

# Capturing the Clearwater

The Clearwater heavy oil resource play in northern Alberta, pioneered by private operator Spur Resources, has seen rapid growth in the last five years with production climbing from a little over 4,300 bbls/d in 2017 to exit 2021 at almost 60,000 bbls/d.

Developed using multilateral wells without stimulation, the Clearwater presents compelling economics and quick return on investment. Well licensing and drilling skyrocketed in 2021 as operators moved to take advantage of rising oil prices. Consolidation in the Clearwater continues while exploration to expand the play from its base at Marten Hills and Nipisi accelerates.

Daily Oil Bulletin

Data provided by:

## Building a Land Position

### LAND SALES

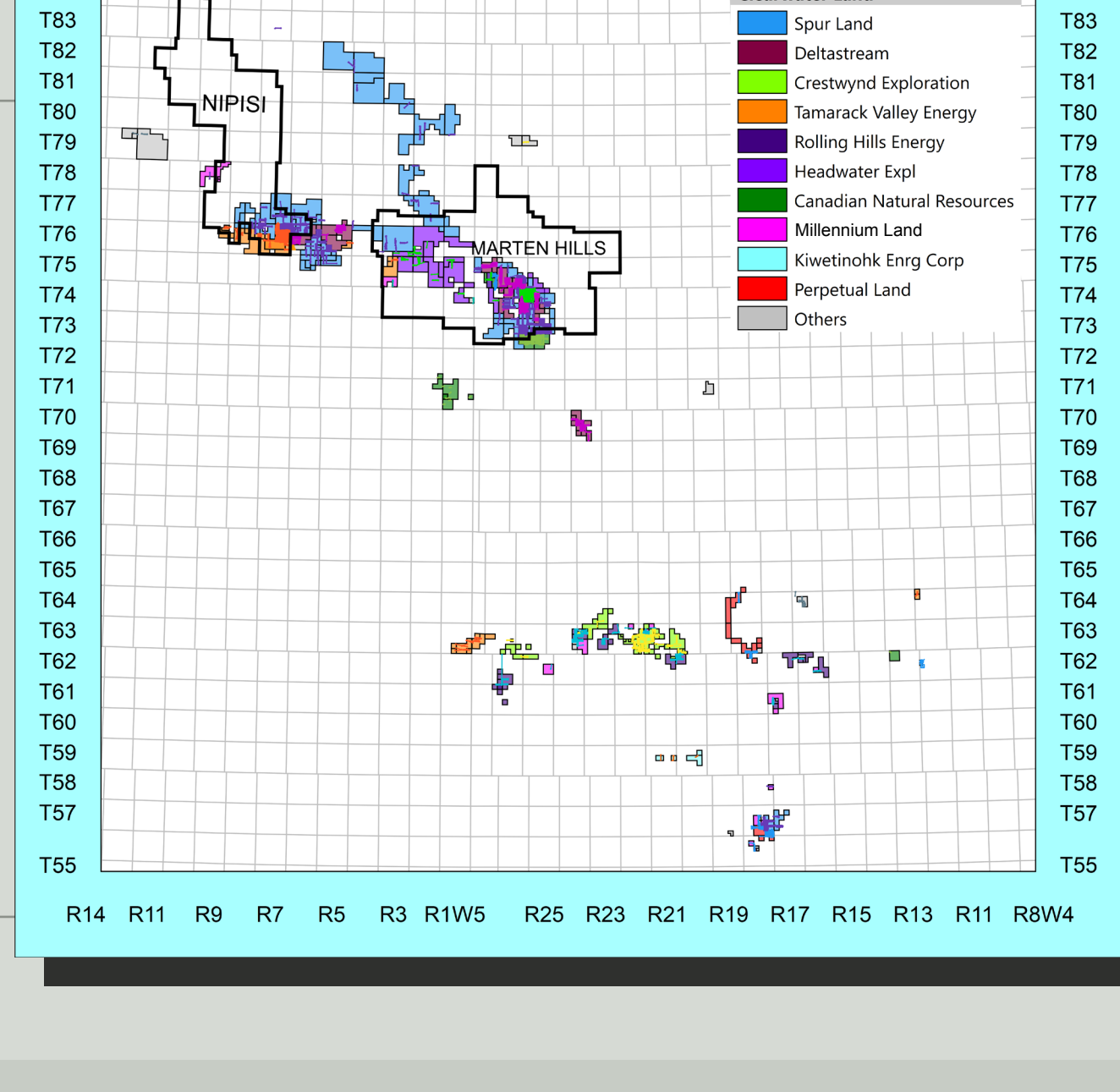
Operators have leased close to

**330,00 hectares** (814,400 acres)

in the core Clearwater areas at Marten Hills, Nipisi and the South play area at an average cost of

**\$473/ha** (\$191.63/acre)

Source: geoSCOUT



### MERGERS & ACQUISITIONS

There have been over **\$450 million** in deals specifically targeting the Clearwater since 2017.

Tamarack Valley has been the major consolidator in the play, spending almost **\$300 million**

expanding its presence.

#### Major Corporate Deals

ACQUIRER	TARGET COMPANY	TOTAL ACQUISITION COST (C\$ MILLION)
Tamarack Valley Energy Ltd.	Crestwynd Exploration Ltd.	185
Tamarack Valley Energy Ltd.	Unspecified	36
Rubellite Energy Inc.	Perpetual Energy Inc.	60
Tamarack Valley Energy Ltd.	Woodcate Oil Corp. Highwood Oil Company Ltd.	74
Headwater Exploration Inc.	Cenovus Energy Inc.	99

Source: Evaluate Energy

### ROYALTY DEALS PROVIDE UNIQUE FINANCING

Around **\$370 million** in royalty deals have been executed in the Clearwater since 2017. The deals

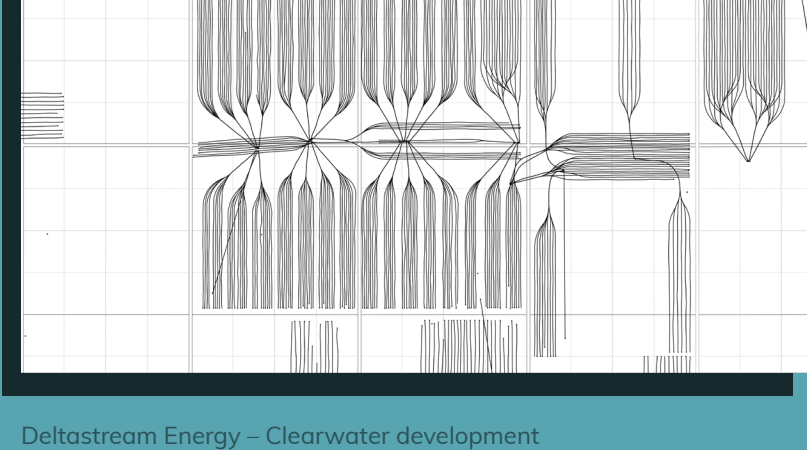
provide operators with capital to fund development in tight financial markets while generating cash flow for royalty companies.

#### Major Royalty Deals

ACQUIRER	TARGET COMPANY	TOTAL ACQUISITION COST (C\$ MILLION)
Topaz Energy Corp.	Unspecified	50
PrairieSky Royalty Ltd.	Spur Petroleum Ltd.	155
PrairieSky Royalty Ltd.	Unspecified	33
Topaz Energy Corp.	Cenovus Energy Inc.	102
Topaz Energy Corp.	Tamarack Valley Energy Ltd.	14
Topaz Energy Corp.	Tamarack Valley Energy Ltd.	16

Source: Evaluate Energy

## Multilateral well construction makes economical development possible



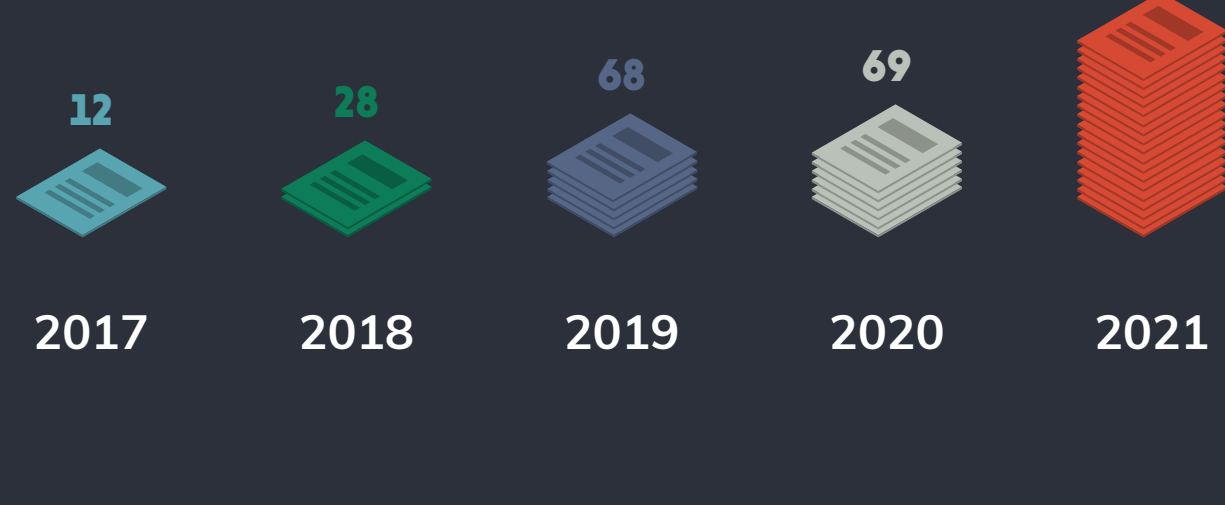
DeltaStream Energy - Clearwater development  
Source: geoSCOUT

The Clearwater is being developed using multilateral horizontal wells with no stimulation. While operators are testing different patterns of horizontal legs, the average well has six legs with horizontal lengths of around one mile. The goal is to expose as much of the reservoir as possible to production.

## Activity Levels Heating Up

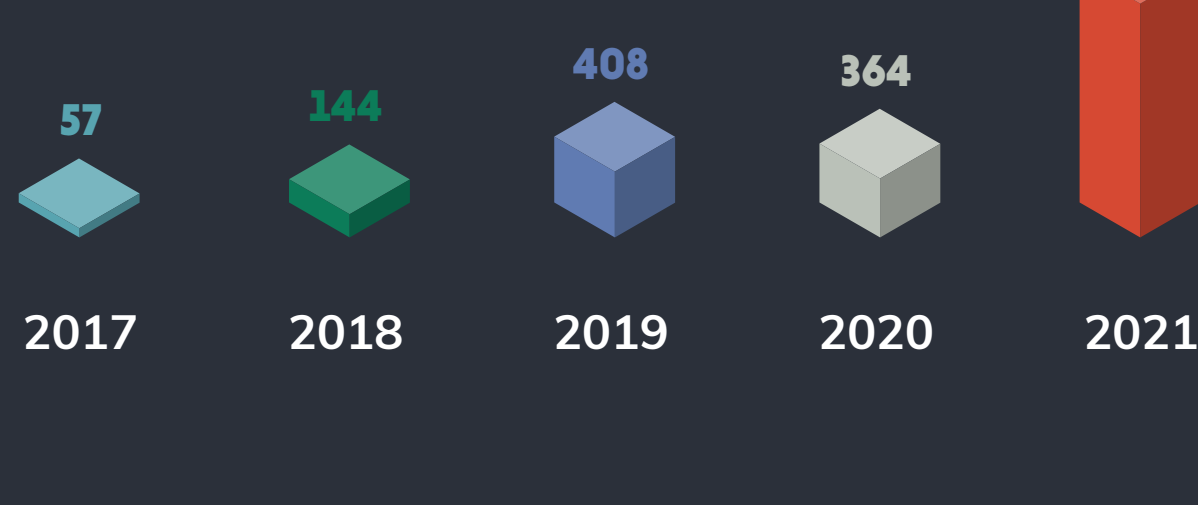
### Licences (2017-2021)

Source: gDC Dashboards



### Multilateral Legs

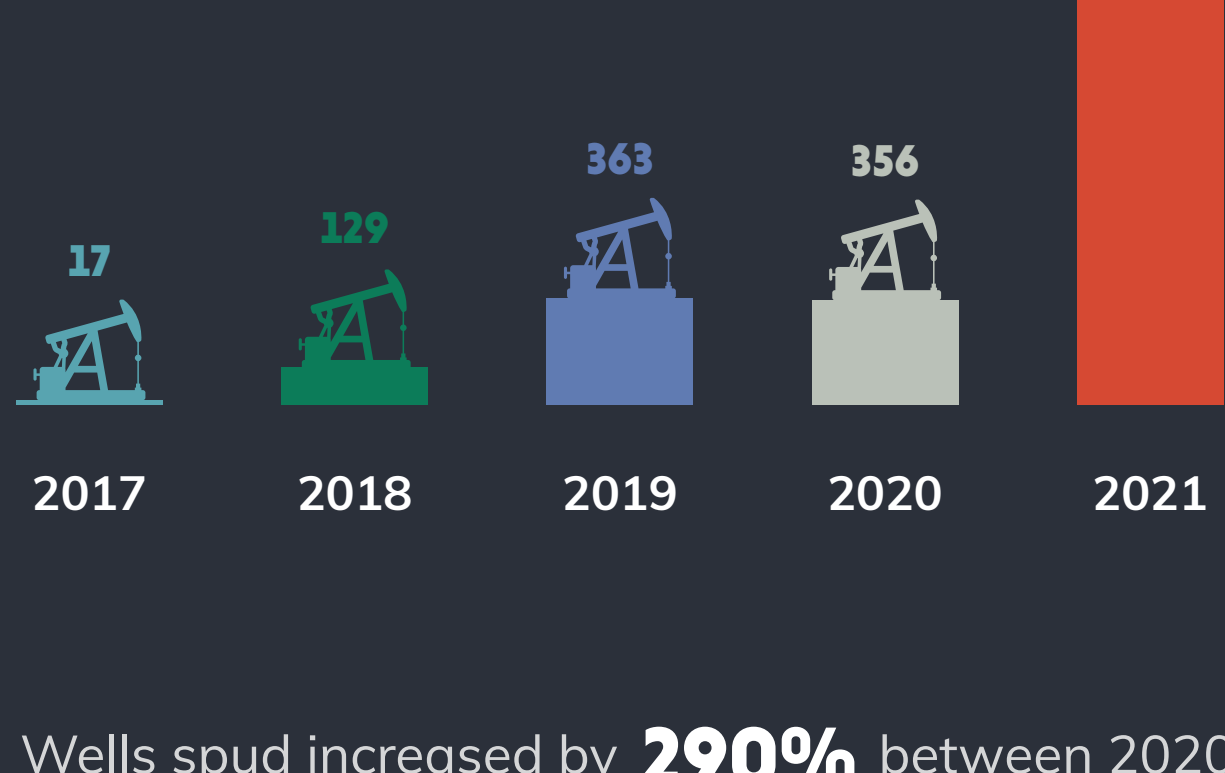
Source: gDC Dashboards



The Clearwater has seen exponential increases in well licensing in the last five years. Well licenses increased by **300%** 2020-2021. The number of horizontal legs saw an almost **273%** increase.

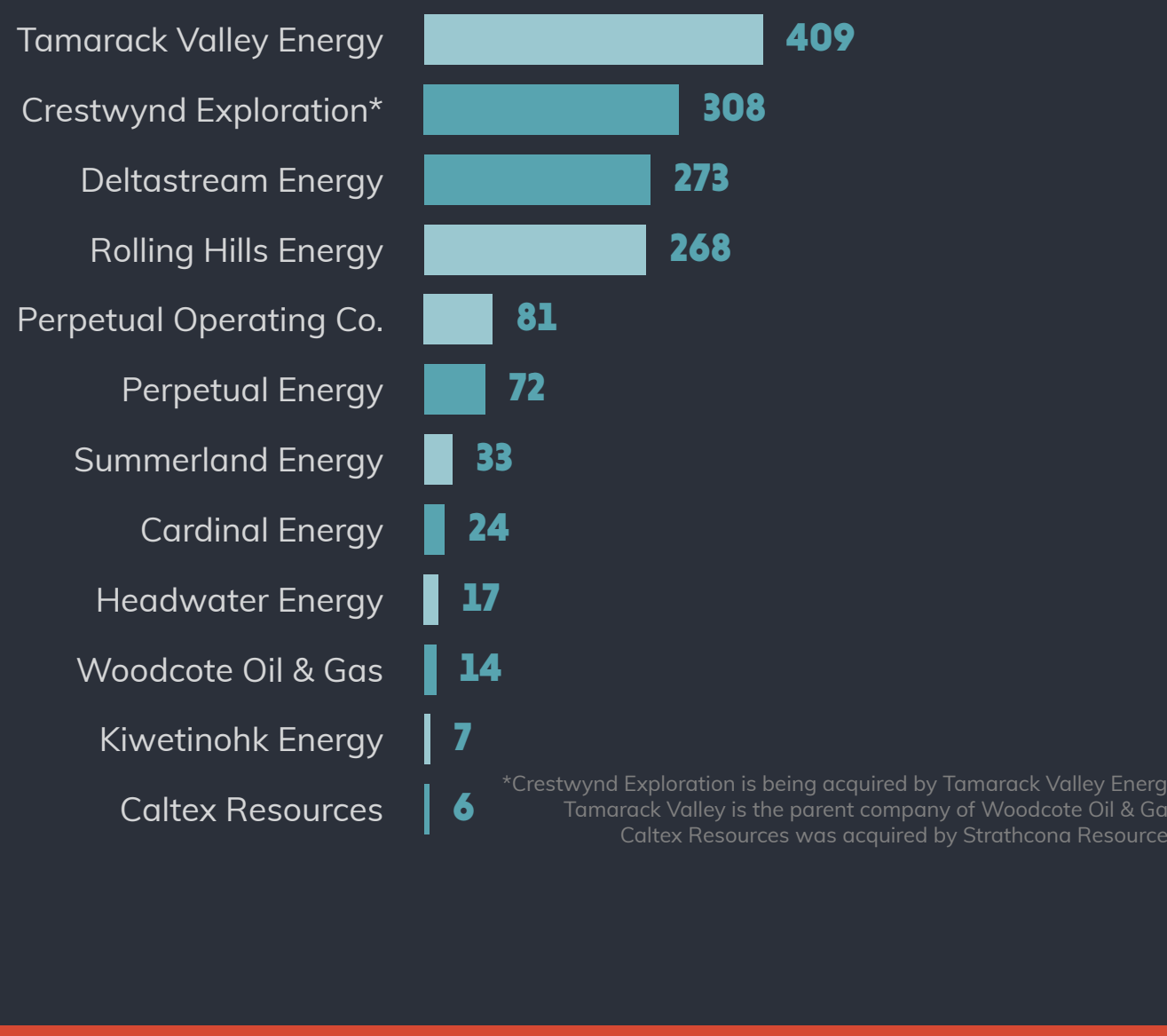
### Wells Spud (2017-2021)

Source: gDC Dashboards



### Wells Spud by Operator (2017-2021)

Source: gDC Dashboards



Wells spud increased by **290%** between 2020 and 2021 as Clearwater operators took advantage of higher oil prices.

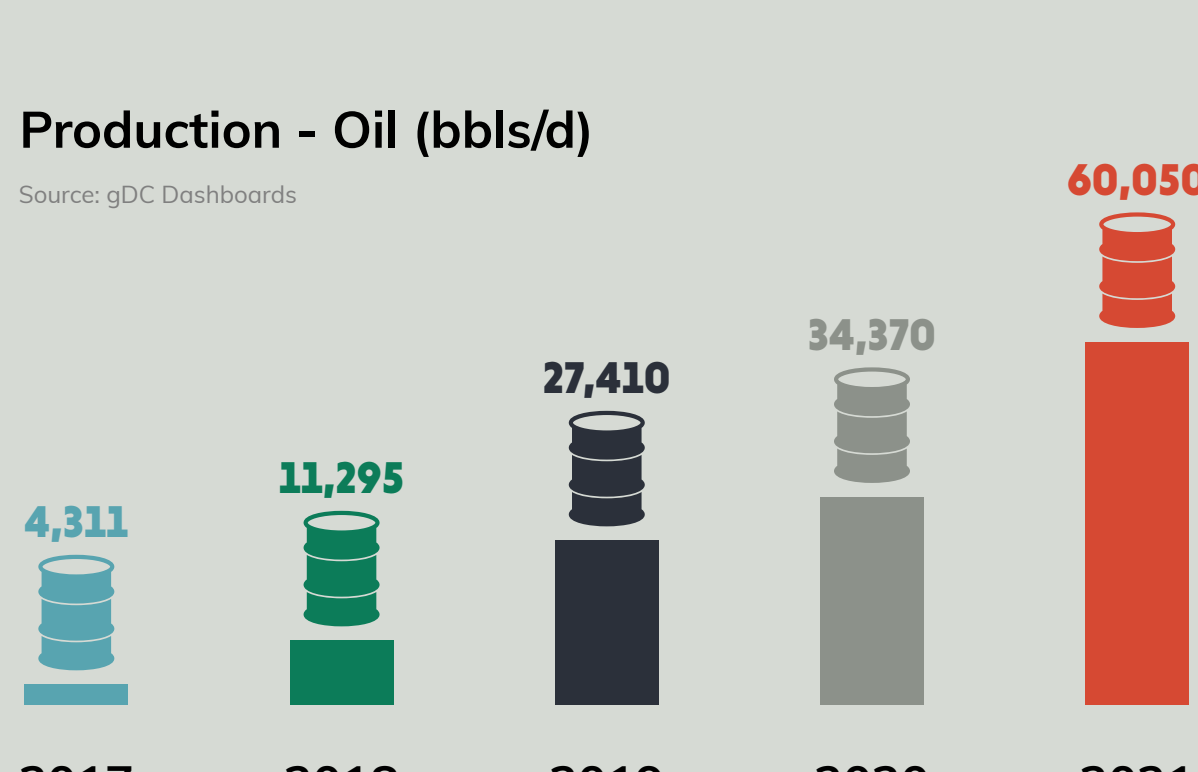
## Production Is Growing Fast

Oil production saw an increase of **74%** from year-end 2020 to year-end 2021. Associated gas production increased by **96%** to reach **38 mmcf/d**.

Overall production climbed to **77%** to exit 2021 at **65,455 boe/d**.

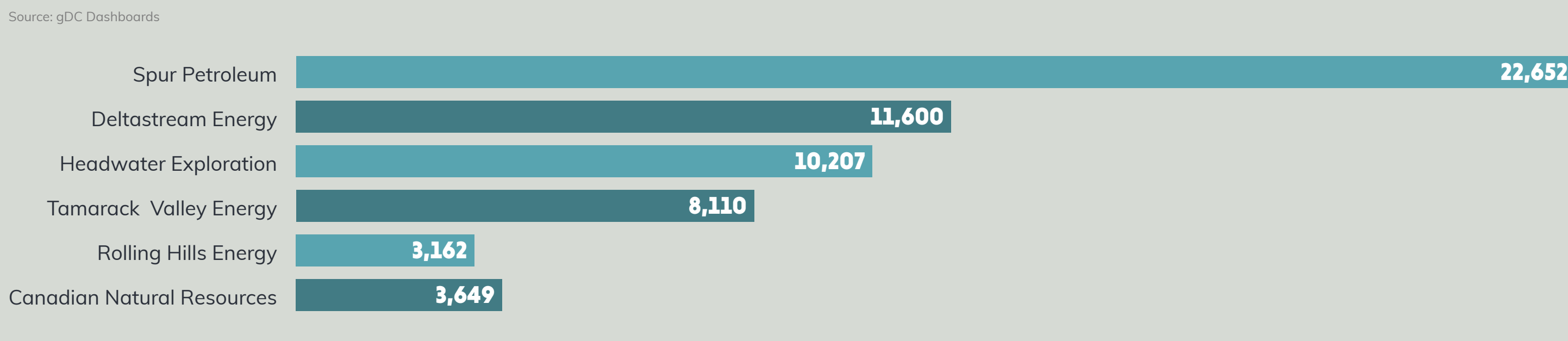
### Production - Oil (bbls/d)

Source: gDC Dashboards

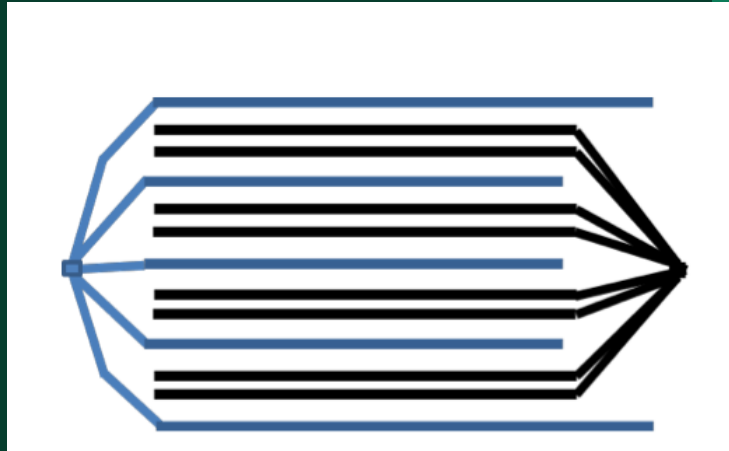


### Clearwater Production by Major Operators - Oil (bbls/d)

Source: gDC Dashboards



## Waterfloods to extend life of Clearwater



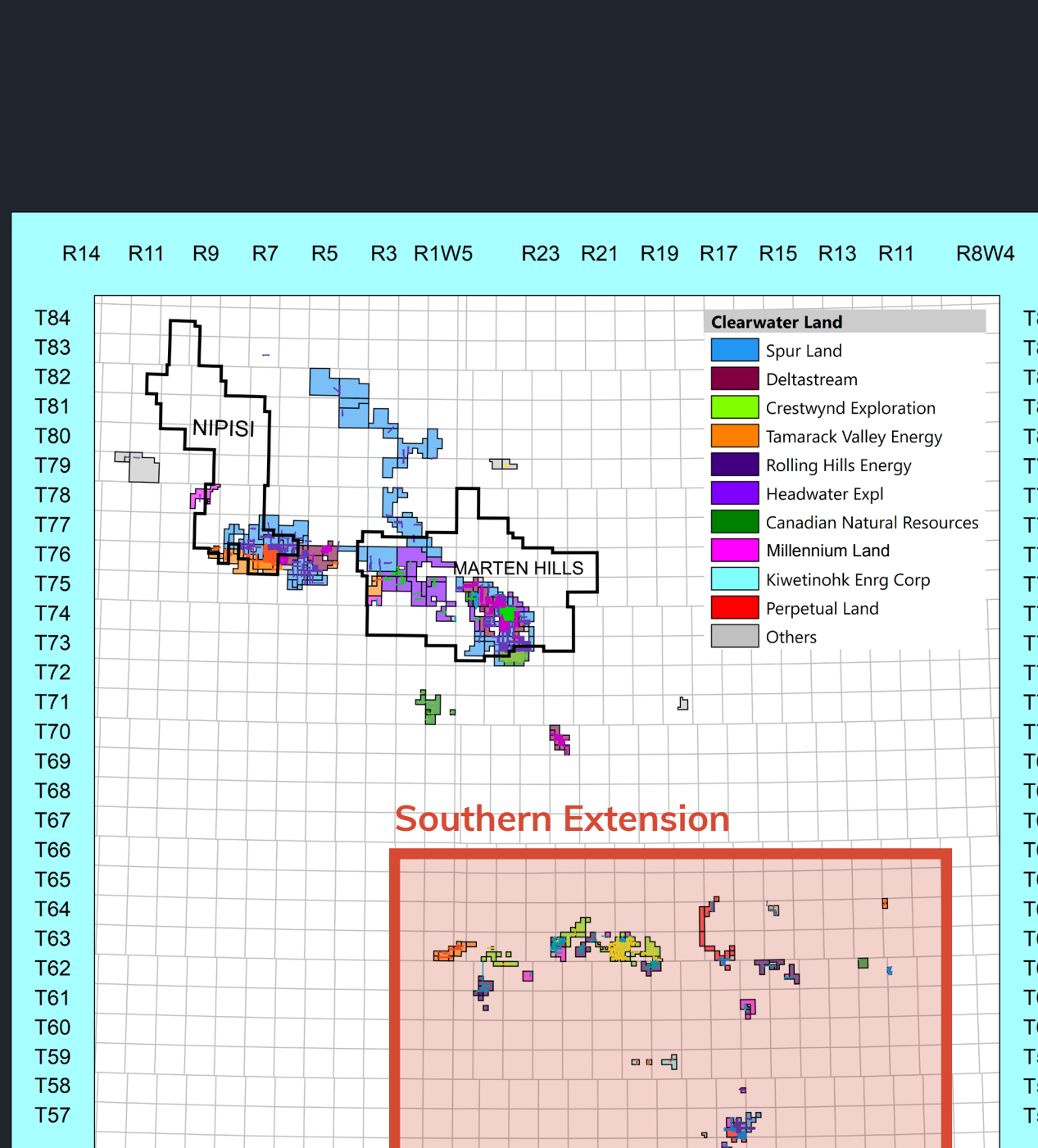
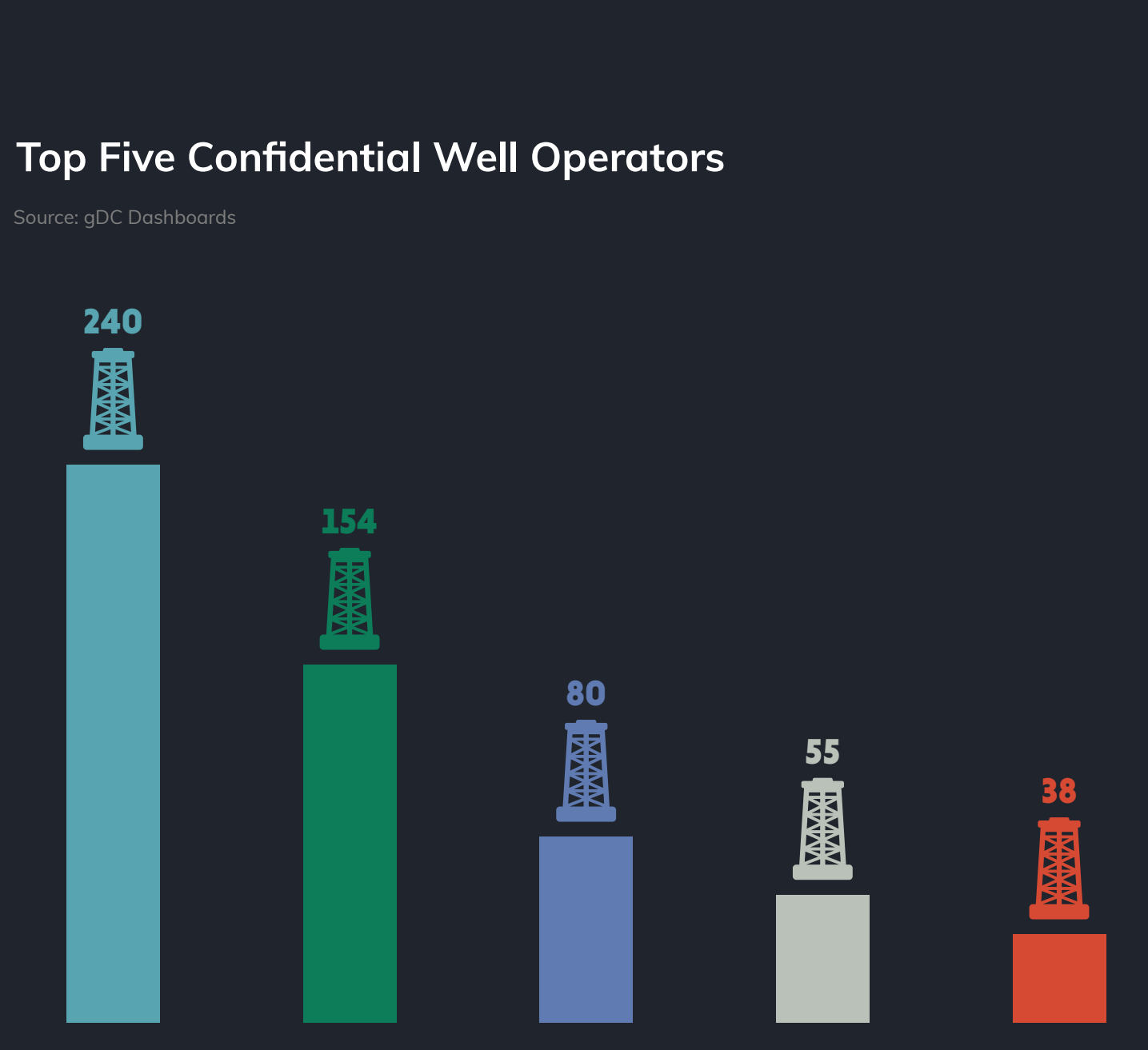
While the Clearwater is in early stages of development operators are already testing out waterflooding technologies to stem decline rates and increase ultimate recovery from wells. Six water injection wells have been drilled into the formation to date, with more under way in early 2022.

Source: Tamarack Valley Energy March 2022 Corporate Presentation/gDC Dashboards

## A LONG CONFIDENTIAL WELL LIST SHOWS POTENTIAL EXPANSION OF CLEARWATER PLAY

### Top Five Confidential Well Operators

Source: gDC Dashboards



There are **657 heavy oil wells** targeting the Clearwater on the confidential well list, including **284 wells** in the southern extension of the play in the Jarvie, Jiles, Figure Lake and Ukalta fields.

The Clearwater formation is stratigraphically broken up into Marten Hills A-F members and the Wabiskaw member. At Figure Lake in the southern Clearwater expansion, geoXPLORER analysis using geoScout shows recent land sales and exploration wells are targeting the Wabiskaw member. The Wabiskaw is a heavy oil play with APIs of 13 and porosities ranging from 25-30%.

Both a Wabiskaw incised valley and a shoreface sand are present in the area with acreage targeting the incised valley selling for \$318-\$426/ha at the final land sale of 2021. Early indications are incised valley wells should produce around 100 bbls/d with 10 mcf/d of associated gas. The Wabiskaw incised valley is up to 32 m thick and trends south to north.

There are **103 confidential wells** northwest of the Marten Hills core area in the Marten and Mitsue fields as well, indicating a nearby extension of the play. Around **500 wells** come off the confidential well list by the end of 2022.

## Is the Dawson area next?

Activity in the northern extension of the play in the Dawson area is also increasing, with Baytex Energy leading exploration. Baytex drilled **six wells** in the formation with **eight laterals per well** in 2021 on Peavine Metis Settlement lands with strong results. **Eighteen wells** are planned for 2022.

geoXPLORER analysis shows Dawson multilaterals are targeting the Clearwater F member. Not all fourth quarter surveys are off confidential well status, but the Clearwater F reservoir shows **12-23 m gross thickness** with **average porosity of 25%**.

## BAYTEX

BY THE NUMBERS

IP30s (8 LATERAL WELLS)	BBL/D
1	695
2	412
3	930
4	921
5	815
6	120

Source: Baytex Energy March 2022 Corporate Presentation



PROSPECTIVE ACREAGE:  
**>125 sections**



2021 WELLS DRILLED:  
**6**



PAYOUT AT WTI US\$75  
**3 months**

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