



Northwest
Territories
Oil and Gas
Annual Report

2023



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English

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French

Kīspin ki nitawihtīn ē nīhīyawihk ōma ācimōwin, tipwāsinān.
Cree

Tłı̨chQ yati k’èè. Dı̨ wegodı̨ newQ dè, gots’o gonede.
Tłı̨chq

ʔerihtr’is Dëne Sųłiné yati t’a huts’elkér xa beyáyatı̨ theʔq̨ ʔat’e, nuwe ts’en yólti.
Chipewyan

Edı̨ gondı̨ dehgáh got’l e zhatié k’éé edat’éh enahddhę nıde naxets’é edahłí. South Slavey
K’áhshó got’l ne xadə k’é hederı̨ ʔedjhtl’é yeriniwę ní dé dúle.
North Slavey

Jii gwandak izhii ginjìk vat’atr’ijahch’uu zhit yinohthan jì, diits’at ginohkhìi.
Gwich’in

Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqluta.
Inuvialuktun

Ćı̨dłı̨ ɁɁı̨bΔc ɬɁɁɁɁc ΔǫbɁɁc̨bɁɁǫ, ɬɁɁc̨bɁɁǫc ɬɁɁc̨bɁɁǫc̨bɁɁc̨.
Inuktitut

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.
Inuinnaqtun

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2023 in Brief

This document is a public reporting of activity in the Northwest Territories (NWT) petroleum sector in 2023, where oil and gas activity was limited to well abandonment programs. The current status of Licences is documented; the highlight for the year regarding oil and gas licences is the introduction of a new Land Tenure Optimization System which will be going live in 2024.

The NWT is notably home to large on- and offshore reserves of natural gas. In addition to providing NWT residents a cleaner, local alternative to traditional heating fuels, these resources can contribute to the global energy transition by displacing higher emission fuels such as coal and diesel.

Rights Management

There were no rights issuance processes conducted in 2023 in the onshore regions of the NWT. NWT has a policy of being open to Expressions of Interest from companies interested in gaining the right to explore for petroleum on GNWT subsurface lands.

Operations

There were no new wells drilled in the NWT between January 1 and December 31, 2023.

There was no seismic work conducted in the NWT between January 1 and December 31, 2023.

Production

The total aggregate oil production between January 1 and December 31, 2023, was 1,471,592 barrels. The total aggregate natural gas production in the NWT was 1,804.83 million ft³ between January 1 and December 31, 2023.

Northwest Territories Environmental Studies Research Fund (NWT ESRF)

The ESRF continues to support scientific research in the NWT, funding several projects related to boreal caribou, methane emissions, biodiversity monitoring and groundwater monitoring. For 2023, the abandonment and remediation of petroleum sites was also a research priority. For more information on work supported by the ESRF, visit www.nwt-esrf.org

Petroleum Resources Strategy

The NWT Petroleum Resources Strategy (PRS) outlines actions and investments to promote and grow the territorial oil and gas sector; and to enable exports to international markets while supporting smaller-scale natural gas initiatives designed to meet the needs of residents and communities in the NWT. For more information on the PRS, visit <https://www.iti.gov.nt.ca/en/petroleum-resources-strategy>

Actions supporting these outcomes included:

- efforts to advance development of NWT natural gas resources for export;
- research into carbon sequestration potential in the NWT, and;
- assisting the Inuvialuit Regional Corporation with development of the Inuvialuit Energy Security Project.

Resources and Energy Development Information Project (REDI)

Launched in June 2017, the REDI initiative sees the presentation of information tradeshows and learning activities in communities across the NWT. These events work to provide NWT residents with the information and understanding they need to assess the benefits and risks associated with resource development. Since it began, REDI has visited Inuvik, Hay River, Yellowknife, Fort Simpson, Fort Smith and Norman Wells. For more information on work supported by REDI, visit <https://www.gov.nt.ca/redi/>

Oil and Gas Resources

Table 1: Discovered Conventional Petroleum Resource Volumes in the Northwest Territories

National Energy Board, *Assessment of Discovered Conventional Petroleum Resources in the Northwest Territories and Beaufort Sea*, November 2014.

TYPE	NWT Onshore	Arctic Islands	TOTAL
Natural Gas Billion m ³ (trillion ft ³)	213.8 (7.6)	75.2 (2.6)	289.0 (10.2)
Natural Gas Liquids Million m ³ (million barrels)	8.3 (52.1)	0.0 (0.0)	8.3 (52.1)
Oil Million m ³ (million barrels)	84.1 (529.4)	4.9 (31.0)	89.0 (560.4)

Table 2: Oil Resource Assessments of Canol and Bluefish Shales

National Energy Board, *An Assessment of the Unconventional Petroleum Resources of the Bluefish Shale and the Canol Shale in the Northwest Territories*, June 2015.

Billion Cubic Metres (billion barrels)	OIL IN-PLACE		
	Low	Expected	High
Bluefish	4.392 (27.634)	7.366 (46.346)	11.254 (70.808)
Canol	13.129 (82.605)	23.018 (144.825)	35.095 (220.811)

Table 3: Natural Gas Resource Estimates for the Liard Basin

National Energy Board, *The Unconventional Gas Resource of Mississippian-Devonian Shales in the Liard Basin of British Columbia, the Northwest Territories, and Yukon*, March 2016.

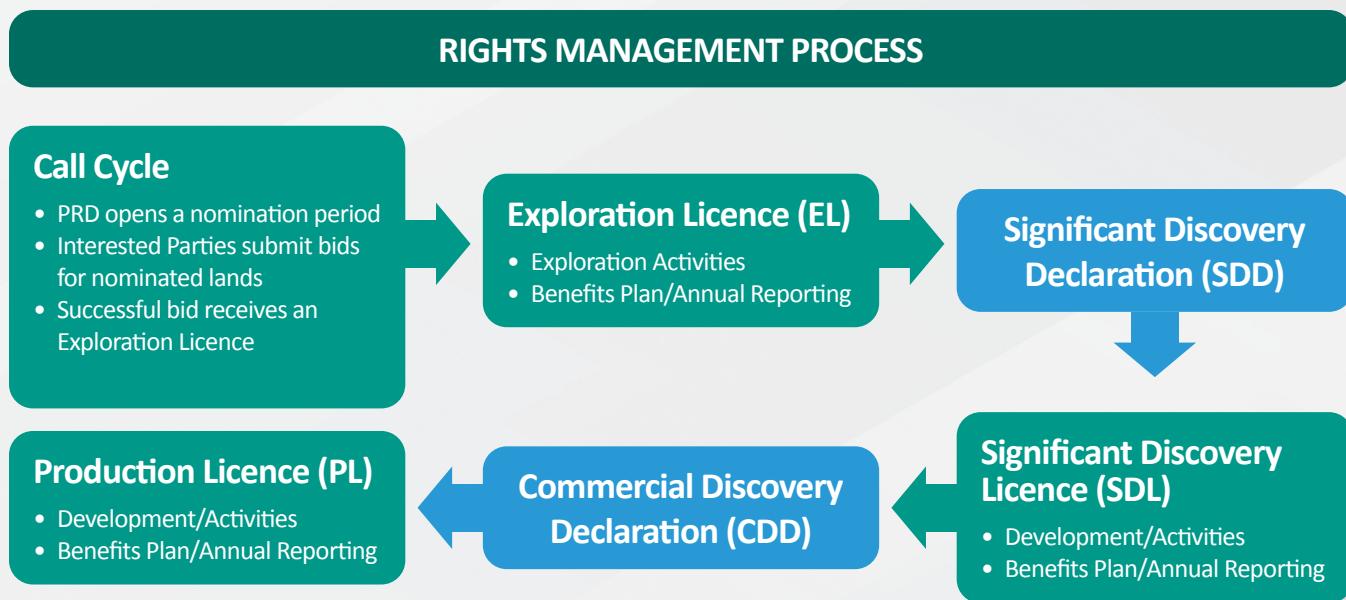
Trillion Cubic Metres (trillion ft ³)	GAS IN-PLACE		
	Low	Expected	High
Exshaw-Patry	5.2 (184)	9.0 (318)	14.5 (514)
Horn River	2.6 (91)	5.3 (187)	9.0 (317)

Oil and Gas Management

Rights Issuance

Companies with an interest in petroleum exploration in the NWT can nominate the lands which they would like to see included in a call-for-bids process at any time. Annual calls for expressions of interest are

planned. Having an open-call rights-issuance process means the NWT is operating in much the same way as Alberta, Saskatchewan, Yukon, and the offshore petroleum boards of Newfoundland and Nova Scotia.



Administered by OGR - GNWT

Administered by OROGO

*Inuvialuit Settlement Lands and Off-shore is Administered by Canada Energy Regulator

Petroleum Land Disposition in the NWT

The following series of charts show the current petroleum land dispositions in the NWT, all of which were transferred over from the Government of Canada as a result of the devolution process in 2014.

Table 4: Land Disposition – Licences and Leases <i>as of December 31, 2023</i>					
Region (number of interests)	Exploration Licence	Significant Discovery Licence	Production Licence	Pioneer Production Leases¹	Total
Mackenzie Delta and Arctic Islands	0	39	2	0	41
Central Mackenzie Valley	0	22	0	0	22
Southern Northwest Territories	0	18	3	1	22
TOTAL	0	79	5	1	85

Table 5: Land Disposition – Hectares <i>as of December 31, 2023</i>					
Region (hectares)	Exploration Licence	Significant Discovery Licence	Production Licence	Pioneer Production Leases	Total
Mackenzie Delta and Arctic Islands	0	126,750	3,423	0	130,173
Central Mackenzie Valley	0	434,012	0	0	434,012
Southern Northwest Territories	0	46,440	8,288	321	55,049
TOTAL	0	607,202	11,711	321	619,234

Issuance and Terminations

Exploration Licences

There were no new Exploration Licences (EL) issued in 2023.

Significant Discovery Licences

There were no new Significant Discovery Licences (SDL) issued for 2023. However, there were eleven (11) SDLs that were surrendered in June 2023.

Production Licences

There were no new Production Licences (PL) issued for 2023. However, there were 15 PLs that were surrendered between June and July 2023.

Pioneer Production Leases

The single remaining Pioneer Production Lease (PPL) is 838-70 which has undergone a reduction in size from 5132 ha to 312 ha, to one section in size, while the single remaining well goes from suspension to full abandonment. PPL 838-70 will be surrendered upon full well abandonment.

PPLs were originally issued between 1969 and 1970 under the Canada Oil and Gas Land Regulations with a successive 21-year term. With the surrender of the 7 leases, in 2020, there is one remaining PPL in the oil and gas registry.

Oil and Gas Registry

The Petroleum Resources Division maintains a public registry of all petroleum interests and instruments registered under Part 8 of the *Petroleum Resources Act*. The registry stands as the official record of rights holders, and any transfers or changes of ownership are duly recorded.

A monthly activity report is available at: <http://www.iti.gov.nt.ca/en/services/oil-and-gas-rights-management/oil-and-gas-activity-reporting>.

In addition to the monthly activity report, the Mineral and Petroleum Resources Division has also made available the current licences, details such as: abstracts and title detail reports, for petroleum interests in the Northwest Territories. The Licences information is available at: <https://www.iti.gov.nt.ca/en/oil-and-gas-licences>

The following series of maps show the locations of all current interests on petroleum lands held in the NWT both onshore and offshore as of December 31, 2023.

Figure 2: Mackenzie Delta/Arctic Islands Land Disposition Map

The map illustrates the locations of oil and gas licences in the onshore and offshore area, of which the GNWT has the legislative responsibility over oil and gas licences in GNWT surface and subsurface and where there is indigenous surface ownership only. There are also offshore exploration and significant discovery licences shown for reference and a guide to the potential of the offshore. The break between offshore (Government of Canada) and onshore (GNWT) regulatory regimes is along the line of delimitation (not pictured at this scale). There is also one GNWT regulated licence in the NWT arctic islands (Melville Island). For reference purposes the map illustrates the areas of relative hydrocarbon potential in a red/yellow/green colour grouping from very high down to very low potential (see map legend). Oil and gas licences are classified into production and significant discovery licences, with one short pipeline between Ikhil and Inuvik. This production well has been less productive over the years and will be shut down at some point in the future.

To get a more fulsome understanding of the classification of hydrocarbon potential please refer to the NTGO Open File 2005-004 (now NTGS, but the original publication reference was NTGO) on the NTGS maps and data catalog <https://app.nwtgeoscience.ca/>; look under “references”.

Figure 3: Liard Basin Land Disposition Map

The map illustrates the areas of relative hydrocarbon potential in a red/yellow/green colour grouping from very high down to very low potential (see map legend). Oil and gas licences are classified into production, pioneer production lease and significant discovery licences. There is pipeline infrastructure that is being removed due to production having shut down in the Liard area for a number of years. Several surrenders of significant discovery and production licences and pioneer production leases took place in the Liard in the last several years. Well abandonment continues on licences/leases that have been surrendered recently.

To get a more fulsome understanding of the classification of hydrocarbon potential please refer to the NTGO Open File 2005-004 (now NTGS, but the original publication reference was NTGO) on the NTGS maps and data catalog <https://app.nwtgeoscience.ca/>; look under “references”.

Figure 4: Central Mackenzie Valley Land Disposition Map

The map illustrates the areas of relative hydrocarbon potential in a red/yellow/green colour grouping from very high down to very low potential (see map legend). Oil and gas licences are classified into production and significant discovery licences. The last significant discovery licence issued was SDL153, which was part of a chain of SDLs issued (SDL150-SDL157) as part of the issuance of the last Significant Discovery Declaration issued by OROGO on September 7, 2016. There is an Enbridge pipeline (Line 21) from Norman Wells that heads down into Alberta within the map. In the inset map you can see the large number of wells and the production licences that are regulated by (CER) within the Norman Wells Proven Area. The wells and the small artificial islands will be abandoned and removed / remediated back to natural conditions.

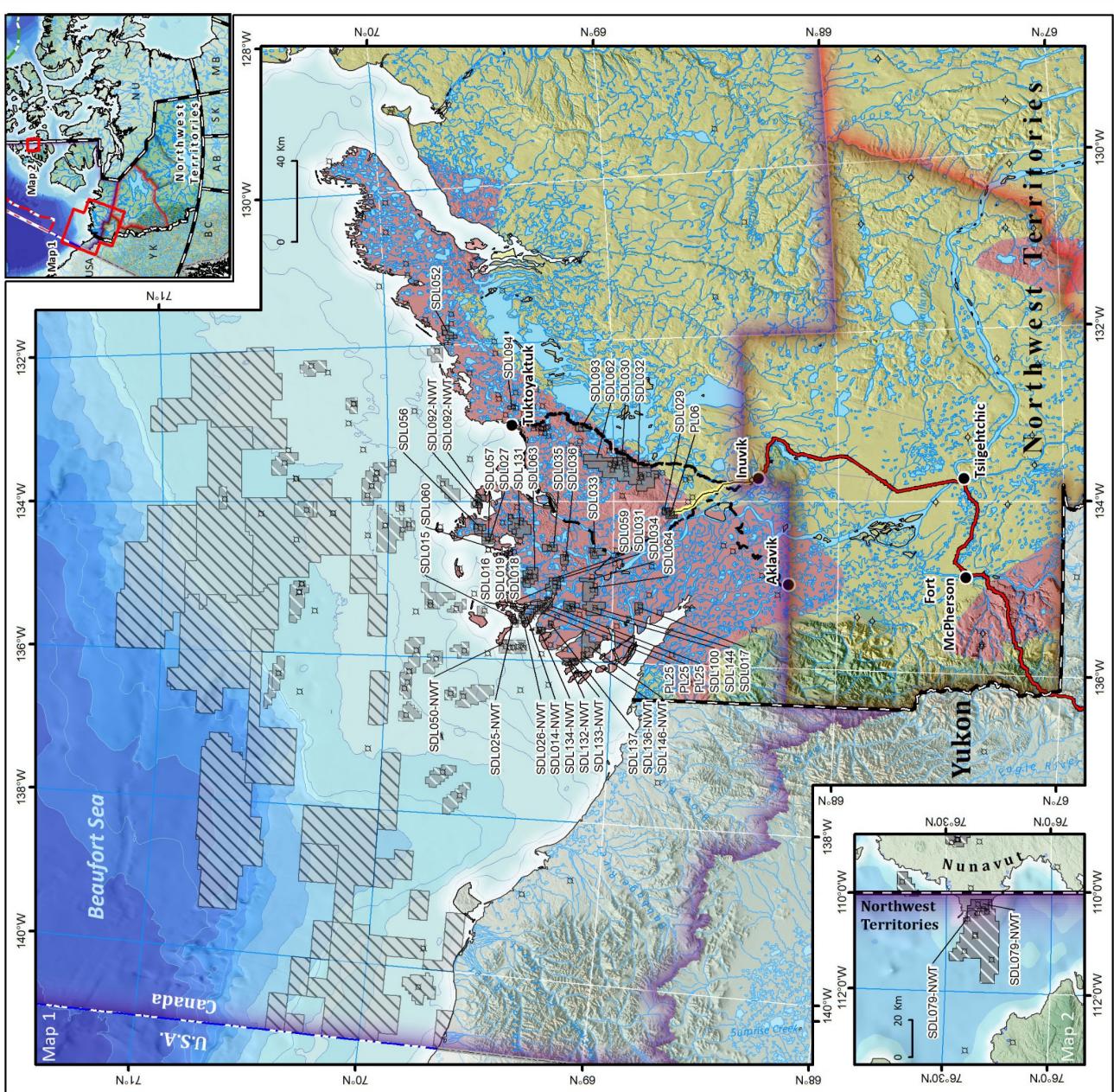
To get a more fulsome understanding of the classification of hydrocarbon potential please refer to the NTGO Open File 2005-004 (now NTGS, but the original publication reference was NTGO) on the NTGS maps and data catalog <https://app.nwtgeoscience.ca/>; look under “references”.

Figure 5: Cameron Hills Land Disposition Map

The map illustrates the areas of relative hydrocarbon potential in a red/yellow/green colour grouping from very high down to very low potential (see map legend). A large number of surrenders of SDLs and PLs took place within the Cameron Hills map area in 2023. There are two licences left within the Cameron Hills area.

To get a more fulsome understanding of the classification of hydrocarbon potential please refer to the NTGO Open File 2005-004 (now NTGS, but the original publication reference was NTGO) on the NTGS maps and data catalog <https://app.nwtgeoscience.ca/>; look under “references”.

Figure 2: Mackenzie Delta/Arctic Islands Land Disposition Map



Mackenzie Delta / Arctic Islands Oil and Gas Rights, Pipeline Infrastructure and Hydrocarbon Potential

Legend:

- Pipelines:** Inuvik to Tuktoyaktuk (Yellow), Highway - Under Construction (Yellow), Major Road (Red), Winter Road (Grey)
- Boundaries:** Limit of Exclusive Economic Zone (Dashed Blue), Pursuant to bilateral Boundary Agreement (Dashed Blue), International Boundary (Grey), Provincial or Territorial Boundary (Grey)
- Offshore Oil and Gas Rights - CIRNAC:**
 - Exploration Licence (Hatched)
 - Pioneer Lease (Solid Grey)
 - Significant Discovery Licence (Solid Grey)
- Oil and Gas Rights - GNWT:**
 - Production Licence (Hatched)
 - Significant Discovery Licence (Solid Grey)
- NWT Hydrocarbon Potential:** NWTG - Open File 2005 - 04 (Hatched)
- Settlement Areas:**
 - Inuvialuit Settlement Area (Pink)
 - Sahtu, Dene and Métis Settlement Area (Yellow)
 - Gwich'in Settlement Area (Green)
 - Wek'eezhii Management Area (Purple)
 - Wek'eezhii Management Area (Red)

Document: Mackenzie_Delta_Arctic_Islands-2023_01
Annual_Report_A17_PUBLIC_2024.mxd
Document Security PUBLIC
Source: Mineral and Petroleum Resources Division,
Industry, Tourism and Investment
Projection: Modified Lambert Conformal Conic
Central Meridian: 134°W
Standard Parallels: 62°N



Figure 3: Liard Basin Land Disposition Map



Liard Basin Oil and Gas Rights, Pipeline Infrastructure and Hydrocarbon Potential

Document: Laird_Basin_2023_Annual_Report_v7_Mar6_2024.mxd
Document Security: PUBLIC
Source: Mineral and Petroleum Resources Division,
Industry, Tourism and Investment
Projection: Modified Lambert Conformal Conic
Central Meridian: 123.5°W
Standard Parallels: 62°N



Figure 4: Central Mackenzie Valley Land Disposition Map

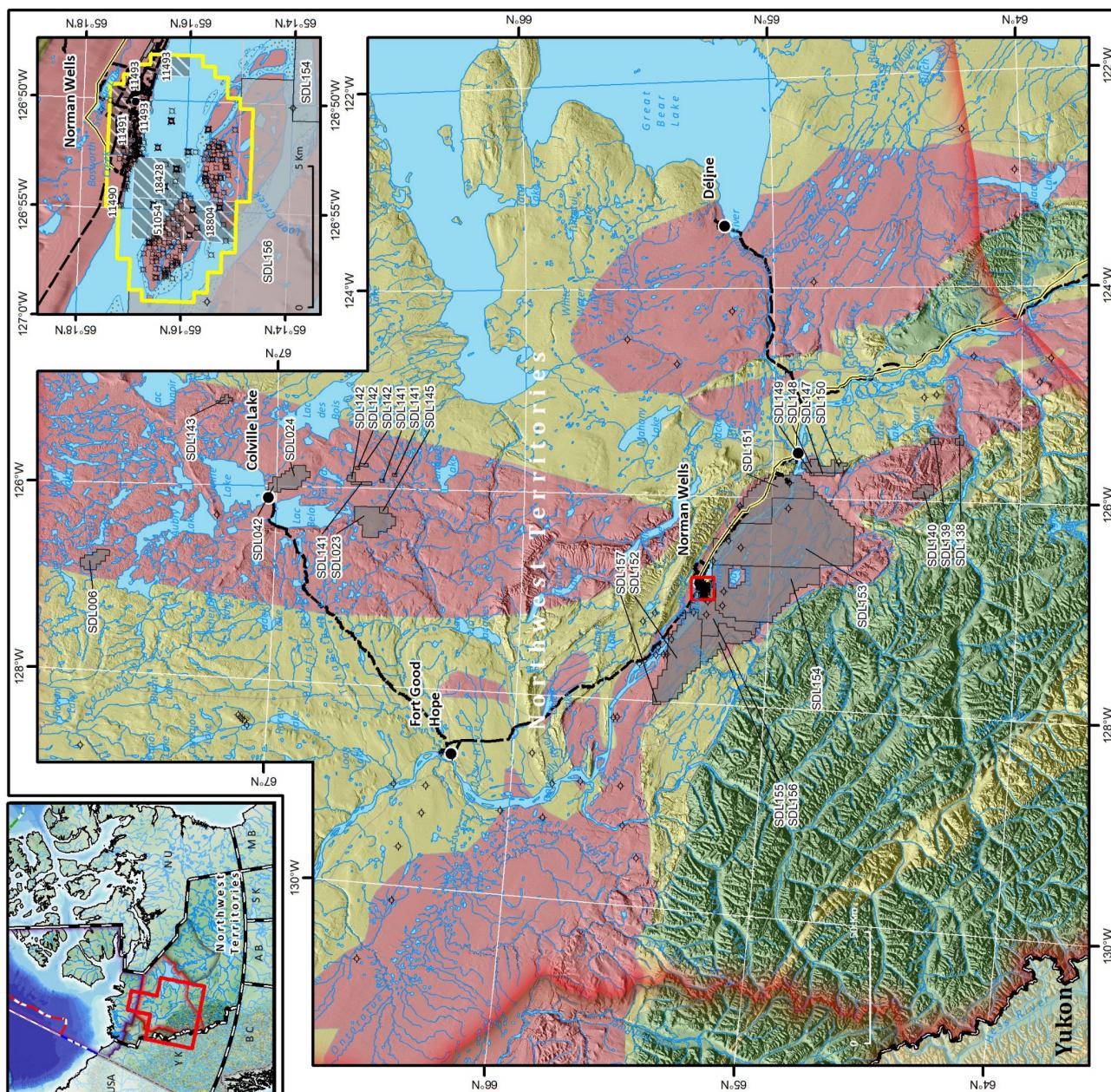
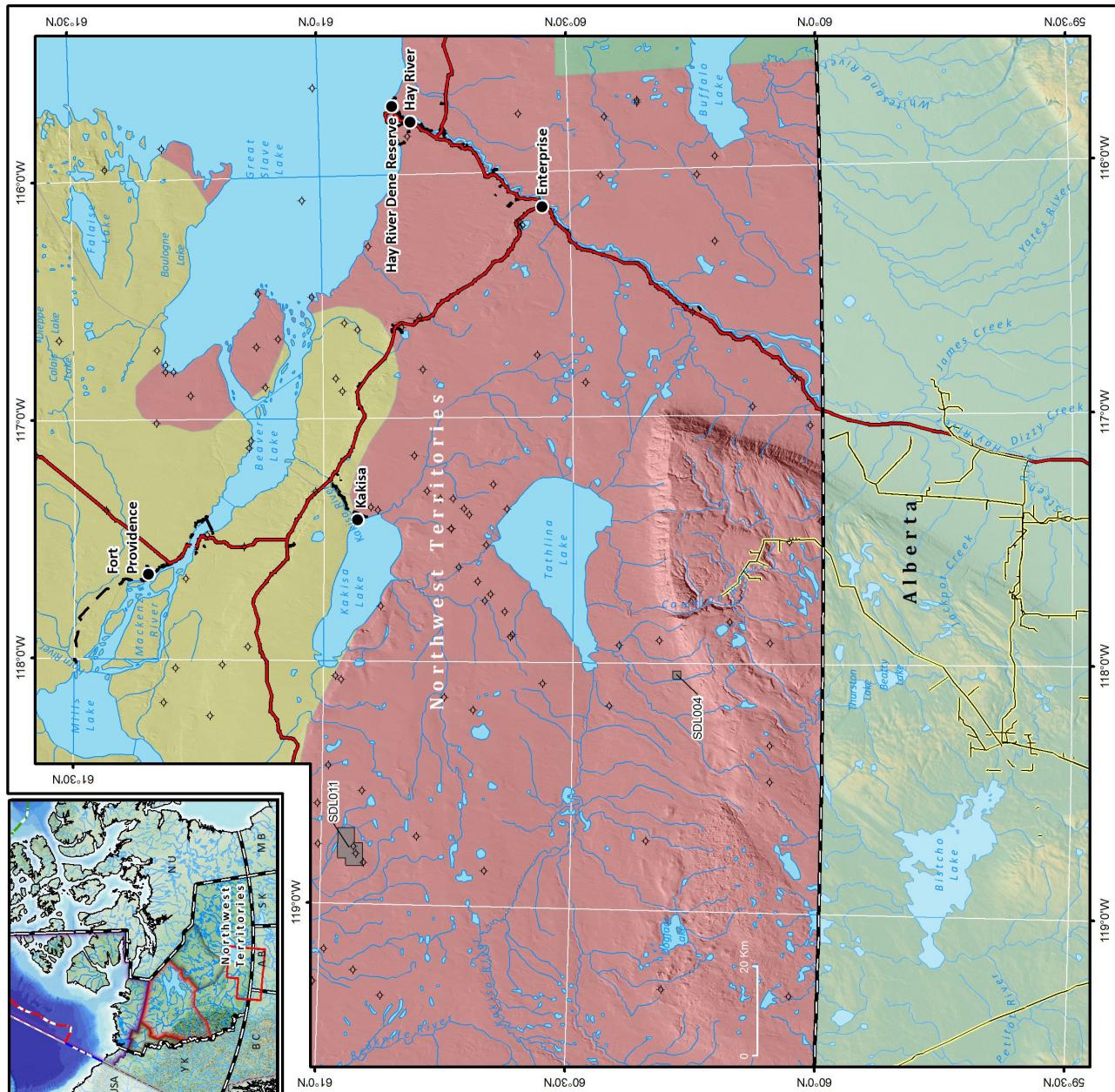


Figure 5: Cameron Hills Land Disposition Map



Cameron Hills Oil and Gas Rights, Pipeline Infrastructure and Hydrocarbon Potential

- ◊ OPGO Wells
- NWT Communities
- Provincial or Territorial Boundary
- Major Road
- Winter Road
- Pipelines
- Pipelines
- Significant Discovery Licence
- NWT Hydrocarbon Potential**
- NWT: NWT - Open File 2005 - 04
- High - Very High
- High / Moderate - Moderate - Moderate / Low
- Inuvialuit Settlement Area
- Gwich'in Settlement Area
- Sahtu, Dene and Métis Settlement Area
- Wakéezhli Management Area

Document: Cameron_Hills_2023_Annual_19
Report_March_2024.mxd
Document Security: PUBLIC
Source: Mineral and Petroleum Resources Division,
Industry, Tourism and Investment
Projection: Modified Lambert Conformal Conic
Central Meridian: 123.5°W
Standard Parallels: 62°N
70°N
Datum: WGS84



Revenues from Administration of Interests

Following the completion of a rights issuance process, successful bidders for Exploration Licences are required to post 25 percent of the Work Proposal Bid before the interest can be issued. Referred to as the Work Deposit, this amount is refundable as expenditures are incurred through the first (Period 1) term of the licence. Approved expenditures are refunded to the interest holders at the prorated amount of 25 percent of the total amount of expenditures. Any balance remaining at the end of Period 1 of an Exploration Licence is forfeited.

If an interest holder meets all terms and conditions set out in the Exploration Licence and is able to maintain the licence for an additional four years, they are required to pay rental fees. Rental fees are refundable as expenditures as incurred on a dollar-for-dollar basis.

Fees

There were no forfeitures paid for the year ending December 31, 2023. During this same period, a total of \$793 in non-refundable fees on lands under Pioneer Production Leases was paid.

Administrative fees, generally related to information requests made to the NWT Registry and other transactions, totalled \$0.

There were no rental fees on ELs or SDLs paid between January 1 and December 31, 2023.

Table 6: Revenues from Administration of Interests (\$ as of December 31, 2023)

	2018	2019	2020	2021	2022	2023
Non-refundable Rentals (leases)	\$52,202	\$52,202	\$52,202	\$793	\$793	\$793
Fees	\$0	\$0	\$0	\$0	\$0	\$0
Forfeitures	\$0	\$0	\$0	\$45,251,480	\$0	\$0
Period 1 Extension Fees	\$1,387,224	\$1,387,224	\$0	\$0	\$0	\$0

Benefits Plans

By definition, a Benefits Plan refers to an employment plan for Canadians that also provides Canadian companies with opportunities to supply goods and services to the oil and gas industry. In the NWT, a Benefits Plan means training and employment opportunities for residents and new opportunities for Northern businesses by ensuring that as much of the economic spin-off as possible from work in the NWT stays within the territory.

The Benefits Guidelines have been revised to ensure consistency with the new transparency and confidentiality requirements under the PRA and OGOA. To ensure the Guidelines protect confidential information, it has been clarified that no commercially confidential or sensitive information will be included in the Benefits Plans or Benefits Plan Reports submitted to the GNWT.

Section 17 of the *Oil and Gas Operations Act* outlines all requirements of a Benefits Plan – and states that no approval for a proposed work plan can begin until the Minister of ITI has approved the Benefits Plan. Reference to the need for a Benefits Plan – as well as the need for ministerial approval – is also referenced in Section 20 of the *Petroleum Resources Act*.

Section 18 of the *Oil and Gas Operations Act* outlines all guideline and interpretation notes for a Benefits Plan and states that the Regulator may issue and publish the guidelines and interpretation notes with respect to the application and administration of section 10, 14, or 26 or any regulations made under section 51 or 52.

Additionally, the Minister may issue and publish guidelines and interpretation notes with respect to the application and administration of section 17.

Exploration Activities in the NWT

There was no new exploration drilling in the NWT in 2023, nor was there any development drilling for the same period. Additionally, there were no seismic programs conducted in the NWT during this period.

Production

The Cameron Hills field, Ikhil gas field, and the Norman Wells Proven Area field, while both located in onshore regions of the NWT, are subject to regulation under two distinct bodies – Cameron Hills under the Office of the Regulator of Oil and Gas Operations and Ikhil and Norman Wells Proven Area under the Canada Energy Regulator (formerly the National Energy Board).

Production information in this report spans the period from January 1-December 31, 2023.

Cameron Hills

There was no production at the Cameron Hills for the year ending December 31, 2023.

Norman Wells Proven Area

Production at Norman Wells saw full production results in 2023, 234,022 m³ (1,471,954.09 barrels) of oil and 45.13 million m³ (1,593.75 million ft³) of gas.

Ikhil

Production levels at Ikhil J-35 continue to be low year over year as efforts to conserve reservoir pressure remain in place, with approximately 5.98 million m³ (2,110.8 million ft³) of natural gas produced during 2023. Gas from this field is used as a back-up system for power generation in Inuvik.

Table 7: Production Levels 2018-2023
as of December 31, 2023

Oil Production Cubic Metres (000s) (barrels) (000s)	Cameron Hills	Norman Wells	Ikhil
2018	N/A	98.42 (619.01)	N/A
2019	N/A	435.29 (2,737.95)	N/A
2020	N/A	309.50 (1,946.72)	N/A
2021	N/A	323.5 (2,035.05)	N/A
2022	N/A	321.2 (2,020.2)	N/A
2023	N/A	234.02 (1472.0)	N/A
Gas Production Cubic Metres (000,000s) (cubic feet) (000,000s)	Cameron Hills	Norman Wells	Ikhil
2018	0 (0)	11.13 (393.0)	3.42 (120.78)
2019	0 (0)	70.67 (2,410.0)	1.41 (48.14)
2020	0 (0)	46.98 (1,659.0)	4.24 (149.60)
2021	0 (0)	53.5 (1,889.0)	4.45 (157.1)
2022	0 (0)	55.02 (1,943.0)	7.23 (255.43)
2023	0 (0)	45.13 (1,593.75)	5.98 (211.08)

¹Data for Ikhil and Norman Wells courtesy Canadian Energy Regulator

²Data for Cameron Hills from NEB (2013-2014) and Office of the Regulator of Oil and Gas Operations for 2015-2022

Figure 6: NWT Oil Production Volumes, 2018-2023

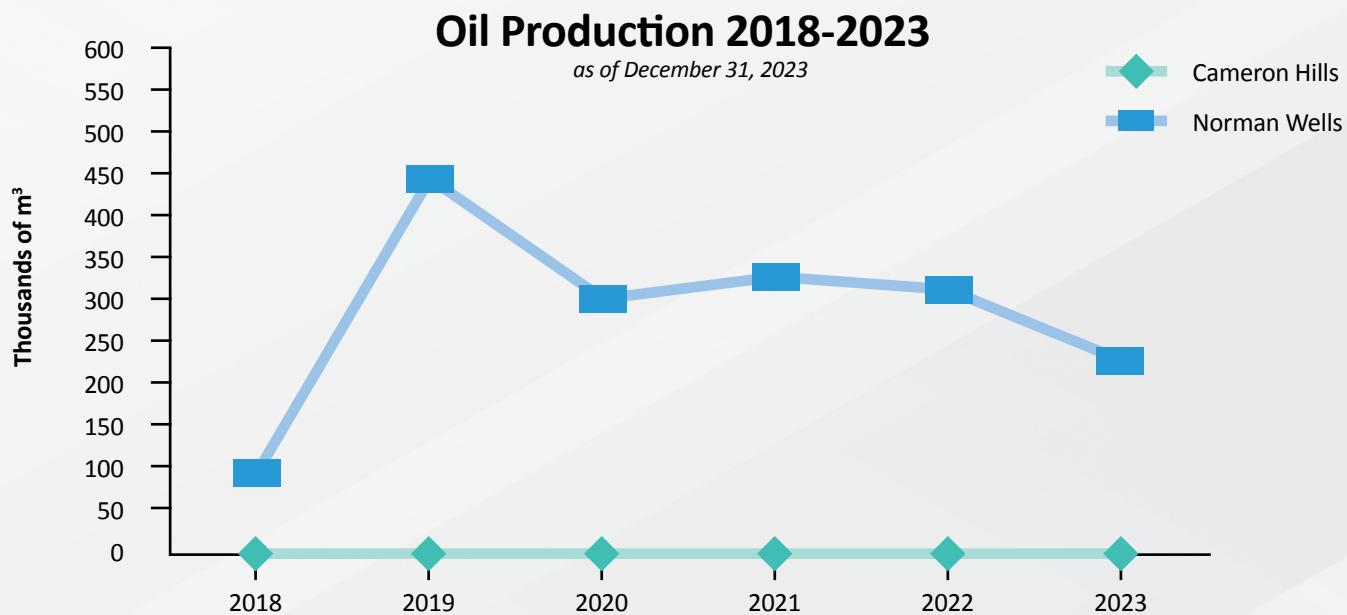
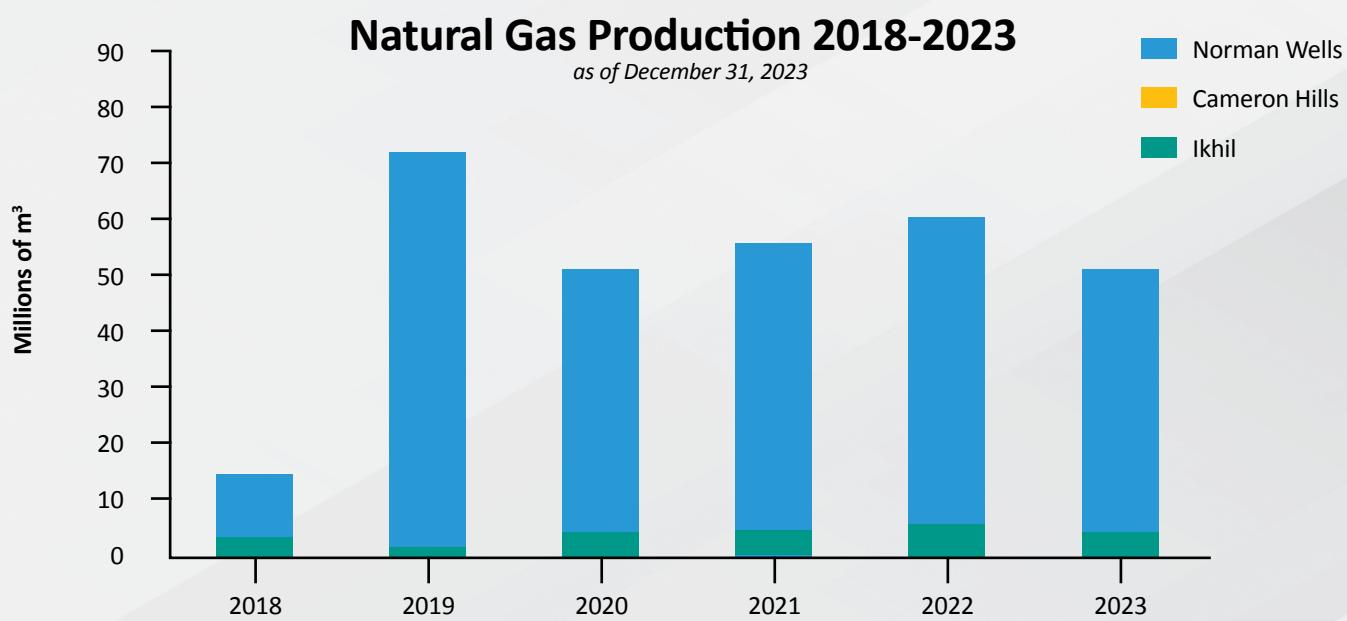


Figure 7: NWT Gas Production, 2018-2023



Outreach & Engagement

The Mineral and Petroleum Resources Division participated in several community outreach and stakeholder engagement activities during 2023, including:

- Arctic Energy and Resources Symposium Calgary event in March 2023
- Resource and Energy Development Information Inuvik event in June 2023
- Arctic Development Expo Inuvik event in June 2023
- Geoscience Forum Yellowknife event in November 2023

Further Information

Mineral and Petroleum Resources Division

Please visit our website at
www.nwtpetroleum.com

To obtain further information, please contact the appropriate individual below by telephone or in writing:

Mailing address:

Mineral and Petroleum Resources Division
Department of Industry, Tourism and Investment
P.O. Box 3019
INUVIK, NT X0E 0T0

Email: oilandgasrights@gov.nt.ca

Information on the resource management regime, rights issuance process and other related information:

Manager, Oil and Gas Rights:
(867) 678-8024 Ext. 63671

Information on registration procedures and regulations, exploration, significant discovery and production licences, transfers, and notices:

Registrar, Oil and Gas Rights:
(867) 678-8024 Ext. 63675

Information on Mineral and Petroleum Resources Division maps and Geographic Information System (GIS) data:

Mineral and Petroleum Geomatics Officer:
(867) 678-8024 Ext. 63674





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