



Oil & Gas

ANNUAL REPORT

2020

Government of
Northwest Territories







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Minister's Message



Caroline Wawzonek
Minister, Industry, Tourism and Investment

June 2021

I am pleased to present this report of oil and gas activity in the Northwest Territories (NWT) for the year ending December 31, 2020. Following completion of a legislative review of both the Petroleum Resources Act (PRA) and the Oil and Gas Operations Act (OGOA) in 2019, the amendments to the NWT's oil and gas legislation were passed in the Legislative Assembly and came into force in July 2020. The focus of these amendments is on improving transparency while modernizing these Acts where appropriate. The Department of Industry, Tourism and Investment's (ITI) focus is now on regulatory review and amendments which will further improve and modernize the administration and policies associated with petroleum resource development.

Much of our focus in 2020 was towards the future. The 15-year Petroleum Resources Strategy (2018) is in its second year of implementation. We are assessing the actions in the Strategy's implementation plan and performance measurement framework. In this way, our plan is a living, breathing document – one that will evolve and deliver results.

Our dual priorities in the 19th Legislative Assembly are to assess the viability of our NWT natural gas resources replacing imported diesel, and examining whether it is feasible to export our natural gas to Asia-Pacific markets. Both of these options provide energy security and environmental benefits, and will help to grow our economy and reduce other countries' reliance on coal.

Looking into 2021, our work continues. We will identify, understand and pursue the opportunities that lie ahead to grow our petroleum sector responsibly and sustainably for the benefit of all NWT residents.

Message de la ministre



M^{me} Caroline Wawzonek

*Ministre de l'Industrie, du Tourisme
et de l'Investissement*

Juin 2021

Je suis heureuse de présenter ce rapport d'activités sur l'exploitation pétrolière et gazière aux Territoires du Nord-Ouest (TNO) pour l'année se terminant le 31 décembre 2020. Après l'examen de la Loi sur les hydrocarbures et de la Loi sur les opérations pétrolières en 2019, l'Assemblée législative a adopté les modifications desdites lois qui sont entrées en vigueur en juillet 2020. L'objectif principal de ces modifications consistait à augmenter la transparence de ces lois tout en les actualisant, le cas échéant. Le ministère de l'Industrie, du Tourisme et de l'Investissement (MITI) se concentre maintenant sur la révision et les modifications réglementaires qui permettront d'améliorer et de moderniser davantage l'administration et les politiques liées à l'exploitation des ressources pétrolières.

En 2020, nous avons tourné notre attention vers l'avenir. Publiée en mai 2018, la Stratégie sur les ressources pétrolières des TNO durera 15 ans et en est à sa deuxième année de mise en œuvre. Nous sommes en train d'évaluer les actions du plan de mise en œuvre de la Stratégie et du cadre régissant la mesure de son efficacité. Ainsi, nous avons rédigé un plan évolutif, appelé à changer et qui devrait produire des résultats.

Les deux priorités de la 19^e Assemblée législative sont d'évaluer s'il est viable de remplacer le diesel importé par les ressources en gaz naturel des TNO et d'exporter ces mêmes ressources vers les marchés de l'Asie-Pacifique. Ces deux options contribueront à la croissance de notre économie, à assurer notre sécurité énergétique et à préserver l'environnement en réduisant l'utilisation du charbon à l'échelle mondiale.

Nous poursuivrons notre travail en 2021. Nous nous efforcerons de cerner, de comprendre et de saisir les occasions d'affaires qui se présentent pour notre secteur pétrolier, afin de le faire croître, de façon durable et responsable, au profit de tous les Ténois.

2020 in Brief

Rights Management

There were no rights issuance processes conducted in 2020 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, 2020. There was no seismic work conducted in the NWT between January 1 and December 31, 2020.

Production

The total aggregate oil production between January 1 and December 31, 2020 was 1,946,717 barrels. The total aggregate natural gas production in the NWT was 51.22 million cubic feet between January 1 and December 31, 2020.

Northwest Territories Environmental Studies Research Fund (NWT ESRF)

ESRF continued its work to support scientific research in the territory, funding several projects related to boreal caribou, methane emissions, biodiversity monitoring and groundwater monitoring. In addition, ESRF has included abandonment and remediation of petroleum sites as a new research priority. For more information on work supported by the ESRF, visit www.nwt-esrf.org.

Petroleum Resources Strategy

During 2020, ITI continued collecting Petroleum Resources Strategy (PRS) implementation data from various GNWT departments and industry partners. This data will allow us to evaluate how well we are implementing the PRS. The PRS, released in May 2018, sets out a path forward 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.

Resources and Energy Development Information Project

Launched in June 2017, the Resources and Energy Development Information (REDI) project fulfils a government commitment to ensure NWT residents have meaningful opportunities to participate in the assessment of potential benefits and risks associated with resource development, including hydraulic fracturing. Since its inception, REDI has visited Inuvik, Hay River, Yellowknife, Fort Simpson, Fort Smith and Norman Wells. Due to the COVID-19 pandemic, the REDI program was not able to complete any community visits in 2020.

2020 en Bref

Gestion des droits

Suivant sa politique, le GTNO est ouvert aux déclarations d'intérêt d'entreprises qui souhaitent obtenir les droits d'exploration pétrolière du sous-sol des terres territoriales. En 2020, il n'y a eu aucun processus d'attribution de droits dans les régions continentales des TNO.

Opérations

Entre le 1^{er} janvier et le 31 décembre 2020, aucun nouveau puits n'a été foré aux TNO. On n'a entrepris aucun travaux de prospection sismique non plus au cours de la même période.

Production

Le bilan total de la production pétrolière entre le 1^{er} janvier et le 31 décembre 2020 a été de 2 737 952 barils. Le bilan total de la production gazière aux TNO a été de 50,6 millions de pieds cubes pour la même période.

Fonds pour l'étude de l'environnement des Territoires du Nord-Ouest

Le Fonds pour l'étude de l'environnement a continué de soutenir la recherche scientifique aux TNO. Il a permis de financer plusieurs projets de surveillance du caribou boréal, des émissions de méthane, de la biodiversité et des eaux souterraines. En outre, le Fonds a ajouté à ses priorités de recherche la problématique de l'abandon et de la restauration des sites pétroliers. Pour en savoir plus sur les travaux soutenus par le Fonds, visitez son site Web www.nwt-esrf.org.

Stratégie sur les ressources pétrolières

En 2020, le MITI a continué de recueillir des données de divers ministères du GTNO et de leurs partenaires de l'industrie pour mettre en œuvre la Stratégie sur les ressources pétrolières. Toutes ces informations nous permettront d'évaluer si nous exécutons la stratégie convenablement. Publiée en mai 2018, la Stratégie sur les ressources pétrolières trace la voie à suivre pour

promouvoir et faire croître le secteur pétrolier et gazier, en favorisant les exportations sur le marché international tout en soutenant des projets de gaz naturel à plus petite échelle qui visent à répondre aux besoins des résidents et des collectivités des TNO.

Initiative de préparation sur les ressources et l'énergie

Lancée en juin 2017, l'initiative PRÊT (« préparation sur les ressources et l'énergie pour les Ténois ») répond à l'engagement du gouvernement de veiller à ce que les Ténois puissent participer pleinement à l'évaluation des avantages et des risques associés à l'exploitation des ressources, dont ceux liés à la fracturation hydraulique. Depuis le début de l'initiative PRÊT, ses responsables ont visité Inuvik, Hay River, Yellowknife, Fort Simpson, Fort Smith et Norman Wells. En raison de la pandémie de COVID-19, les responsables de l'initiative PRÊT n'ont pu se rendre dans aucune collectivité en 2020.

Oil & 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 cubic feet)	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)	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 & 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.

Petroleum land disposition in the NWT

The following series of charts shows 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 as of December 31, 2020

Region (number of interests)	Exploration Licence	Significant Discovery Licence	Production Licence	Petroleum Land Leases ¹	Total
Mackenzie Delta and Arctic Islands	0	39	2	0	41
Central Mackenzie Valley	0	22	0	0	22
Southern Northwest Territories	0	31	21	1	53
TOTAL	0	92	23	1	116

Region (hectares)	Exploration Licence	Significant Discovery Licence	Production Licence	Petroleum Land Leases	Total
Mackenzie Delta/ Arctic Islands	0	126,750	3,423	0	130,173
Central Mackenzie Valley	0	434,012	0	0	434,012
Southern Northwest Territories	0	65,729	32,842	321	98,892
TOTAL	0	626,491	36,265	321	663,077

¹ These leases and licences were issued under former legislative regimes pursuant to Sections 99 and 101 of the Petroleum Resources Act.

Issuance and Terminations Exploration Licences

There were no Exploration Licences (EL) issued in 2020. However, Husky Oil Operations Limited EL4942 extended period 1 expired by termination on August 29, 2020.

Significant Discovery Licences

On August 21, 2020, Husky Oil Operations Limited applied for and subsequently was issued SDL153 to replace its EL494. Pioneer Production Leases On October 7, 2020, Prairie Provident Resources provided to the Mineral and Petroleum Resources Division (MPRD) the necessary documentation for the surrender of PPL's 703-70, 704-70, 705-70, 707-70, 708-70, 709-70, 710-7, and partial surrender of 838-70 (leases).

These oil and gas leases 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 seven leases there is one remaining PPL in the oil and gas registry.

Oil and Gas Registry

Petroleum Resources 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.

The 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, Petroleum Resources 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 shows the locations of all current interests on petroleum lands held in the NWT, both onshore and offshore, as of December 31, 2020.

Figure 1: Mackenzie Delta/Arctic Islands Land Disposition Map

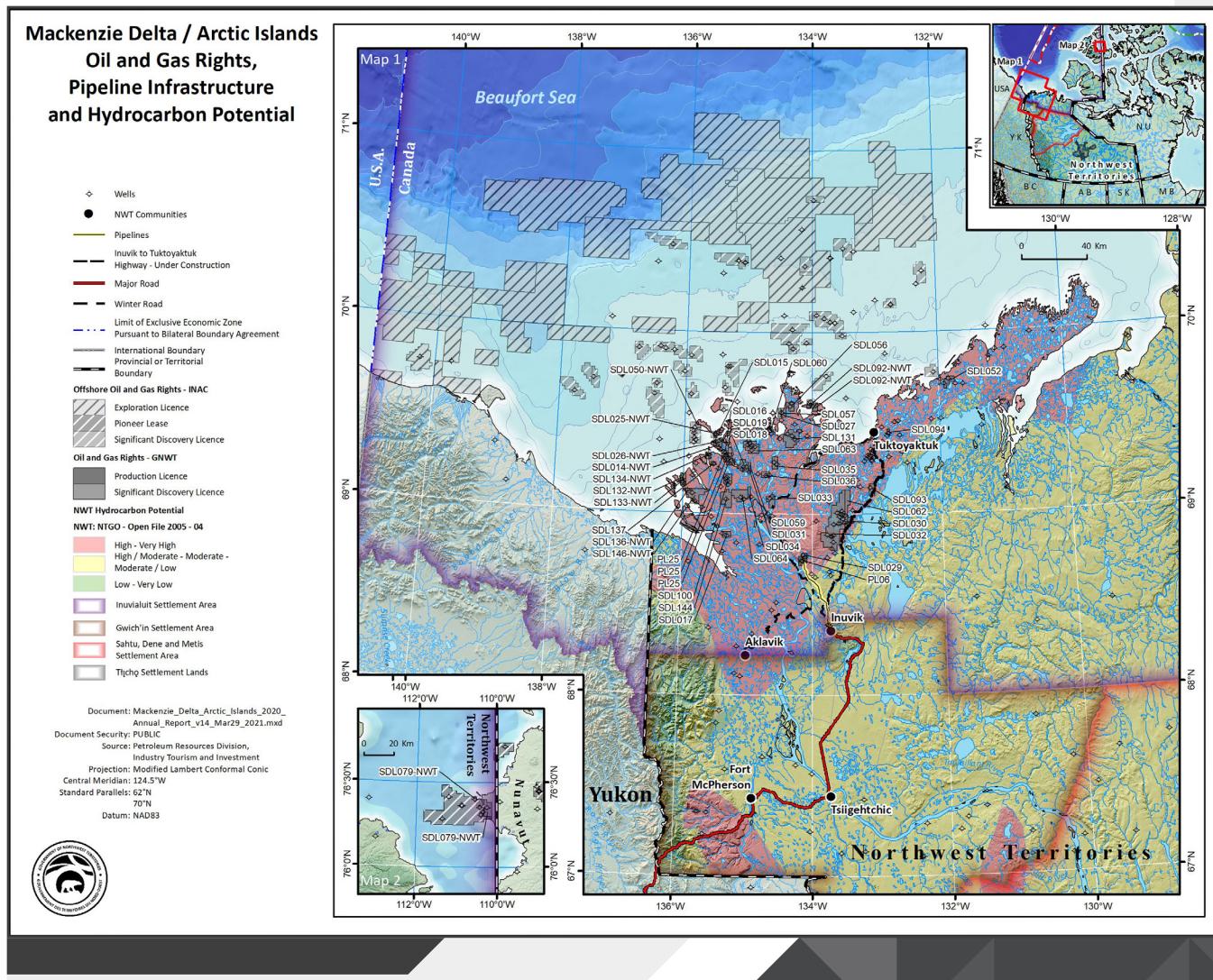


Figure 2: Liard Basin Land Disposition Map

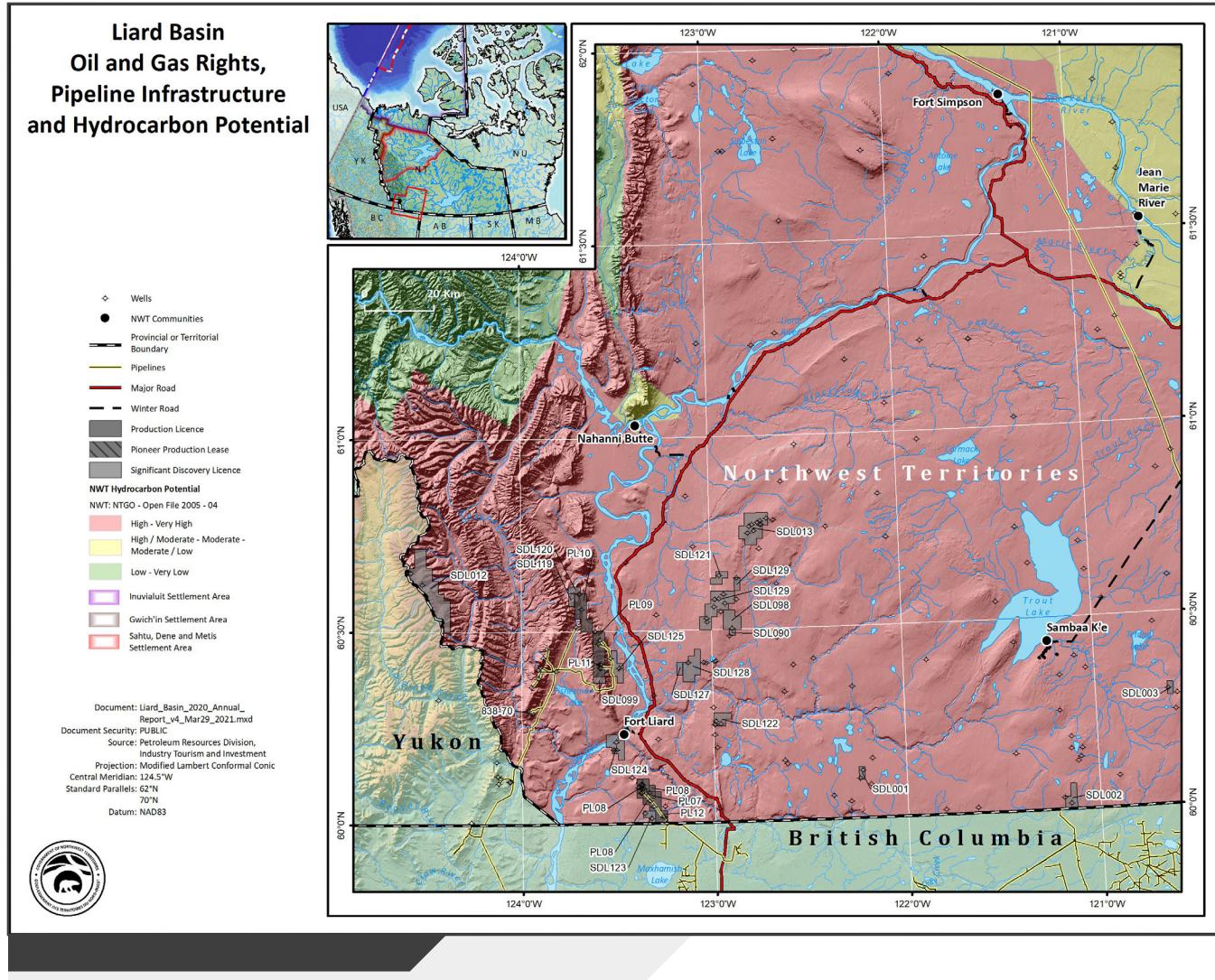


Figure 3: Central Mackenzie Valley Land Disposition Map

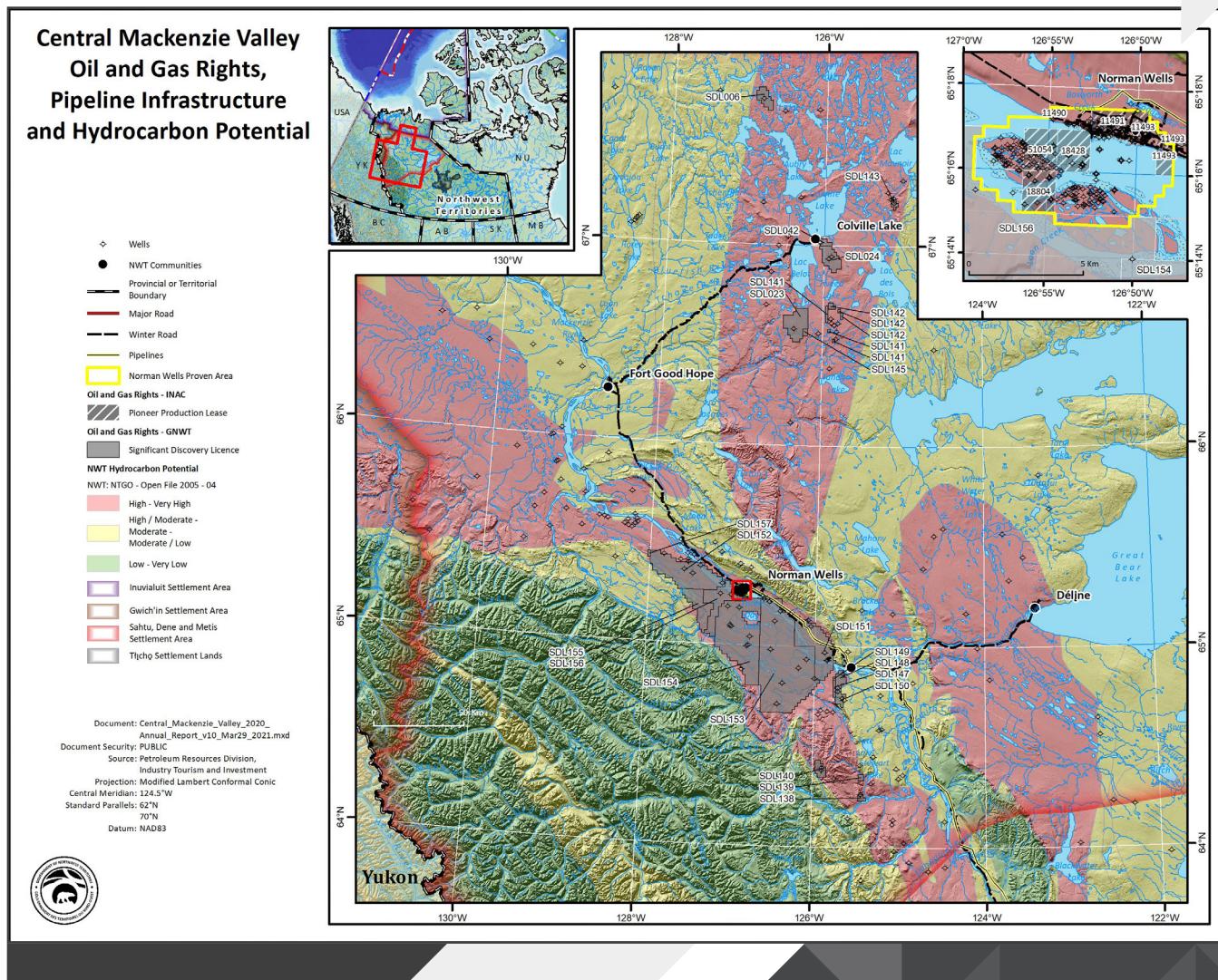
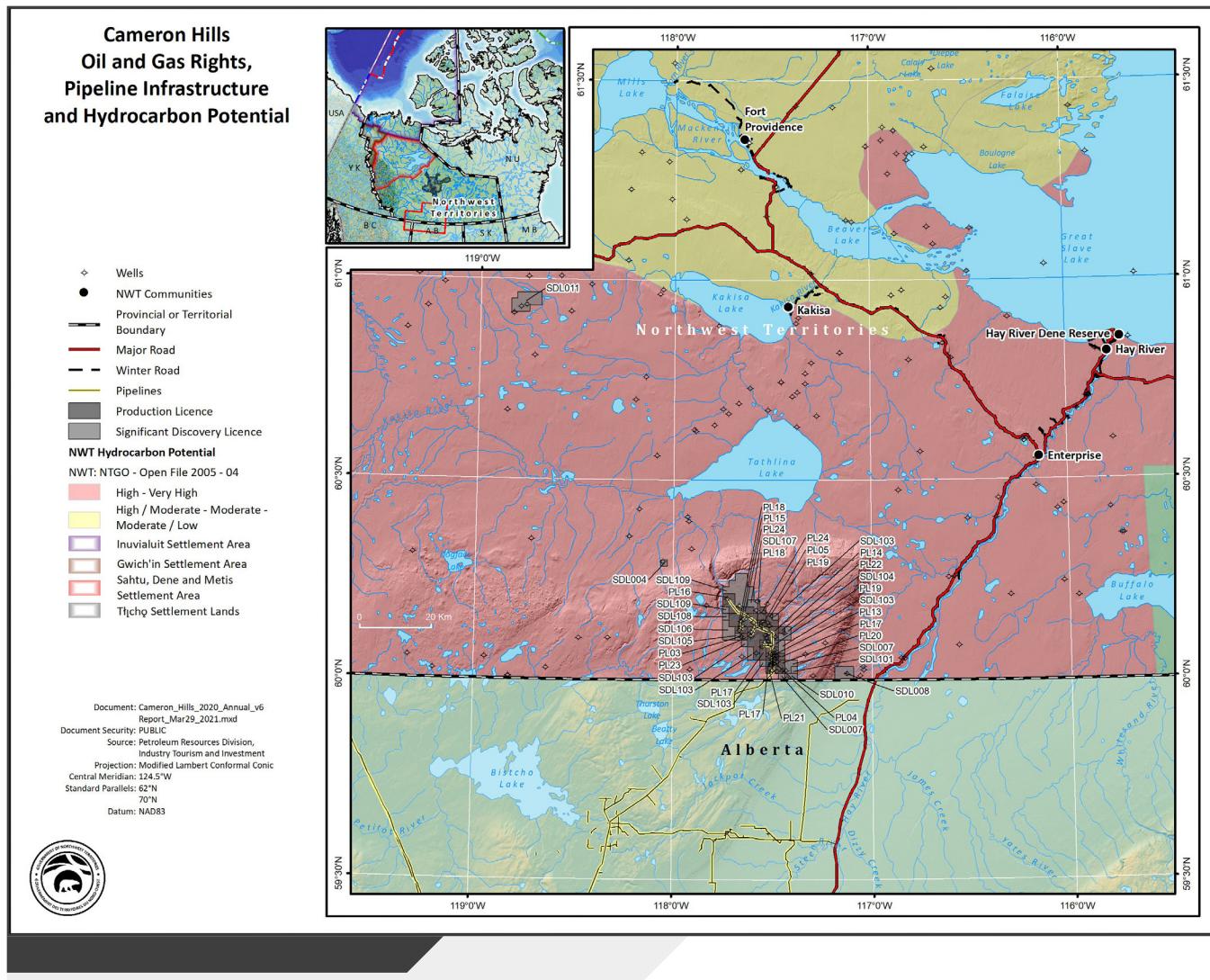


Figure 4: Cameron Hills Land Disposition Map



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 can 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.

Table 5: Revenues from Administration of Interests (\$)

	2015	2016	2017	2018	2019	2020
Non-refundable rentals (leases)	\$52,202	\$52,202	\$52,202	\$52,202	\$52,202	\$52,202
Fees	\$1,432	\$118	\$136	\$0	\$0	\$0
Forfeitures	\$0	\$12,084,465	\$31,036,250	\$0	\$0	\$0
Period 1 Extension Fees	\$0	\$520,209	\$953,716	\$1,387,224	\$1,387,224	\$0

Fees

There were no forfeitures paid for the year ending December 31, 2020. During this same period, a total of \$52,202 in non-refundable fees on lands under Petroleum Land 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, 2020.

“a Benefits Plan means training and employment opportunities for residents and new opportunities for northern businesses...”

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 spinoff 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, the revisions clarify 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 be given 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

There was no new exploration drilling in the NWT in 2020, 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 and the Ikhil gas 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 under the Canada Energy Regulator (formerly the National Energy Board).

Production information in this report spans the period from January 1-December 31, 2020.

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 4,235.14 million cubic metres (4.24 million cubic feet) of natural gas produced during 2020. Gas from this field is used as a backup system for power generation in Inuvik.

Cameron Hills

There was no production at Cameron Hills for the year ending December 31, 2020.



Table 7: Production Levels 2013-2020

Oil Production cubic metres (000s) (barrels) (000s)	Cameron Hills	Norman Wells	Ikhil
2015	1.8 (11.35)	576.29 (3,623.75)	N/A
2016	N/A	521.99 (3,283.23)	N/A
2017	N/A	16.62 (104.54)	N/A
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
Gas Production Cubic Metres (000,000s) (cubic feet) (000,000s)	Cameron Hills	Norman Wells	Ikhil
2015	3.69 (130.40)	83.83 (2,961.04)	2.79 (98.37)
2016	0.01 (0.27)	78.55 (2,773.89)	4.08 (133.42)
2017	0.001 (0.035)	4.11 (144.97)	4.79 (169.08)
2018	0 (0)	11.13 (393.04)	3.42 (120.78)
2019	0 (0)	70.67 (2,410)	1.41 (48.14)
2020	0 (0)	0.00 (46.98)	4.24 (149.60)

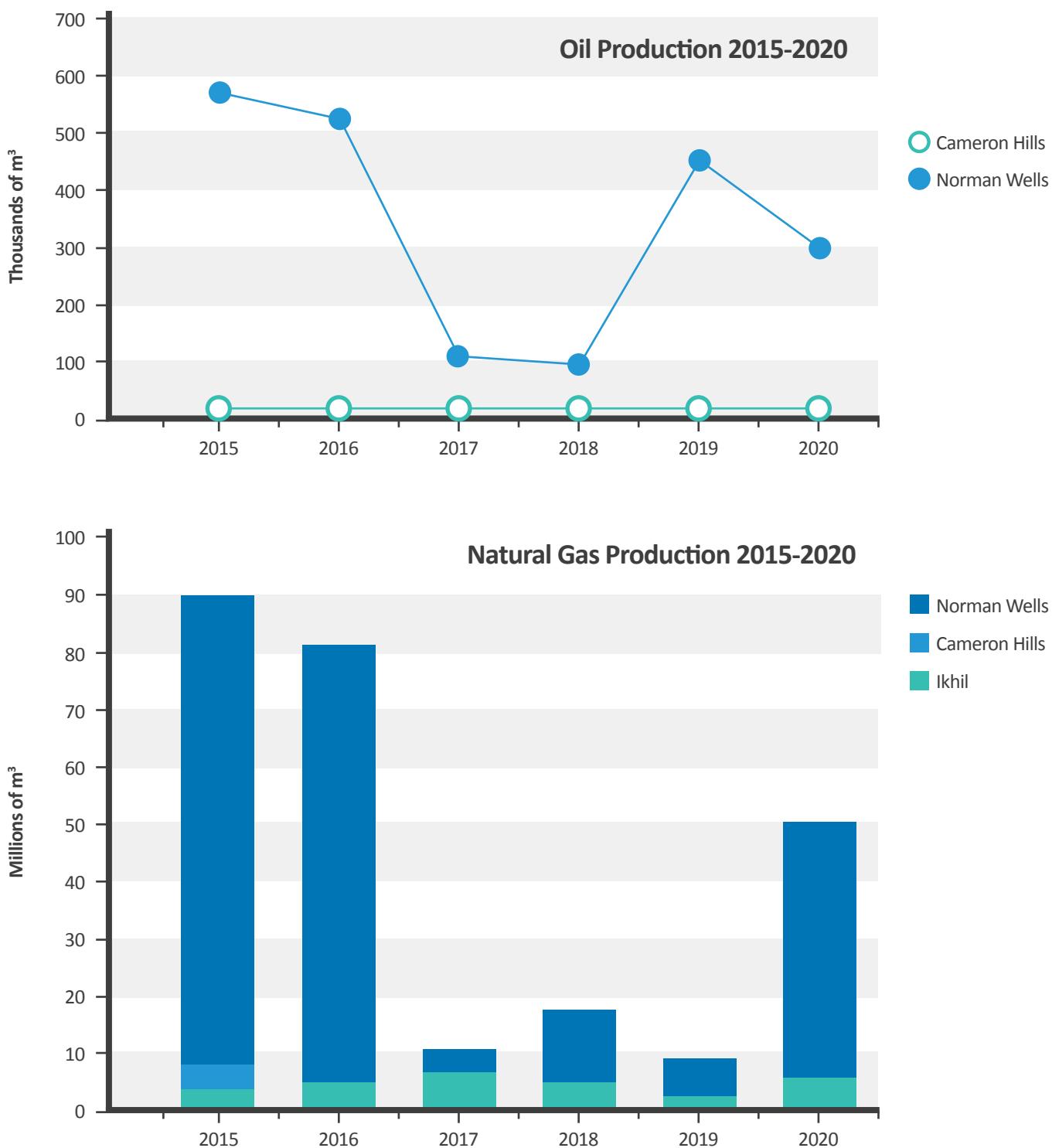
¹ Data for Ikhil and Norman Wells courtesy Canadian Energy Regulator

² Data for Cameron Hills from NEB (2013-2014) and Office of the Regulator of Oil and Gas Operations for 2015-2019

Norman Wells Proven Area

Production at Norman Wells saw full production results in 2020: 1,946,717 barrels (309,503.3 cubic metres) of oil and 46,982 cubic metres (1,659.16 million cubic feet) of gas.

Figure 7: NWT Production Volumes, 2013-2020



Further Information

PETROLEUM RESOURCES OFFICE

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:

Petroleum Resources Branch

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) 777-7477

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

Registrar, Oil and Gas Rights: (867) 777-7476

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

Petroleum Geomatics Officer: (867) 777-7483

Notes

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