

Quarterly Oil and Gas Water Use Summary



Third Quarter 2015 (July - September)



PURPOSE

This *Quarterly Oil and Gas Water Use Summary* presents short-term water use and water licence data from the Q3 July to September 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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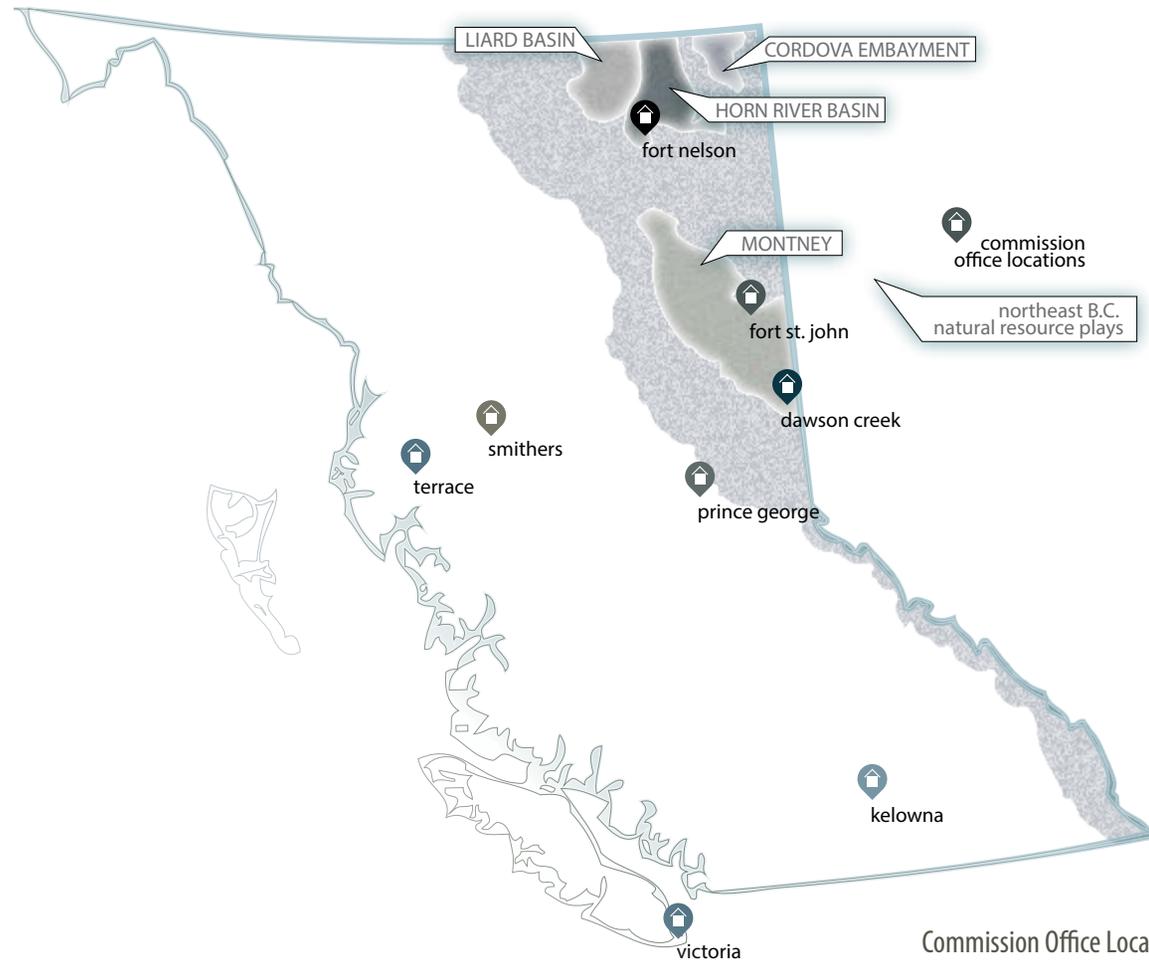
BC OIL AND GAS COMMISSION

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

At the end of the third quarter of 2015, there were 16 active oil and gas related water licences, representing 31 withdrawal locations, held by seven companies (Table 1).

The total annual licenced water volume was 14,548,135 m³.

Mandatory reporting of water use under water licence has been a requirement since 2014. A total of 1,552,989 m³ of licenced water was reported as used in the first three quarters of the year by four companies (Table 1, 2, 3).

On September 3, the Environmental Appeal Board released a decision to cancel water licence C127986 belonging to Nexen Inc. on North Tsea Lake. The water licence was issued by the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) on May 11, 2012. It had an annual approval volume of 2,500,000 m³. Nexen did not withdraw water under this licence in 2015. The full-text of the decision can be found [here](#).

On Oct. 1, Encana Corporation canceled water licence C129170 on the Fort Nelson River. It was issued Mar. 3, 2014 by FLRNO. The licence had an annual approval volume of 3,000,000 m³. Encana

TABLE 1 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO SEPTEMBER 2015

	Q1	Q2	Q3
WATER LICENCE			
Companies with Active Water Licences	8	8	7
Active Water Licences	18	18	16
Licensed Withdrawal Locations	33	33	31
Annual Volume Available for Use for Water Licences (m ³)	20,048,135	20,048,135	14,548,135
Cumulative Volume Reported Used in 2015 (m ³)	587,562	945,592	1,552,989

TABLE 2 - QUARTERLY WATER WITHDRAWALS (m³) FROM WATER LICENCES, 2014 Q1 - 2015 Q3

	Q1	Q2	Q3	Q4	SUM
2014	246,887	1,143,170	812,534	595,969	2,798,560
2015	587,562	358,030	607,397		1,552,989

TABLE 3: OIL AND GAS RELATED WATER LICENCES THAT WITHDREW WATER FROM JANUARY TO SEPTEMBER 2015

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	409,566
C126568	Progress Energy Ltd.	Williston Lake	Peace Arm	3,650,000	28,992
C126877	Canadian Natural Resources Limited	Charlie Lake	Lower Beatton River	394,000	34,982
C127223	Canbriam Energy Inc.	Williston Lake	Peace Arm	3,650,000	285,511
C131230	Progress Energy Ltd.	Sikanni Chief River	Upper Sikanni Chief River	2,993,000	793,938

reported not withdrawing any water while this licence was active.

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

SHORT-TERM WATER APPROVAL AND USE

During July to September of 2015, there were a total of 201 short-term water use approvals in place, representing 918 withdrawal locations, held by 48 companies (Table 4).

The total water volume associated with short-term approvals that were active on the last day of the quarter was 10,482,748 m³.

A total of 1,561,016 m³ was reported as used by oil and gas operators for the first nine 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.

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

	Q1	Q2	Q3
SHORT-TERM Companies with Active Section 8 Approvals	56	49	48
Active Section 8s	295	210	201
Approved Withdrawal Locations for Section 8s	1,068	910	918
Volume Available for Use for Section 8s (m ³)	11,094,777	11,427,058	10,482,748
Cumulative Volume Reported Used in 2015 (m ³)	264,895	533,935	1,561,016

TABLE 5 - QUARTERLY WATER WITHDRAWALS (m³) FROM SECTION 8 APPROVALS, 2011 Q1 - 2015 Q3

	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	264,895	269,040	1,027,081		1,561,016



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:

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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 09/30/2015	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	36	1,321,816	0.265%	411,628	0.082%	0					499,408,440
Middle Beatton River	19	179,150		34,661		0					249,152,995
Middle Beatton Total (incl. Upper Beatton)	55	1,500,966	0.201%	446,289	0.060%	0	0	0.000%			748,561,435
Milligan Creek	11	161,340	0.084%	2,208	0.001%	0					191,536,686
Blueberry River	54	415,742	0.142%	60,987	0.021%	0		0.000%			293,278,540
Doig River	2	1,000	0.000%	0	0.000%	0		0.000%			323,069,523
Lower Beatton River	0	0		0		1	394,000		34,982		138,262,629
BEATTON TOTAL	122	2,079,048	0.123%	509,484	0.030%	1	394,000	0.023%	34,982	0.002%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)											
Chowade River	0					0					327,027,527
Upper Halfway River	6	202,550		0		0					795,962,409
Upper Halfway Total (includes Chowade)	6	202,550	0.018%	0	0.000%	0	0	0.000%			1,122,989,936
Graham River	4	1,281,400	0.149%	0	0.000%	0					860,627,172
Cameron River	28	863,859	0.386%	231,478	0.103%	0					223,679,567
Lower Halfway River	17	1,656,137		17,291		0					151,526,991
HALFWAY TOTAL	55	4,003,946	0.170%	248,769	0.011%	0	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	1	10,000	0.001%	0	0.000%	0					737,930,022
Sukunka River	3	30,000		0		0					1,047,282,572
Sukunka River Total (includes Burnt)	4	40,000	0.002%	0	0.000%	0	0	0.000%			1,785,212,594
Upper Pine River	0	0	0.000%	0	0.000%	0					1,466,884,035
Murray River	8	36,096	0.001%	120	0.000%	7	25,000	0.001%	0	0.000%	2,698,285,017
Lower Pine River	32	872,026		123,280		0					137,619,889
PINE TOTAL	44	948,122	0.019%	123,400	0.002%	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	2,000	0.002%	0	0.000%	0					117,515,115
East Kiskatinaw River	7	8,800	0.008%	0	0.000%	0					105,452,962
Middle Kiskatinaw River	9	89,536		38,838		0					56,347,972
Middle Kiskatinaw Total (incl. West & East)	18	100,336	0.036%	38,838	0.014%	0	0	0.000%			279,316,049
Lower Kiskatinaw River	5	40,108		3,410	0.004%	1	400,000		0		89,659,847
KISKATINAW TOTAL	23	140,444	0.038%	42,248	0.011%	1	400,000	0.108%	0	0.000%	368,975,896
PEACE RIVER											
Peace Arm	1	20,000	N/A		N/A	2	7,300,000	N/A	314,503	N/A	N/A
Upper Peace River	0					0					36,423,413,429
Lynx Creek	0					0					30,436,635
Farrell Creek	5	40,706	0.045%	150	0.000%	0					91,018,843
Cache Creek	2	24,000	0.032%	0	0.000%	1	185,000	0.248%	0		74,603,546
Pouce Coupe River	0					1	2,000	0.001%	0		255,686,202
Lower Peace River	1	0		9,323		3	3,067,469		409,566		114,470,012
PEACE TOTAL (incl. Kisk/Pine/Moberly/Half/Beaton)	253	7,256,266	0.015%	933,374	0.002%	16	11,373,469	0.024%	759,051	0.002%	47,891,853,572
SMOKY RIVER											
Smoky River	29	81,200		0	0.000%	1	2,500	0.000%			2,669,506,123
SMOKY TOTAL	29	81,200	0.003%	0	0.000%	1	2,500	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%			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%			4,345,754,887
PROPHET RIVER (sub-basin of Fort Nelson River)											
Upper Prophet River	7	70,330	0.005%	23,411	0.002%	0					1,470,271,289
Middle Prophet River	5	19,500		765		0					621,428,680
Middle Prophet Total (incl. Upper Prophet)	12	89,830	0.004%	24,176	0.001%	0	0	0.000%			2,091,699,969
Lower Prophet River	6	36,400		1,581		0					272,262,427
PROPHET TOTAL	18	126,230	0.005%	25,757	0.001%	0	0	0.000%			2,363,962,396

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SIKANNI CHIEF RIVER (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	1	75,000	0.009%	33,165	0.004%	1	2,993,000	0.371%	793,938	0.098%	807,771,692
Middle Sikanni Chief River	36	441,004		14,628		0					949,755,794
Middle Sikanni Chief Total (incl. Upper Sikanni)	37	516,004	0.029%	47,793	0.003%	1	2,993,000	0.170%	793,938	0.045%	1,757,527,486
Lower Sikanni Chief	9	14,173		1,275		0					875,678,142
SIKANNI CHIEF TOTAL	46	530,177	0.020%	49,068	0.002%	1	2,993,000	0.114%	793,938	0.030%	2,633,205,628
FORT NELSON RIVER											
Kahntah River	0	0	0.000%	215	0.000%	0					400,582,903
Fontas River	2	450		573		0					591,531,903
Fontas Total (includes Kahntah)	2	450	0.000%	788	0.000%	0	0	0.000%	0	0.000%	992,114,806
Klua Creek	10	16,800	0.004%	17,990	0.004%	0					402,135,448
Upper Fort Nelson River	26	97,300		16,139		0					276,181,026
Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)	84	644,727	0.015%	83,985	0.002%	1	2,993,000	0.070%	793,938	0.018%	4,303,636,908
Snake River	13	40,200	0.013%	1,848	0.001%	0					310,763,522
Sahtaneh River	52	223,200	0.047%	6,783	0.001%	2	40,000	0.008%	0	0.000%	474,904,729
Middle Fort Nelson River	10	35,300		0		0			0		515,348,901
Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)	177	1,069,657	0.009%	118,373	0.001%	3	3,033,000	0.025%	793,938	0.006%	12,314,371,343
Kiwigana River	12	43,000	0.010%	9,395	0.002%	5	42,500	0.010%			441,657,543
Lower Fort Nelson River	20	97,892		14,476		0					312,768,938
FORT NELSON TOTAL	209	1,210,549	0.009%	142,244	0.001%	8	3,075,500	0.024%	793,938	0.006%	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%			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%			49,063,379,456
Capot-Blanc Creek	28	481,715	0.262%	237,485	0.129%	0					183,879,851
Dunedin River	16	30,000	0.004%	0	0.000%	0					820,464,167
Lower Liard River	21	646,681		220,844		0					1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	274	2,368,945	0.004%	600,573	0.001%	8	3,075,500	0.005%	793,938	0.001%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	22	30,950	0.012%	5,406	0.002%	0					252,625,362
Upper Petitot River	56	149,938	0.010%	4,918	0.000%	0					1,476,579,488
Tsea River	23	23,400	0.005%	5,111	0.001%	2	20,000	0.005%	0	0.000%	434,062,484
Middle Petitot River	12	22,575		1,482		2	26,666				698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	113	226,863	0.008%	16,917	0.001%	4	46,666	0.002%	0	0.000%	2,861,830,087
Lower Petitot River	25	65,000		3,521		2	50,000				904,314,069
PETITOT TOTAL	138	291,863	0.008%	20,438	0.001%	6	96,666	0.003%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	5	9,000	0.003%	816	0.000%	0					311,519,217
Kyklo River	36	58,800	0.040%	16	0.000%	0					145,897,691
Shekilie River	28	180,610	0.040%	206	0.000%	0					450,747,494
Lower Kotcho River	3	0		660		0					311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	72	248,410	0.020%	1,698	0.000%	0	0	0.000%			1,219,683,619
Hay River	27	172,700		1,419		0					538,672,352
HAY TOTAL	99	421,110	0.024%	3,117	0.000%	0	0	0.000%			1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	28	28,500	0.026%	312	0.000%	0					109,492,680
CHINCHAGA TOTAL	28	28,500	0.026%	312	0.000%	0	0	0.000%			109,492,680
OTHER (outside Northeast B.C.)	97	34,864		3,202		0	0				N/A
GRAND TOTAL	918	10,482,748	0.009%	1,561,016	0.001%	31	14,548,135	0.012%	1,552,989	0.001%	120,568,508,464