



00-089

**Mackenzie Valley Land and Water Board**  
**7th Floor - 4910 50th Avenue**  
**P.O. Box 2130**  
**YELLOWKNIFE NT X1A 2P6**  
**Phone (867) 669-0506**  
**FAX (867) 873-6610**

September 12, 2000

File: MV2000L1-0009

Distribution List



Dear Sir/Madame:

**Water License Application**  
**Paramount Resources Ltd. MV2000L1-0009**  
**Oil and Gas Exploration, Cameron Hills Area N.T.**

Attached for your review and comments is the above mentioned Water License application. Your comments will be used in the evaluation and Preliminary Screening of this application.

Please submit your comments in writing by **October 19, 2000**. Should you find that additional time is required to complete further studies or investigations, contact me prior to this date.

The proposed Cameron Hills Drilling Project - Environmental Screening Report will be sent by mail for your review. A copy of the Emergency Response Plan, Cameron Hills - Section 3 is also being sent by mail for your review. There are additional sections of the Emergency Response Plan pertaining to general emergency response procedures which are available through the MVLWB.

If you have any questions and/or concerns regarding the land use application, contact me at (867) 669-0506.

Yours sincerely,

A handwritten signature in black ink that reads "Janpeter - Misgeld".

Janpeter Lennie-Misgeld  
Regulatory Officer

Attachment

September 7, 2000

File: MV2000A0041

**Land Use Application MV2000A0041**

**DISTRIBUTION LIST**

**First Nations**

Ron Bonnetrouge, Deh Gah Got'ie Dene Council, (F) 867-699-3210  
Lloyd Chicot, Ka'a'gee First Nation, (F) 867-825-2002  
Pat Martel, Hay River Dene Reserve, (F) 867-874-3229  
Karen Thomas, West Point First Nation, (F) 867-874-2486  
Dennis Deneron, Sambaa K'e Dene Band, (F) 867-206-2828  
Allison Armstrong, Dene Nation - (F) 920-2254  
Lorne Napier, Metis Nation - (F) 873-8851  
Maurice Boucher, Deninu Ku'e Environmental Working Committee, Fax 867-394-5122  
Micheal Nadlii, Deh Cho First Nation, (F) 867-695-2038  
Dana Cross, Hay River Metis Nation, (F) 867-874-6888

**Communities**

Don Howden, Town of Hay River, (F) 867-874-3237  
Greg Nyuli, Fort Providence Resource Management Board (F) 867-699-3133  
Albert Lafferty, Hamlet of Fort Providence, (F) 699-3210

**Government**

Paula Pacholek, Environmental Protection Branch (F) 873-8185  
Brad Colpitts, Stanton Regional Health Board (F) 669-7517  
Dwayne Flemming, Territorial Health Board (F) 873-0442  
Paul Latour, Canadian Wildlife Service (F) 873-8185  
Annette McRoberts, Lands Administrator (F) 669-2718  
Tom Andrews, Prince of Wales Heritage Museum (F) 873-0205  
Jim Coughlin, MACA, 920-6343  
GNWT – RWED (F) 873-0114  
Victoria Johnson, Environment Canada (F) 873-8185  
Karen Ditz, DFO (F) 669-4941  
Heidi Klein, MVEIRB – (F) 920-4761  
Terry Baker, NEB – (F) 403-292-5876  
John Ramsey, NRCan (F) 613-995-5719

**Others**



**Mackenzie Valley Land and Water Board**  
**7th Floor - 4910 50th Avenue**  
**P.O. Box 2130**  
**YELLOWKNIFE NT X1A 2P6**  
**Phone (867) 669-0506**  
**FAX (867) 873-6610**

September 12, 2000

File: MV2000A0041

Distribution List

Dear Sir/Madame:

**Land Use Permit Application**  
**Paramount Resources Ltd. MV2000A0041**  
**Oil and Gas Exploration, Cameron Hills Area N.T.**

Attached for your review and comments is the above mentioned Land Use application. Your comments will be used in the evaluation and Preliminary Screening of this application.

Please submit your comments **in writing** by **October 13, 2000**. Should you find that additional time is required to complete further studies or investigations, contact me prior to this date.

The proposed Cameron Hills Drilling Project - Environmental Screening Report will be sent by mail for your review. A copy of the Emergency Response Plan, Cameron Hills - Section 3 is also being sent by mail for your review. There are additional sections of the Emergency Response Plan pertaining to general emergency response procedures which are available through the MVLWB.

If you have any questions and/or concerns regarding this land use application, contact me at (867) 669-0506 or email at [janpeter@mvlwb.com](mailto:janpeter@mvlwb.com).

Yours sincerely,

A handwritten signature in black ink, appearing to read "Janpeter Misgeld".

Janpeter Lennie-Misgeld  
Regulatory Officer

Attachment

September 7, 2000

File: MV2000L1-0009

**Water License Application MV2000L1-0009**

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Karen Thomas, West Point First Nation, (F) 867-874-2486  
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Maurice Boucher, Deninu Ku'e Environmental Working Committee, Fax 867-394-5122

Paul Harrington, Hay River Metis Government, (F) 867-874-4472  
Dana Cross, Hay River Metis Nation, (F) 867-874-6888

**Communities**

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Greg Nyuli, Fort Providence Resource Management Board (F) 867-699-3133  
Albert Lafferty, Hamlet of Fort Providence, (F) 699-3210

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Jim Coughlin, MACA, 920-6343  
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Heidi Klein, MVEIRB (F) 920-4761  
Terry Baker, NEB – (F) 403-292-5876  
John Ramsey, NRCAN (F) 613-995-5719

**Others**



August 25, 2000

VIA COURIER

Mackenzie Valley Land and Water Board  
7<sup>th</sup> Floor, 4910 - 50 Avenue  
Yellowknife, NT  
X1A 2P6

Attention: Ken Weagle, Executive Director

Dear Sir:

**Re: Land Use Permit and Water Licence Applications  
Cameron Hills Drilling Project**

Paramount Resources Ltd. is submitting a Land Use Application and a Water Licence Application covering drilling, completion and flow testing activities in the Cameron Hills area.

Paramount has been active in the Cameron Hills for several years and has two (2) existing land use permits in this area. As noted in the enclosed Environmental Screening Report, Paramount has significant land tenure in the Cameron Hills area where these activities are planned.

In consultation with the Mackenzie Valley Land & Water Board staff, it was determined that Paramount would supplement the existing environmental studies submitted in support of prior land use permits. The enclosed Environmental Screening Report contains biophysical, soils, aquatic and heritage resources potential encompassing the Paramount Significant Discovery Areas. An Emergency Response Plan complete with a spill contingency is also enclosed in support of these applications.

Paramount is actively seeking all regulatory approvals to facilitate a winter drilling program with a start date of December 1, 2000 (earlier if frozen ground conditions permit). We would appreciate every effort your office could provide to ensure the timely issuance of these permits.

Please do not hesitate to contact Shirley Maaskant at (403) 290-3618 if you require additional information to process these applications. Thank you for your continued assistance.

Yours truly,

PARAMOUNT RESOURCES LTD.

*for* Shirley Maaskant  
Regulatory & Community Affairs Coordinator  
Encl:

**Mackenzie Valley Land  
& Water Board**

**File** \_\_\_\_\_

AUG 29 2000

MU 2000 LI-0009

Application # MU 2000 A0041

Copied To KL/PLM/REG

**PARAMOUNT RESOURCES LTD.**

Suite 4700, 888 - 3rd Street S.W.,  
 Calgary, Alberta T2P 5C5  
 Telephone: (403) 290-3600

DATE

22 Aug 2000

CHEQUE NUMBER

00090801

VENDOR: RECEIVER GENERAL FOR CANADA		VENDOR NUMBER: 572	
DOCUMENT	DOCUMENT DATE	REFERENCE	AMOUNT
LAND USE	17 Aug 2000	PERMIT-2000-2001 DRILLING SEASON-CAMERON HILL S	\$4,650.00
			
<b>TOTAL</b> ↓			*****\$4,650.00

REMITTANCE STATEMENT

DETACH BEFORE DEPOSITING

FOR SECURITY PURPOSES, THE BORDER OF THIS DOCUMENT CONTAINS MICROPRINTING



4700, 888 - 3rd Street S.W.  
 Calgary, Alberta T2P 5C5  
 Telephone: (403) 290-3600

BANK OF MONTREAL  
 Calgary Main Office  
 340 - 7th AVENUE S.W.,  
 CALGARY, ALBERTA T2P 0X4

CHEQUE NUMBER

00090801

DATE

22 Aug 2000

PAY EXACTLY

\*\*\*\*\*\$4,650.00

CANADIAN FUNDS

PAY EXACTLY

\*\*\*\*\*\$4,650.00

PARAMOUNT RESOURCES LTD.

PAY TO THE ORDER OF

RECEIVER GENERAL FOR CANADA  
 OTTAWA, ON

PER

PER

BEFORE ACCEPTING CHEQUE, PLEASE HOLD UP AND EXAMINE FOR THE GENUINE SECURITY "Defensa" WATERMARK FRONT AND BACK.

⑈000908019⑈ ⑆00109⑆00⑆ 1088⑆590⑆73

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

GENERAL RECEIPT / RÉCÉPISSÉ GÉNÉRAL

C 119077

Date	Nature and no. of remittance - Forme et n° de la remise	Invoice no. - N° de facture	Branch - Direction
AUG 22/00	CHQ # 00090801	AUG 22/00	MULLWB
Location - Endroit		YK	
Received the sum of - Reçu la somme de			
~FOUR THOUSAND SIX HUNDRED FIFTY ~ 100 Dollars \$~4650.00			

From - De

For - Pour

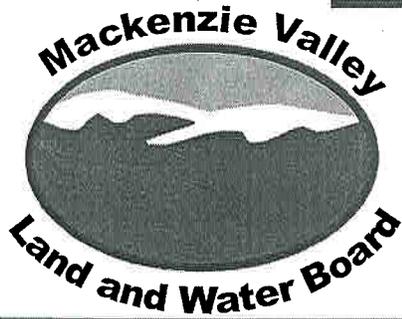
NEW APPLICATION

(MU 2000 A 0041)

PARAMOUNT RESOURCES LTD

SUITE 4700, 888 - 3RD STREET SW

CALGARY AB T2P 5C5



**Mackenzie Valley Land and Water Board**  
**7th Floor - 4910 50th Avenue**  
**P.O. Box 2130**  
**YELLOWKNIFE NT X1A 2P6**  
**Phone (867) 669-0506**  
**FAX (867) 873-6610**

**Application for:**

**New Land Use Permit**  **Amendment**  **or Renewal**

<p>1. Applicant's name and mailing address:</p> <p>Paramount Resources Ltd.          4700 Bankers Hall West          888 3<sup>rd</sup> Street SW          Calgary, Alberta T2P 5C5</p>	<p>Fax number: (403) 264-9206</p> <p>Telephone number:          (403) 290-3600</p>
<p>2. Head office address:</p> <p>Same as above.</p> <p>Field supervisor: To be determined.          Radiotelephone: To be determined.</p>	<p>Fax number: Same as above.</p> <p>Telephone number: Same as above.</p>
<p>3. Other personnel (subcontractor, contractors, company staff etc.)          Contractors are yet to be determined and will vary as to availability and specialty.          The personnel involved in the project will include the contractors and Paramount Resources staff, for the construction, drilling, completion, testing, of the wells and road maintenance staff.</p> <p>TOTAL: 20 persons per camp x 6 camps x 60 days = 7,200 person days.</p>	
<p>4. Eligibility:          (Refer to section 18 of the <i>Mackenzie Valley Land Use Regulations</i>)</p> <p>a)(i) <input type="checkbox"/>      a)(ii) <input checked="" type="checkbox"/>      a)(iii) <input type="checkbox"/>      b)(i) <input type="checkbox"/>      b)(ii) <input type="checkbox"/></p>	
<p>5. a) Summary of operation (Describe purpose, nature and location of all activities.)</p> <p>Paramount Resources is proposing to complete winter access and lease construction, drilling 9 new wells, and completing and testing at seven existing wells in the Cameron Hills, NT, that all lie within an area bordered on the north by latitude 60° 20', on the south by latitude 60° 00', on the east by longitude 117° 15', and on the west by longitude 117° 50'. In addition, Paramount may need to access any of the remainder of their 19 existing leases and drill up to 10 additional wells in the future (depending on prior drilling success). Operations will include preparation of the winter access, ice bridges and construction of wellsites as appropriate, as well as operation of camps, drilling, completing and flow or pressure testing. Please see the attached environmental screening for more details on the testing and new well drilling program. Should the wells go to production, a separate land use permit application would be submitted. Paramount currently has 19 surface leases, 2 Land Use Permits, 12 Significant Discovery Licences, 4 Commercial Discovery Declarations, 3 Production Licences, and an approved Oil Development Plan within this area.</p> <p>b) Please indicate if a camp is to be set up. (Please provide details on a separate page, if necessary.)          Up to six 20 man camps with access being via the winter road, existing seismic lines and clearings/well leases would be located in close proximity to the drilling operations. See the attached screening for location details. Water for the camps will be obtained from a water well, either the existing well or a new one drilled on one of the leases.</p>	

6. Summary of potential environmental and resource impacts (describe the effects of the proposed land-use operation on land, water, flora & fauna and related socio-economic impacts). Use separate page if necessary.)

Minimal environmental impacts are anticipated as winter access routes will utilize a previously permitted winter road or be located on existing seismic lines to the maximum extent feasible. New access roads constructed to camps/ wellsites would be minimized as existing clearings would be used. Ice bridges will be constructed at previously used crossing locations for the Cameron River and other drainages as required. Project activities will occur during the winter months during frozen ground conditions. Water for camp purposes will be obtained from a well and trucked to the camps. It is estimated that each the service rig/camp setup will utilize 25 m<sup>3</sup>/day (or 50 m<sup>3</sup>/day total) and each drilling/camp setup will utilize 50 m<sup>3</sup> of water per day (150 m<sup>3</sup>/day total) for the drilling and testing period (60 days), including road maintenance. Regional and site specific environmental data is presented in the "Environmental Screening Report for the Cameron Hills Drilling Project" submitted to support this application. Environmental data relevant to any new well sites to be drilled and/or tested in the region would presented to the Board prior to work commencement. Environmental impacts are predicted to be not significant, as the environmental protection measures and mitigation plans outlined in the above report address potential concerns.

7. Proposed restoration plan (please use a separate page if necessary).

Disturbance is anticipated to be minimal due to winter construction, frozen ground conditions, the use of ice bridges at previously used drainage crossings and the use of existing disturbance corridors. A Gel Chem mud system will be used, and drilling fluids to be disposed of approved off-site sumps. Slash will be rolled back over the lease, and any erosion prone areas of the access as appropriate. Ice bridges will be v-notched to enhance melting in the spring. No woody debris will be allowed to enter the drainages. Restoration techniques discussed in the "Environmental Screening Report for the Cameron Hills Drilling Project" submitted to support this application will be applicable to any new wells drilled and/or tested in the application area.

8. Other rights, licences or permits related to this permit application (mineral rights, timber permits, water licences, etc.)

Paramount Resources is also applying for a Water Licence for this project, as well as a Timber Permit and a Fuel Storage Permit.

Roads:  Is this to be a pioneered road? No  Has the route been laid out or ground truthed? Yes (for the surveyed and existing wells). Any subsequent new wells would have the routes surveyed and ground truthed, and the information submitted to the Board.

9. Proposed disposal methods.

a) Garbage: Combustible and non-combustible garbage is separated. Combustible garbage is burned in an incinerator and non-combustible garbage is compacted and removed and hauled to the approved landfill.

c) Brush & trees: During site preparation, standing timber and slash will be cleared and windrowed to the edge of the site. The windrow shall be separated from the standing timber and will be made to lie flat and compact by bucking the material into suitable lengths and/ or crushing with heavy machinery. Once drill testing is complete the windrow will be rolled back and spread over the well site.

b) Sewage (Sanitary & Grey Water):  
Camp sewage will be treated, then mixed and buried and covered in the camp sump.

d) Overburden (Organic soils, waste material, etc.):  
The organic layer will be rolled back onto the well site once Drilling operations have been concluded and the sump has been re-contoured.

10. Equipment (includes drills, pumps, etc.) (Please use separate page if necessary.)

Type & number	Size	Proposed use
Drilling rigs (3)		Drilling
Water Truck (3)		Water down roads, camp water, water to rigs
Caterpillar - 2 to 3	D-5, WP, D-6, D-7	Moving snow/ ice road construction
Service Rigs (2)		Complete well testing
Grader (2)	D-16 - G	Moving snow and smoothing road surfaces.

11. Fuels	(x)	Number of containers	Capacity of containers	Location
Diesel	X	3 3	27 m <sup>3</sup> 9 m <sup>3</sup>	Well sites Camp
Gasoline	X	3	27 m <sup>3</sup>	Wellsite
Aviation fuel		10	45 gallon drums	Camp (helipad)
Propane	X	4	500 lb bottle	Wellsite
Other				

12. Containment fuel spill contingency plans. (Please attach separate contingency plan if necessary).

A Fuel Spill Contingency Plan and an Emergency Response Plan (ERP) will be submitted under a separate cover.

13. Methods of fuel transfer (to other tanks, vehicles, etc.)

Fuel will be brought to site by a fuel truck and will be transferred by standard steel line fuel pump and fuel hose, hand pump or gravity feed. Spill kits will be available.

14. Period of operation (includes time to cover all phases of project work applied for, including restoration)

The proposed time schedule is as follows:

November 1 to April 15, with exact timing dependant on equipment availability and frozen ground conditions.

15. Period of permit (up to five years, with maximum of two years of extension).

Start date: November 1, 2000

Completion date: November 1, 2007

16. Location of activities by map co-ordinates (attached maps and sketches)

Minimum latitude (degree, minute) 60° 00'

Maximum latitude (degree, minute) 60° 20'

Minimum longitude (degree, minute) 117° 15'

Maximum longitude (degree, minute) 117° 50'

Map Sheet no. 85C

17. Applicant

Print name in full Shirley Maaskant

Signature

*S Maaskant*

Date August 14, 2000

18. Fees

Type A - \$150.00

Type B - \$150.00

Land use fee: 90 hectares @ \$50.00/hectare

\$ 4,500.00

Assignment fee \$50.00

\$ \_\_\_\_\_

Total application and land use fees

\$4,650.00

The adjustment of fees for actual hectares used for the operations will be based on the final plan and completion of verification.



August 25, 2000

VIA COURIER

Mackenzie Valley Land and Water Board  
7<sup>th</sup> Floor, 4910 - 50 Avenue  
Yellowknife, NT  
X1A 2P6

Attention: Ken Weagle, Executive Director

Dear Sir:

Re: Land Use Permit and Water Licence Applications  
Cameron Hills Drilling Project

Paramount Resources Ltd. is submitting a Land Use Application and a Water Licence Application covering drilling, completion and flow testing activities in the Cameron Hills area.

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Please do not hesitate to contact Shirley Maaskant at (403) 290-3618 if you require additional information to process these applications. Thank you for your continued assistance.

Yours truly,

PARAMOUNT RESOURCES LTD.

for Shirley Maaskant  
Regulatory & Community Affairs Coordinator  
Encl:

Mackenzie Valley Land  
& Water Board

File

AUG 29 2000

MU 2000 LI-0009

Application # MU 2000 A0041

Copied To KL/PLM/REG

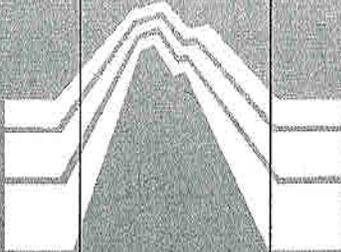
**PARAMOUNT RESOURCES LTD.**

Suite 4700, 888 - 3rd Street S.W.,  
 Calgary, Alberta T2P 5C5  
 Telephone: (403) 290-3600

DATE  
 18 Aug 2000

CHEQUE NUMBER  
 00090781

VENDOR RECEIVER GENERAL FOR CANADA		VENDOR NUMBER	572
DOCUMENT	DOCUMENT DATE	REFERENCE	AMOUNT
LICENSE	16 Aug 2000	WATER-2000-2001 DRILLING SEASON-CAMERON HILLS	\$30.00
<b>TOTAL</b>			*****\$30.00



**Paramount**  
 resources ltd.

REMITTANCE STATEMENT

DETACH BEFORE DEPOSITING

FOR SECURITY PURPOSES, THE BORDER OF THIS DOCUMENT CONTAINS MICROPRINTING



4700, 888 - 3rd Street S.W.  
 Calgary, Alberta T2P 5C5  
 Telephone: (403) 290-3600

BANK OF MONTREAL  
 Calgary Main Office  
 340 - 7th AVENUE S.W.,  
 CALGARY, ALBERTA T2P 0X4

CHEQUE NUMBER  
 00090781

DATE  
 18 Aug 2000

PAY EXACTLY  
 \*\*\*\*\*\$30.00  
 CANADIAN FUNDS

PAY EXACTLY

\*\*\*\*\*\$30.00

PARAMOUNT RESOURCES LTD.

PAY TO THE ORDER OF

RECEIVER GENERAL FOR CANADA  
 OTTAWA, ON

PER Charles E. Morin  
 PER Jo Luber

BEFORE ACCEPTING CHEQUE, PLEASE HOLD UP AND EXAMINE FOR THE GENUINE SECURITY "Defensa" WATERMARK FRONT AND BACK

⑈000907812⑈ ⑆00109⑈00⑆ 1088⑈590⑈73

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

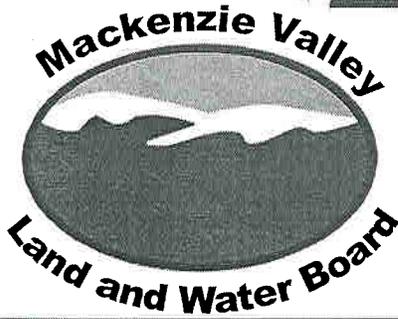
GENERAL RECEIPT / RÉCÉPISSÉ GÉNÉRAL

C 119078

Date AUG 29/00	Nature and no. of remittance - Forme et n° de la remise CHQ# 00090781	Invoice no. - N° de facture AUG 18/00	Branch - Direction MULWB
Received the sum of - Reçu la somme de ~ THIRTY ~		Location - Endroit YK	
		100 Dollars \$ ~ 30.00 ~	

From - De: (PARAMOUNT RESOURCES LTD)  
 SUITE 4700, 888-3RD STREET S.W.  
 CALGARY AB T2P 5C5

For - Pour: NEW APPLICATION (WATER)  
 (MU 2000 L1-0009)



Mackenzie Valley Land and Water Board  
 7th Floor - 4910 50th Avenue  
 P.O. Box 2130  
 YELLOWKNIFE NT X1A 2P6  
 Phone (867) 669-0506  
 FAX (867) 873-6610

**APPLICATION FOR WATER LICENCE, AMENDMENT OF LICENCE,  
 OR RENEWAL OF LICENCE**

**Application/License No:**  
 (amendment or renewal only)

<p><b>1. Name and Mailing Address of Applicant</b></p> <p>Paramount Resources Ltd.          4700 Bankers Hall West          888 3<sup>rd</sup> Street SW          Calgary, Alberta T2P 5C5</p> <p>Telephone: (403) 290-3600          Fax: (403) 264-9206</p>	<p><b>2. Address of Head Office in Canada if Incorporate</b></p> <p style="text-align: center;">Same</p> <p>Telephone: Same          Fax: Same</p>
--	--

**3. Location of Undertaking (describe and attach a map, indicating watercourses and location of any proposed waste deposits).**

The access construction, well drilling, well completions, well testing, and camp operations will occur within an area delineated as follows: to the north by latitude 60° 20', on the south by latitude 60° 00', on the east by longitude 117° 15', and on the west by longitude 117° 50'.

This license will apply to the existing 19 surface leases within this area, as well as the nine new wells proposed for the winter of 2000/2001, and the potential 10 new wells that may be drilled in the upcoming seasons. Please see the attached Environmental Screening Report for locations, maps and details known at this time. Site specific information would be provided to the Board prior to construction or drilling of any new wells not currently identified.

**4. Description of Undertaking (describe and attach plans)**

A new water license is required to complete operations originally described in previous applications for a water license, as well as the new proposed drilling and testing program, and up to 10 wells in the future (depending on drilling success). The project will be completed as described in the "Environmental Screening Report for the Cameron Hills Drilling Project" submitted to support the land use permit and water license applications. On the existing leases, no

new activities are planned on the lease, and only the timing of the activities has changed. Please see the attached Environmental Screening Report for descriptions, mitigation, maps and plans for project components known at this time.

**5. Type of Undertaking.**

- |                       |       |                  |       |
|-----------------------|-------|------------------|-------|
| 1. Industrial         | X     | 5. Agriculture   | _____ |
| 2. Mining and Milling | _____ | 6. Conservation  | _____ |
| 3. Municipal          | _____ | 7. Recreation    | _____ |
| 4. Power              | _____ | 8. Miscellaneous | _____ |

**6. Water Use**

- |  |       |                                      |       |
|--|-------|--------------------------------------|-------|
| To obtain water                            | X     | Flood control                        | _____ |
| To cross a watercourse                     | X     | To divert water                      | _____ |
| To modify the bed or bank of a watercourse | _____ | To alter the flow of, or store water | _____ |

Other (describe): Waste deposition into a remote sump.

**7. Quantity of water involved (litres per second, litres per day or cubic meter per year, including both quantity to be used and quality to be returned to source.**

Water will be required for each camp and drilling rig or service rig combination. Service rigs require significantly less water than do drilling rigs. As such, it was estimated that an average water use for the two service rig/ camp setups would be 50 m<sup>3</sup>/day, and average daily water use for the three drilling rigs/camp setups would be 150 m<sup>3</sup>/day; or 200 m<sup>3</sup> total each day, for the 60 day program period. This totals 12,000 m<sup>3</sup> to complete the drilling and testing, including road maintenance. Water will come from a nearby lake that has been used as a water source in previous years, a water well may be drilled at the camp site or the existing well used if appropriate. Please refer to the Screening Report for more details.

**8. Waste deposited (quantity, quality, treatment and disposal)**

Drill cuttings and drilling mud are the wastes to be deposited. The drilling fluid used will be a freshwater, non-toxic system (gel-chem). Drilling fluids will be analyzed and treated if required. Freshwater drill waste will be disposed of by the mix, bury and cover on location method at the sump.

9. **Other persons or properties affected by this Undertaking (give name, mailing address and location. Attach a list if necessary.**

None have been identified.

10. **Predicted environmental impacts of undertaking and proposed mitigation.**

Minimal environmental impact is anticipated. Please refer to the Environmental Screening Report submitted to support the application, which provides environmental information on the general project region of the project, as well as site specific information for the 2000/2001 drilling and testing program. The construction techniques and environmental protection measures outlined in the Screening Report would apply to any new wells drilled in the future. Site specific information would be supplied to the Board prior to any work on new wells.

11. **Contractors and sub-contractors (names, addresses and functions). Attach a list if necessary.**

Contractors are yet to be determined and will vary as to availability and specialty.

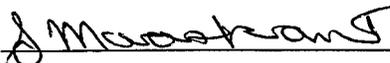
12. **Studies undertaken to date. Attach a list if necessary.**

The "Environmental Screening Report for the Cameron Hills Drilling Project" contains environmental information on the region, as well as site specific information on the proposed wells to be drilled this winter, the sumps, camps, water source, borrow pit and access. The Screening Report also includes relevant construction techniques and environmental protection measures that would be relevant to this project.

13. **Proposed time schedule.**

Start date: September 30, 2000      Completion date: September 30, 2007

Name (print): Shirley Maaskant

Signature: 

Title (print): Regulatory and Community Affairs Coordinator

Date: August 14, 2000

***FOR OFFICE USE ONLY***

**Application Fee Amount:**     \$ \_\_\_\_\_     **Receipt No:**     \_\_\_\_\_

**Water Use Deposit Amount:**     \$ \_\_\_\_\_     **Receipt No:**     \_\_\_\_\_

**MACKENZIE VALLEY LAND AND WATER BOARD**

**OIL AND GAS EXPLORATION DRILLING QUESTIONNAIRE FOR WATER  
LICENCE APPLICATIONS**

**Prepared by  
Department of Indian Affairs and Northern Development  
Water Resources Division  
August, 1999**

**Revised by  
Mackenzie Valley Land and Water Board  
March 29, 2000**

## **INTRODUCTION**

The purpose of this questionnaire is to solicit supplemental information from an applicant to support their application for a water licence (or renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the Mackenzie Valley Land and Water Board having to solicit additional information after an application has already been submitted. This information will also be useful during the pre-screening of your application, which must be undertaken prior to development and approval of a water licence to determine if the Application needs to be referred to the Environmental Impact Review Board.

The applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to his/her operation, the applicant is requested to indicate "N/A" (Not Applicable).

If any questions arise while completing the questionnaire, the applicant may wish to contact the Mackenzie Valley Land and Water Board at (867) 669-0506.

TABLE OF CONTENTS

OIL AND GAS EXPLORATION DRILLING QUESTIONNAIRE FOR WATER LICENCE APPLICATIONS ..... 1

INTRODUCTION..... 2

SECTION 1 -- PRELIMINARY SITE ASSESSMENT ..... 4

SECTION 2 -- WATER USE AND WASTE DISPOSAL ..... 7

SECTION 3 -- CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING ..... 9

SECTION 4 -- PRESCREENING..... 9

SECTION 5 -- LIST OF ATTACHMENTS ..... 11

If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or attachments.  
List attachments in Appendix I.  
Print or type your responses.

## SECTION 1 -- PRELIMINARY SITE ASSESSMENT

DATE: August 14, 2000 \_\_\_\_\_

### 1.1 APPLICANT:

COMPANY NAME: Paramount Resources Ltd.

ADDRESS: 4700 Bankers Hall West

888 3<sup>rd</sup> Street SW

Calgary, Alberta T2P 5C5

PROPERTY NAME/EXPLORATION LIC. #: Cameron Hills

CLOSEST COMMUNITY: Enterprise

LAT/LONG OF WELL CENTRE (Degrees, minutes, seconds):

The program area is described as lying within an area bordered on the north by latitude 60° 20', on the south by latitude 60° 00', on the east by longitude 117° 15', and on the west by longitude 117° 50'.

The new wells to be drilled, and their locations are:

G-3 Well centre located at	60° 02' 23.743"	117° 30' 51.584"
M-73 (02) Well centre located at	60° 02' 49.599"	117° 29' 55.608"
D-74 Well centre located at	60° 03' 05.236"	117° 29' 50.334"
A-4 Well centre located at	60° 03' 07.304"	117° 30' 24.092"
H-4 Well centre located at	60° 03' 26.834"	117° 30' 25.113"
C-74- Well centre located at	60° 03' 13.338"	117° 29' 27.145"
B-5 Well centre located at	60° 04' 06.899"	117° 30' 49.646"
I-73 Well centre located at	60° 02' 44.692"	117° 28' 24.475"
A-46 Well centre located at	60° 05' 04.581"	117° 37' 36.463"

In addition, the remainder of the 19 existing wells may be accessed for wellbore & flow testing operations, and up to 10 wells may be drilled within the program area in the future, depending on success of the drilling programs.

**1.2 PRIMARY COMPANY CONTACT:**

NAME: Shirley Maaskant.

TITLE: Regulatory & Community Affairs Coordinator

CONTACT NUMBER: (403) 290-3600

ALTERNATE CONTACT NUMBERS: Tim Wood, Drilling Engineer 403-290-3600

**1.3 FIELD CONTACT:**

NAME (If known): Norris Fankhanel (consultant)

TITLE (If known): Construction Supervisor

CONTACT NUMBER: (403) 845-0746 – a satellite phone will be installed at commencement of operations and the number(s) will be forwarded to the Board.

**1.4 INDICATE THE STATUS OF THIS APPLICATION:**

NEW APPLICATION            RENEWAL      \_\_\_\_\_

IF RENEWAL, INCLUDE LICENCE NUMBER: \_\_\_\_\_

**1.5 SITE HISTORY**

INDICATE IF THIS SITE CONTAINS ANY KNOWN:

\_\_\_\_\_ FORMER WELL SITES

\_\_\_\_\_ WASTE DUMPS

\_\_\_\_\_ FUEL AND CHEMICAL STORAGE AREAS

\_\_\_\_\_ SUMP AREAS

\_\_\_\_\_ WASTE WATER DISCHARGE LOCATIONS

**1.6 DESCRIBE SITES AND REFERENCE THEM ON THE MAP IN QUESTION 1.6.**

Please see the attached Environmental Screening Report for camp and sump locations. The fuel storage area will be located at the leases and the camps.

**1.7 ATTACH MAPS DRAWN TO SCALE SHOWING LOCATIONS OF EXISTING AND PROPOSED:**

- CAMP FACILITIES
- WELL SITE(S)
- SUMPS
- WATER SOURCES
- FUEL AND CHEMICAL STORAGE FACILITIES
- DRILLING MUD STORAGE AREAS
- DRAINAGE CONTROLS
- TRANSPORTATION ROUTES (SEASONAL AND ALL WEATHER)\*
- ELEVATION CONTOURS
- LOCATIONS OF WATERBODIES
- DRAINAGE PATTERNS FOR WELL AND CAMP SITES

Please see the attached Environmental Screening Report for the locations requested above.

- CLEARLY IDENTIFY CROSSINGS OVER WATER COURSES GREATER THAN 5 M AT ORDINARY HIGH WATER MARK.

The only crossings greater than 5 m in width that were identified, were the crossings of the Cameron River by the access routes. These crossings locations have been used previously for access during seismic and drilling operations.

Please see the attached Environmental Screening Report for crossing locations.

**1.8 DESCRIBE THE PROPOSED OR CURRENT METHOD OF FRESHWATER WITHDRAWAL, THE TYPE AND OPERATING CAPACITY OF THE PUMPS USED AND THE INTAKE SCREEN SIZE.**

Water for drilling will be taken from an unnamed lake in the area, or a water well will be drilled. Water will be withdrawn with an intake hose to a water truck. Intake screens on the intake hoses will be 5 mm in size to prevent the entrainment of small fish, as appropriate (lake considered to be incapable of overwintering fish).

**1.9 ESTIMATE MAXIMUM DRAW DOWN AND RECHARGE CAPABILITY OF THE RIVER OR LAKE FROM WHICH FRESH WATER WILL BE DRAWN. QUOTE DRAW DOWN IN CENTIMETRES, OR, STATE PERCENTAGE OF FLOW WITHDRAWN.**

It is estimated that 12,000 m<sup>3</sup> of water will be required to complete the drilling and testing program over a 60 day period. The draw down with respect to the two potential water source lakes in the immediate vicinity of the drilling program was investigated. For sketches of the lake, please see the attached Environmental Screening Report. It should be noted that this lake has been used previously for water during previous drilling programs, and further, it is too shallow to overwinter fish. The lake (UNL1) would be subjected to a 2 cm drawdown, if all of the water for the program was taken from it. However, camp water will be obtained from an existing well, or a new well drilled at the camp. Recharge for the lake is expected to occur through groundwater movement, and/or runoff in the spring.

**1.10 INDICATE IF PERMAFROST IS EXPECTED TO BE ENCOUNTERED UNDER:**

\_\_\_\_\_ CAMP FACILITIES

\_\_\_\_\_ WELL SITE

\_\_\_\_\_ ACCESS ROUTES

\_\_\_\_\_ SUMPS

\_\_\_\_\_ OTHER

We do not expect to encounter permafrost in this area, however it is a possibility. Paramount has not encountered permafrost in the area when drilling (lease construction, drilling, sumps) in past years.

**1.11 INDICATE ANY POTENTIAL FOR ENCOUNTERING ARTESIAN AQUIFERS OR LOST CIRCULATION WITHIN THE SURFACE HOLE (TO CASING DEPTH):**

Artesian aquifers or lost circulation within the surface hole were not encountered when drilling wells in the area in the past. Based on past well history in the area, Paramount does not expect to encounter Artesian aquifers or lost circulation.

**1.12 ATTACH A DESCRIPTION OF THE SURFICIAL GEOLOGIC AND HYDRO-GEOLOGIC CONDITIONS IN THE IMMEDIATE VICINITY OF THE WELL SITE.**

Surficial geology consists of glacial drift and postglacial sediment. Surface drainage is internal at the well sites.

**SECTION 2 -- WATER USE AND WASTE DISPOSAL**

**2.1 OUTLINE ALL WATER USAGE IN THE DRILL PROGRAM, CAMP FACILITIES, AND ROAD CONSTRUCTION. INDICATE THE SOURCE AND VOLUME OF WATER FOR EACH USE.**

	Source	Use	Average Volume (m <sup>3</sup> /day)
1.	Water well	Camp Needs	50
2.	Unnamed Lake or water well	Drilling/testing	150
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

TOTAL:                    The daily use would be approximately 200 m<sup>3</sup>/day over the course of the 60 day drilling and testing program.

**2.2 WILL DRILLING WASTES CONTAIN DETRIMENTAL SUBSTANCES INCLUDING, BUT NOT LIMITED TO, OIL BASED OR INVERT MUDS AND HIGH SALINITY FLUIDS?**

YES    \_\_\_\_\_                    NO    X

IF YES INDICATE SUBSTANCES:

2.3 INDICATE THE TOTAL ESTIMATED VOLUME OF DRILLING WASTES.

125 CUBIC METRES (per well)

2.4 INDICATE METHODS FOR DISPOSAL OF DRILLING WASTES.

- SUMP
- DOWN HOLE (REQUIRES NEB APPROVAL)
- ON-SITE TREATMENT (PROVIDE PLAN)
- OFF-SITE (GIVE LOCATION AND METHOD OF DISPOSAL)

2.5 IF A SUMP IS BEING USED, ATTACH THE FOLLOWING INFORMATION:

- SCALE DRAWINGS AND DESIGN OF SUMPS
- CAPACITY IN CUBIC METRES
- BERM EROSION PROTECTION
- SOIL PERMEABILITY AND TYPE
- RECYCLING/RECLAIMING WATERS
- SURFACE DRAINAGE CONTROLS
- ABANDONMENT PROCEDURES

Two remote sumps will be located near the centre of the drilling operations: one at J-4 and the second at A-46. For location and construction details, please refer to the attached Environmental Screening Report. The boundaries of each wellsite will be bermed to prevent run-off from entering the surrounding environment. The sumps will be located on an area where clay substrate is located, or they will be lined.

**Abandonment procedures for each sump are as follows:**

The edges of the sump and burial pit used for disposal, will be overlapped during backfill operations to mitigate the possibility of post-abandonment subsidence of the fill material. Before backfilling, if sump/pit closure is conducted during the fall or winter, any accumulated snow cover on the sump/pit surface and salvaged material piles will be removed to the extent feasible, as snow sandwiched between fill lifts or entrained in fill material may promote subsidence during thaw periods. To further mitigate post-abandonment subsidence, backfill material will be compacted during each lift replacement and a cap will be created over the sump (i.e., 1 to 1.5 m in height) to compensate for any settling and to divert surface water away from the site. Following backfill operations, the sump/pit locations will be recontoured as necessary to promote site stability, which will include rollback of any salvaged slash or other organic debris. The rollback, combined with cleat imprints from heavy equipment, will provide a rough micro-topography that helps plant re-establishment by creating micro-habitats and increases plant biodiversity by producing a variety of microclimate habitats. Required seeding programs will take place at the end of the project, however site visits will occur in the following summer to evaluate reclamation work and undertake remedial seeding as necessary.

2.6 WILL A CAMP BE PROVIDED?

YES  NO

**2.7 IF YES, THEN INDICATE THE CAPACITY AND THE EXPECTED MAXIMUM NUMBER OF PERSONS THAT WILL BE ACCOMMODATED.**

CAPACITY 20 \_\_\_\_\_ PERSONS (per rig)  
MAXIMUM ACCOMMODATED 20 \_\_\_\_\_ PERSONS (per rig)

There will be up to seven camp locations throughout the program area, with the camps moving as appropriate to minimize travel distances. Existing camps and clearings will be used the maximum extent feasible.

**SECTION 3 -- CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING**

**3.1 ATTACH THE PROPOSED OR EXISTING CONTINGENCY PLAN WHICH DESCRIBES COURSE OF ACTION, MITIGATIVE MEASURES AND EQUIPMENT AVAILABLE FOR USE IN THE EVENT OF SYSTEM FAILURES AND SPILLS OF HAZARDOUS MATERIALS (IN COMPLIANCE WITH NWT WATER BOARD GUIDELINES FOR CONTINGENCY PLANNING, 1987).**

These will be submitted under a separate cover.

**3.2 ATTACH AN INVENTORY OF HAZARDOUS MATERIALS ON THE PROPERTY (AS DEFINED UNDER TRANSPORTATION OF DANGEROUS GOOD REGULATIONS).**

Please refer to attached Environmental Screening Report and the Emergency Response Plan.

**3.3 ATTACH AN OUTLINE OF PLANNED ABANDONMENT AND RESTORATION PROCEDURES.**

Please refer to attached Environmental Screening Report:

**SECTION 4 -- PRESCREENING**

Your application and other project details, such as this questionnaire, will be sent out for review by local aboriginal groups as well as territorial and federal government agencies. Their comments regarding the significance of project impacts are considered before a decision is made to allow the project to proceed.

**4.1 HAS THIS PROJECT EVER UNDERGONE AN INITIAL ENVIRONMENTAL ASSESSMENT, INCLUDING PREVIOUS OWNERS?**

YES X (regional) NO \_\_\_\_\_

IF YES, BY WHOM/WHEN: Paramount has completed initial environmental screenings of the project area with Hardy BBT (1991) and ARC (1998). Further, an Environmental Screening Report has been prepared for the current drilling and testing program and is attached.

**4.2 HAS BASELINE DATA BEEN COLLECTED FOR THE MAIN WATER BODIES IN THE AREA?**

YES X NO \_\_\_\_\_

IF YES, ATTACH DATA.

Please see the attached Environmental Screening Report.

**4.3 HAS BASELINE DATA BEEN COLLECTED AND EVALUATED WITH RESPECT TO THE BIOPHYSICAL COMPONENTS OF THE ENVIRONMENT POTENTIALLY AFFECTED BY THE PROJECT (WILDLIFE, SOILS, AIR QUALITY)**

YES X NO \_\_\_\_\_

**IF YES, ATTACH DATA.**

Please refer to the attached Environmental Screening Report.

**4.4 ATTACH A DESCRIPTION OF ALL PROPOSED AND EXISTING ENVIRONMENTAL MONITORING PROGRAMS.**

Monitoring of reclamation of well sites is planned for 1-2 years after activities are complete. Notes will be kept by the construction manager with respect to wildlife sightings during the drilling program. Of particular interest will be any sightings of bison, which will be immediately reported to RWED in Hay River.

**4.5 HAS A COMMUNITY CONSULTATION PROGRAM BEEN INITIATED?**

YES X NO \_\_\_\_\_

**IF YES, PROVIDE DETAILS OF THE PROGRAM.**

Contact has been initiated with the various communities with interests in the program area. Please refer to the attached Environmental Screening Report for details.

