middle Sikanni Chief River	39	407,317		2,046		0					949,755,794
Middle Sikanni Chief Total (incl. Upper Sikanni)	41	482,317	0.027%	2,046	0.000%	1	2,993,000	0.170%	343,989	0.020%	1,757,527,486
Lower Sikanni Chief	17	14,173		1,230		0					875,678,142
SIKANNI CHIEF TOTAL	58	496,490	0.019%	3,276	0.000%	1	2,993,000	0.114%	343,989	0.013%	2,633,205,628
FORT NELSON RIVER											
Kahntah River	6	0	0.000%	215	0.000%	0					400,582,903
Fontas River	18	450		573		0					591,531,903
Fontas Total (includes Kahntah)	24	450	0.000%	788	0.000%	0	0	0.000%	0	0.000%	992,114,806
Klua Creek	10	55,600	0.014%	17,862	0.004%	0					402,135,448
Upper Fort Nelson River	26	101,500		15,883		0					276,181,026
Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)	118	654,040	0.015%	37,809	0.001%	1	2,993,000	0.070%	343,989	0.008%	4,303,636,908
Snake River	13	40,200	0.013%	20	0.000%	0					310,763,522
Sahtaneh River	50	190,200	0.040%	3,435	0.001%	2	40,000	0.008%	0	0.000%	474,904,729
Middle Fort Nelson River	11	43,700		0		1	3,000,000		0		515,348,901
Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)	219	1,059,770	0.009%	43,610	0.000%	4	6,033,000	0.049%	343,989	0.003%	12,314,371,343
Kiwigana River	20	44,800	0.010%	3,273	0.001%	5	42,500	0.010%			441,657,543
Lower Fort Nelson River	21	134,792		0		0					312,768,938
FORT NELSON TOTAL	260	1,239,362	0.009%	46,883	0.000%	9	6,075,500	0.046%	343,989	0.003%	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

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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	29	307,230	0.167%	6,745	0.004%	0					183,879,851
Dunedin River	23	124,775	0.015%	0	0.000%	0					820,464,167
Lower Liard River	19	290,000		45,508		0					1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	331	1,961,367	0.003%	99,136	0.000%	9	6,075,500	0.009%	343,989	0.001%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	24	53,966	0.021%	1,853	0.001%	0					252,625,362
Upper Petitot River	56	158,078	0.011%	2,830	0.000%	0					1,476,579,488
Tsea River	27	32,904	0.008%	5,111	0.001%	4	2,540,000	0.585%	0	0.000%	434,062,484
Middle Petitot River	16	35,795		1,482		2	26,666				698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	123	280,743	0.010%	11,276	0.000%	6	2,566,666	0.090%	0	0.000%	2,861,830,087
Lower Petitot River	23	112,757		3,521		1	30,000				904,314,069
PETITOT TOTAL	146	393,500	0.010%	14,797	0.000%	7	2,596,666	0.069%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	4	16,600	0.005%	0	0.000%	0					311,519,217
Kyklo River	36	184,300	0.126%	0	0.000%	0					145,897,691
Shekilie River	28	186,610	0.041%	107	0.000%	0					450,747,494
Lower Kotcho River	4	6,000		660		0					311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	72	393,510	0.032%	767	0.000%	0	0	0.000%	0	0.000%	1,219,683,619
Hay River	29	162,000		1,419		0					538,672,352
HAY TOTAL	101	555,510	0.032%	2,186	0.000%	0	0	0.000%	0	0.000%	1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	29	28,500	0.026%	312	0.000%	0					109,492,680
CHINCHAGA TOTAL	29	28,500	0.026%	312	0.000%	0	0	0.000%	0	0.000%	109,492,680
OTHER (outside Northeast B.C.)	77	31,973	N/A	0	N/A	0	0	N/A			N/A
GRAND TOTAL	1,068	11,094,777	0.009%	264,527	0.000%	33	20,048,135	0.017%	587,562	0.000%	120,568,508,464



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
regarding this data, please contact:

Jonathan Boyd, P.Ge
Hydrology Technician
Jonathan.Boyd@bcogc.ca
