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 16, 2005 File: MV2005B0021

Distribution List **Deh Cho**

Dear Sir/Madame:

Application Review Process – 2D Seismic – Cameron Hills, Significant Discovery License 8

Attached for your review and comments is the aforementioned 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 7, 2005** quoting Land Use Permit MV2005B0021. Should you find that additional time is required to complete further studies or investigations, contact me prior to this date.

If you have any questions regarding the land use application, contact me at (867) 669-0506 or email mvlwbpermit@mvlwb.com.

Yours sincerely,

Adrian Paradis
Regulatory Officer

Attachment

September 16, 2005

Application MV2005B0021

DISTRIBUTION LIST by Fax

CAMERON HILLS AREA – DEHCHO

FIRST NATIONS

Grand Chief Herb Norwegian	Dehcho First Nations	35	867-695-2038
Chief Berna Landry	Deh Gah Got'ie Dene Council	18	867-699-3210
Chief Lloyd Chicot	Ka'a'gee Tu First Nation	21	867-825-2002
Chief Roy Fabian	K'atlodeeche First Nation	20	867-874-3229
Chief Karen Felker	West Point First Nation	19	867-874-2486

COMMUNITIES

Mayor Maggie Levavasseur	Hamlet of Fort Providence	18	867-699-3210
Mayor Diana Ehman	Town of Hay River	16	867-874-3237
Mayor Winnie Cadieux	Enterprise Settlement Corporation	24	867-984-3400

ABORGINAL ORGANIZATIONS

President Robert Tordiff	Northwest Territory Métis Nation	45	867-872-2772
Heidi Wiebe	Deh Cho Land Use Planning Committee	41	867-699-3166
President Danny Beck	Hay River Métis Council		867-874-4472
Mandell Pinder, Barrister & Solicitors	Ka'a'gee Tu First Nation (Kakisa)		604-681-0959
President Albert Lafferty	Fort Providence Métis Council #57		867-699-4319
Chris Paci	Dene Nation	40	920-2254

GOVERNMENT

Ed Hornby	South Mackenzie District Office	57	669-2720
Kathleen Racher	South Mackenzie District Office	58	669-2716
Mineral Development Advisor	Mineral Development Division	59	669-2705
Tom Andrews	GNWT-Prince of Wales Heritage Museum	60	873-0205
Mark Davy	GNWT – MACA	62	920-6343
Duane Fleming	GNWT – Health	65	873-0122
Jason McNeil	GNWT – ENR	63	873-4021
Michael Brown	GNWT – DOT	64	920-2565
Mike Fournier	Environment Canada	66	873-8185
Bruce Hanna	DFO	68	669-4940

OTHERS

Michel Mantha	NEB	61	403-292-5503
Jennifer Morin	CPAWS	49	873-9593
Vern Christensen	MVEIRB	50	766-7074
Joe Acorn	Consultant		873-9190

If there is an error in our contact, please notify our office.

Mackenzie Valley
Land and Water Board

Land Use Permit Application

Paramount Resources ltd.
Seismic 2-D Program
A05P – CAM – 2D

Table of Contents

Land Use Permit Application
Seismic 2-D Program
A05P – CAM – 2D

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

Application for:
New Land Use Permit [X] Amendment [ ] or Renewal [ ]

1. Applicant's name and mailing address: Paramount Resources ltd. 4700, 888 – 3rd Street S.W. Calgary, Alberta T2P 5C5	Fax number: 403-264-9206 Telephone number: 403-290-3600
2. Head office address: Same Field supervisor: To be determined Radiotelephone: Will advise upon personnel designation	Fax number: Same Telephone number: Same

3. Other personnel (subcontractor, contractors, company staff etc.)
To be determined upon contract award. Total approximate man days to complete the project if dynamite is used as the source would total 350, and 400 man days if vibroseis is utilized.

TOTAL: (Number of persons on site) Approx. 50 in total – A maximum of 30 at any given time.

4. Eligibility:
(Refer to section 18 of the *Mackenzie Valley Land Use Regulations)*
SDL 8 (Paramount Resources ltd.)

a)(i) a)(ii) X a)(iii) b)(i) b)(ii)

5. a) Summary of operation (Describe purpose, nature and location of all activities.)

The designed seismic 2D program will map the sub-surface geology to assist in oil and gas exploration covering Significant Discovery Licence 8. Please see attached for further details as well as the enclosed map for location.

b) Please indicate if a camp is to be set up. (Please provide details on a separate page, if necessary.) No camp will be set up. Crew accommodation will be located in Indian Cabins, Alberta.

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.)

Please refer to the attached Environmental Impact Assessment and program overview.

7. Proposed restoration plan (please use a separate page if necessary).
As per government recommendations and regulations.

- All debris will be slashed into 2 meter lengths or less and bucked to lie flat.
- Vegetation will be re-established by seeding where necessary.
- All flagging, survey markers, and garbage will be removed and disposed at an approved landfill site.
- All creek crossings will be removed prior to break-up.
- Snow and ice fills will be constructed of snow and water only. Soil will be not utilized to cap the fill.
- Deliterious material will not be allow to enter any watercourse or waterbody.

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

N/A

No roads will be built.

Roads: Is this to be a pioneered road? Has the route been laid out or ground truthed?

9. Proposed disposal methods.

a) Garbage: All lines will be cleaned by the seismic contractors pick up crew (pin flags, survey lath, cap wire).

c) Brush & trees: Will be windrowed, bucked and limbed to 2 meter lengths or less and bucked to lie flat.

b) Sewage (Sanitary & Grey Water): N/A

d) Overburden (Organic soils, waste material, etc.): N/A

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

Type & number	Size	Proposed use

11. Fuels		Number of containers	Capacity of containers	Location
Diesel				
Gasoline				
Aviation fuel				
Propane				
Other				

12. Containment fuel spill contingency plans. (Please attach separate contingency plan if necessary).
Emergency response plan would be in place prior to the seismic crew departing for Indian Cabins. It would be our intent to use commercially available diesel and gasoline supplied from Indian Cabins with transfer from larger bulk fuel trucks to individual units on site. All Government regulations would be adhered to including berms, fuel spill kits, fire extinguishers, signage, etc. Please see attached for further details.

13. Methods of fuel transfer (to other tanks, vehicles, etc.) The transfer equipment would be gravity or pump assisted feed with commercial non-drip nozzles and fuel lines.

14. Period of operation (includes time to cover all phases of project work applied for, including restoration)
From early January to spring break-up in the year that the program is acquired.

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

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

See attached maps

Minimum latitude (degree, minute) 60 00	Maximum latitude (degree, minute) 60 05
Minimum longitude (degree, minute) 117 00	Maximum longitude (degree, minute) 117 15

Map Sheet no. 85C03

17. Applicant
Print name in full
Shirley Maaskant

Signature Date September 2005

18. Fees Type A - $150.00 Type B - $150.00

Land use fee ~~23.8~~ hectares @ $50.00/hectare ~~$1190.00~~
Assignment fee $50.00 $ 150.00

Calculated on 6m cat-cut lines

Total application and land use fees $ 1340.00

SIGNIFICANT DISCOVERY LICENCE 8
2-D GEOPHYSICAL PROGRAM

PARAMOUNT RESOURCES LTD.
4700, 888 – 3 St. S.W.
Calgary, Alberta

August 2005

1.0 Introduction

Paramount Resources Ltd. (Paramount) is proposing to conduct a 2-D seismic program designed to delineate potential reserves over Significant Discovery Licence 8 in the Northwest Territories. The program is located between 60^{o} 00' to 60^{o} 10' north and 117^{o} 00'to 117^{o} 15' west and consists of approximately 45 kilometers of seismic lines as shown on the attached map. Lines have been laid out utilizing existing lines where possible and practical and at a nominal 500 meter interval. This design is required to acquire data at the zone of interest in order to efficiently map the subsurface resources and minimize the environmental impact. Operations will be conducted during frozen ground conditions to minimize any potential environmental effects, likely beginning in January and completed by the end of March in the year acquired.

This program will be shot utilizing vibrators or dynamite as an energy source. Source points will be located every 60 meters along the source lines. Receivers (geophones) will be placed every 20 meters along the lines to record the shock waves returning to the surface.

Paramount believes this project will have minimal to no impact on Northwest Territory communities due to its significant distance from any community and the winter only access. However, due to the interest shown on previous Paramount Cameron Hills projects, Paramount has initiated public consultation with the communities of Enterprise, Hay River, Hay River Dene Reserve, West Point, Kakisa, and Fort Providence.

The socio-economic benefits that this program will provide to the local communities include short-term employment, particularly involving line cutting and clean up. In the long term, there exists some possibility of oil and gas field service employment if skilled northern workers are available.

2.0 Environmental Overview

2.1 Topography

Topography in the seismic exploration region (SER) varies from hilly in the northwest to subdued in the central and eastern regions. An escarpment (E-SE facing aspect) in the west part of the SER flanks part of the western edge and descends about 100 m over a distance of less than one kilometer.

A series of gullies drain the escarpment. Streams are present at the bottom of several of the larger and more incised gullies. Some slopes leading down to the streams are very steep and eroded. Some of these eroded slopes appear to be unique features but may lie outside of the SER.

East of the escarpment, the SER has an east to southeastward gentle slope. Topography is generally subdued.

2.2 Climate

The climate is classified as sub-humid high boreal ecoclimate with cool summers and very cold winters (Ecological Stratification Working Group, 1995). The mean summer and winter temperatures range between 13º C to 14º C and -18º C to -20º C respectively. Mean annual precipitation ranges from 350 to 500 mm. The frost-free period is between 59 and 72 days with local variation based on topography and elevation.

2.3 Soils

Soils in the SER are varied due to the influence of topography. Along the escarpment, upland soil types with mesic moisture conditions dominate. The driest soils occur along the crests and southwestern side slopes of some of the gullies; some of these soils lack a surface organic layer.

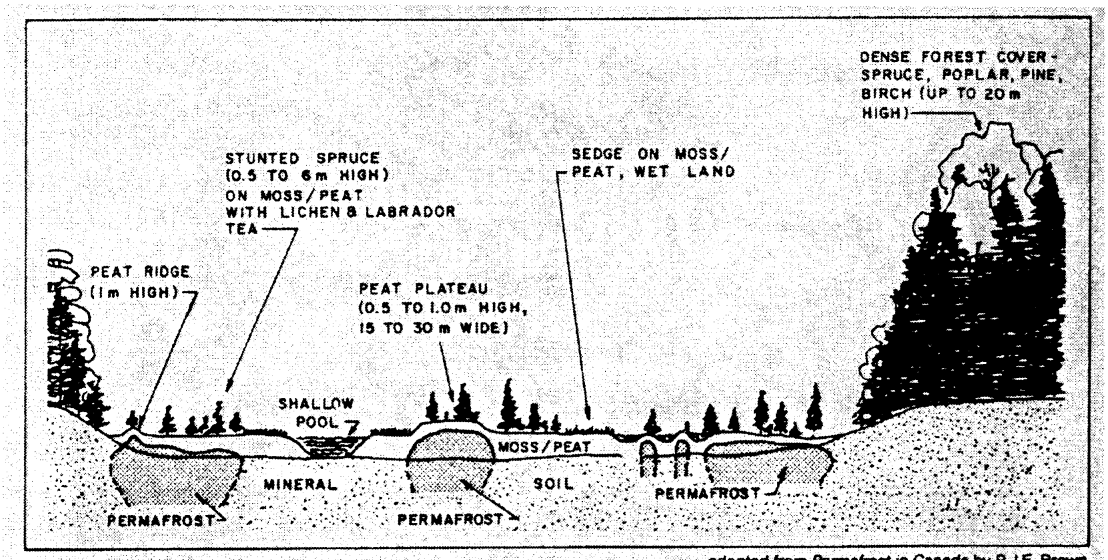
In the level to gently sloping regions east of the escarpment, imperfectly drained or poorly drained Gleysols with thin to shallow peat are thought to be common. There are also significant amounts of upland soil types scattered across the central and eastern regions. Peatlands are not thought to dominate the central and eastern regions but appear to be secondary to areas with soils containing thin or shallow organic layers. Subtle undulations or small changes in elevation have a significant affect on soil moisture conditions.

2.4 Permafrost

The occurrence of permafrost in the region is characterized as “discontinuous sporadic” which indicates that the permafrost underlies approximately 10% to 50% of the area (Wolfe 1998). The distribution and thickness of permafrost is

affected by factors such as climate, topography, vegetative cover, winter snow accumulation, hydrological conditions, subsurface geology and ground disturbance. Once thawing has occurred, sensitivity of any site to disturbance may vary depending on ice content of soil, soil type, drainage and vegetative cover. Permafrost in the project area is expected to be confined to thick, poorly drained, organic bogs and "speckled bog", generally indicative of degrading permafrost. Depressional topography, high moisture content, dense vegetation cover and thickness of organic matter have a negative effect on soil temperature. Snow cover can also have an insulating effect (Tarnocai 1984). The role of snow in maintaining the high ground temperature is very important and ground cover control possibly provides a means of reducing ground temperatures (Judge 1973).

Figure 1 ***Diagram of Typical Discontinuous Permafrost Area*** [9]



• **permafrost distribution in peatlands in the southern fringe of the discontinuous zone**

Areas of permafrost are thought to be limited in the SER; however, all contractors will be advised to be aware of the potential for permafrost. All contractors will be provided with a copy of the environmental guidelines, Northern Seismic operations prepared by Hardy BBT Limited for Indian and Northern Affairs Canada. Seismic operations will be conducted on frozen ground conditions only. Existing seismic trails and roads will be utilized as much as possible and practical. Line widths will be kept to a minimum (approximately 6 meters) and equipment operators will be instructed not to disturb the duff layer. All contractors involved on the seismic program will be reminded of permafrost at daily and weekly safety meetings.

2.5 Vegetation

Trees species found in the SER include: black spruce (*Picea mariana*), white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*), lodgepole pine (*Pinus contorta*), white birch (*Betula paperifera*) and tamarack (*Larix laricina*).

The escarpment on the western edge of the SER is composed mostly of aspen and mixed aspen/white spruce on the hillsides and primarily lodgepole pine on the ridge tops and upper ridge slopes. White spruce often occurs in the gully bottoms, influenced by increased soil moisture.

East of the escarpment, five general vegetation types were identified, influenced by topography and drainage patterns:

- black and white spruce transitional wetlands;
- aspen and aspen/white spruce mixed wood uplands,
- bogs;
- fens, and
- swamps

Either black spruce or mixed black and white spruce vegetation types on shallow organic layers cover the majority of the SER. Ground-truthing indicated the presence of these species co-occurring on sites with subhygric to hygric moisture conditions. Dominant understorey species included Labrador tea (Ledum *groenlandicum*), prickly rose (*Rosa acicularis*), bog cranberry (*Vaccinium vitis-idaea*), woodland horsetail (*Equisetum sylvaticum*), northern bastard toadflax (*Geocaulon lividum*) bunchberry (*Cornus canadensis*), and feather mosses (*Hylocomium splendens Pleuozium schreberi* and *Ptilium crista-castrensis*).

There are relatively large tracks as well as small patches of aspen and mixed aspen/white spruce stands in the central and eastern regions of the SER. These vegetation types occur in better-drained areas where the topography is elevated above adjacent wetter forest types. Understorey species common to aspen or mixed aspen white spruce vegetation types in the region include low-bush cranberry (*Viburnum edule*), prickly rose (*Rosa acicularis*), green alder (*Alnus crispa*), twinflower (*Linneae borealis*), tall lungwort (*Mertensia paniculata*), fireweed (*Epilobium angustifolium*), bunchberry (*Cornus canadensis*), and feather mosses (*Hylocomnium splendens, Pleuozium shreberi* and *Ptilium crista-castrensis*).

Bogs occur within the SER and grades to the black and white spruce vegetation type where soils are slightly better drained. Bogs are peatlands that derive all of their moisture from precipitation and therefore contain only species that can tolerate a nutrient-poor environment. Understorey species common to bogs in this

region include Labrador tea (*Ledum groenlandicum*), dwarf bog rosemary (*Andromeda polifolia*), bog birch (*Betula glandulosa*), cloudberry (*Rubus chamaemorus*), rusty peat moss (*Sphagnum fuscum*) and reindeer lichens (*Cladina mitis, Cladina stellaris* and *Cladina rangiferina*).

There are small patches of black spruce and tamarack dominated fens in the SER. Fens are peatlands in which the ground water is close to the ground surface and surface flow is maintained throughout the growing season. Common understorey species of fens include willow (*Salix* species), dwarf birch (*Betula pumila*), marsh cinquefoil (*Potentilla palustris*), sedge (*Carex* species) and peat moss (*Sphagnum* species).

Patches of swamps occur within the eastern portion of the SER. Swamps occur where there is a strongly fluctuating water table, allowing for saturated and aerated soil conditions to occur over the year. Ground-truthing indicated that paper birch (*Betula papyrifera*) was a dominant species in the tree canopy while the understorey included species such as river alder (Alnus tenuifolia), Labrador tea (*Ledum groenlandicum*), prickly rose (*Rosa acicularis*), woodland horsetail (*Equisetum sylvaticum*) and marsh reed grass (Calamagrostis canadensis). Mosses were largely lacking.

2.6 Wildlife

General wildlife observations and habitat assessments were conducted within the project area on July 16, 2005, and again on August 19**,** 2005**,** while scouting the seismic program.

2.6.1 Mammals

Characteristic mammal species include moose, woodland caribou, wolf, black bear, red fox, marten, beaver, snowshoe hare, lynx, red squirrel and a number of voles, mice and shrews. Cougar have been reported near Tathlina Lake (Gerry Hordel, pers. Comm. 2000). The Cameron River Valley is reportedly the most productive area in the Cameron Hills, with bio-diversity being low elsewhere, with no sensitive areas identified (Tom Chowns, pers.comm.2000).

Project lands are not located within regulated Critical Wildlife Areas as provided in the Consolidation of Critical Wildlife Areas Regulations R.R.N.W.T. 1990, C.w-3 under the Wildlife Act. Currently, there are no protected lands (i.e., Protected areas Strategy) in the area at this time (Bas Oosenbrug, pers. Comm. 2000).

During the July field surveys wildlife presence was noted in the form of sightings or signs including scats, pellet groups, evidence of browse and tracks. Wood frogs, white-tailed deer and caribou were observed. On August 19, moose tracks, two beaver dams and a wood frog were observed.

2.6.2 Birds

Common bird species within the Taiga Plains Ecozone include the common redpoll, gray jay, common raven, red-throated loon, northern shrike, sharp tailed grouse, and fox sparrow.

The MacKenzie Valley forms one of North America's most traveled Migratory corridors for waterfowl (ducks, geese, and swans) breeding along the arctic coast. The Canadian Wildlife Service's (CWS) publication Key Migratory Bird Terrestrial Habitat Sites in the NWT does not highlight any areas in the regional project area that they consider to be key migratory habitat sites (Alexander et al. 1991). The closest "key habitat site" is located at Beaver Lake which is located more than 40 km northeast of the project area (Alexander et al. 1991).

Characteristic fish-eating raptors to the project area include the bald eagle and osprey. Bald eagles nest in the general region, and are associated with forest lowland areas near lakes or major river systems. Bistcho Lake, located in the Alberta portion of the Cameron Hills, approximately 70 km southwest of the current project, represents one of the largest concentrations of nesting bald eagles. These raptors nest on the tops of tall trees, poles, or cliff pinnacles near rivers and lakes. Ospreys appear to be uncommon in the NWT, but have been observed along the southern portions of the MacKenzie River (Ecological Stratification Working Group 1995; Fleck 1981). No raptor nests were observed with in the project area when personnel were in the area in July and, August.

Few bird species over winter in the project area. Willow ptarmigan can be found in burned areas and lake and river margins with thick willow growth. Sharp-tailed grouse occur in open areas such as meadows, bogs, muskeg, and recent burns, as well as in open birch forests. Spruce grouse winter in spruce and mixed wood forests and older burns. Ravens, redpolls and gray jays can be found throughout the area in all seasons. Less common wintering birds include: boreal chickadees, several species of boreal woodpeckers, northern hawk-owls, and great-horned, great gray and boreal owls (Godfrey 1986).

2.7 Fish and Water Quality

Regional information indicates that the main fish species found in this region includes: Arctic grayling, lake whitefish, lake trout, walleye and northern pike.

No commercial or subsistence fishing activity is present in the area. The area supports primarily sport fish species and has moderate to very low fishing potential. Limitations are water depth, shortage of pool habitat (frequency and depth), remoteness since the area is generally only accessible via winter roads (ARC 1998). The closest commercial fishing activities are located at Tathalina

Lake in the NWT which is approximately 65 km north of the project area and Bistcho Lake in Alberta, located approximately 70 km south of the project area.

All the proposed watercourses are narrow, ephemeral drainages with most having poor channel definition and no fisheries potential. All water course crossings for vehicles will be done by snow fill or ice bridge,

In general, fisheries resources in the area are limited. Viable habitats to support fish communities with top predator species are not available. Specifically, habitat for spawning, rearing and overwintering of these species were not encountered. Further, habitat capable of supporting forage fish communities is unavailable.

3.0 Land Use

The proposed project area is located within the Deh Cho Region of the District MacKenzie.

Access into the Significant Discovery Licence area is primarily via winter roads (Hardy BBT Limited 1991), helicopter or fixed-wing aircraft. Existing seismic lines may also be used to gain access to areas throughout the region. Current land uses in the general region include oil and gas exploration, trapping and hunting, though Paramount is not aware of any trapping done in the proposed project area.

The Project area is remote with the nearest settlements being Enterprise, which is 75 km (straight line distance) from the Paramount SDL. The communities of Kakisa, Hay River and Fort Providence are 80 km, 100 km and 120 km from the Paramount SDL, respectively. Based on the CLI maps for the region, the capability for recreation is generally low although, activities such as canoeing, camping, viewing, photography, snow shoeing, snow-mobiling and angling can all be accommodated in this area (ARC 2000).

There are two forest companies operating within the area that are mostly active on the eastern slopes and lowlands of the Cameron Hills. The two operators are Lichtner Forest Industries Ltd. and Patterson Lumber and Forest Products. In addition, the Forest Management Division issues Timber Permits to local interested persons and First Nations groups.

The Forest Management Division in Fort Smith has a “Values at Risk” database that was developed for the region that relates to mapped valued areas to facilitate the identification and protection of forest resources in the event of forest fires. Bases on the information received from RWED (Rick Lanoville, pers. Comm. 2000). The nearest “Values at Risk” to the Project are the Cameron Hills Fire Tower located 28 km northeast of Paramount’s SDL and the RWED Swat Lake Initial Fire Attack Camp located 9 km west of the SDL area. No conflicts between the proposed Project and these facilities are expected.

3.1 Heritage Resources

No heritage resources were identified and no further archaeological work is planned for the area. However, consistent with the intent of the Heritage Acts of both Alberta and the NWT, should unexpected heritage resources be encountered during the project, all work in the immediate area will cease until an archaeologist is able to examine the find and develop an appropriate site management plan. No residual impacts to heritage resources are anticipated.

4.0 Description of Operations

The purpose of the proposed geophysical 2-D seismic program is to delineate potential oil and or natural gas reserves. This project is related to past 2D seismic programs and the M-31 well in the same area. This proposed program may or may not lead to future seismic, drilling or tie in plans.

Paramount proposes to conduct a 2-D geophysical program that is approximately 45 km in size, comprised of 7 lines, each approximately 6.5 km in length. Approximately 750 source point locations will be surveyed for the vibrators or drills. If the program is acquired with dynamite, a 3-hole pattern at the station is currently suggested as optimum based on extremely old data in the area with a 0.5kg charge in each hole at a depth of approximately 7 meters. These dynamite parameters are subject to change as further review of the existing data and forward modeling is ongoing. Operations will include preparation of existing winter access in Alberta to provide for vehicular traffic to the program area. Once inside the program area, existing lines will be opened up to vehicular traffic as well as the newly constructed lines. These access lines will be kept to a minimum as per the attached map. We will be utilizing either dynamite or vibroseis for source energy. It is necessary for line widths to be in the order of 6 meters in order for vibrators and wheeled or tracked drills to operate in a safe and efficient manner.

As the operator of the seismic program, Paramount will be accountable for ensuring that all mitigative measures as outlined in the environmental assessment as well in any correspondence with regulators are implemented. Paramount will work closely with contractors to ensure that all regulatory conditions are followed. As well, all contractors will be required to follow the Northern Seismic Operations prepared by Hardy BBT Limited for Indian Northern Affairs Canada. As stated in Paramount's environmental assessment, seismic operations will be conducted on frozen ground conditions only. Existing seismic trails and roads will be utilized as much as possible and practical. Line widths will be kept to a minimum and equipment operators will be instructed not to disturb the duff layer. All contractors involved on the seismic program will be reminded of permafrost at daily and weekly safety meetings.

Upon choosing a contractor, Paramount will review the regulatory documentation with the contractor. At that time individual field personnel will be identified and charged with ensuring that specific mitigative measures are followed.

These field personnel will include an Advance Man who will work in coordination with the Cat Push on the front-end portion of the program and act as Paramount's field representative. The Advance Man will be aware of all measures outlined in the Environmental Documents and correspondence. His responsibilities will include overseeing all activities prior to data acquisition such as line cutting, camp and fuel storage preparation. The Advance Man will work closely with the Cat Operators, Surveyors and Slashers ensuring that all related mitigative measures are followed.

The Drill Push/Powder Custodian works in coordination with the Advanceman and Surveyors to insure access to the source locations and the logistics of drilling the shot points. He is also in charge of keeping the dynamite magazine log and distributing the dynamite to the drillers. The Drill Push communicates daily reports to the Project Manager.

During data acquisition a Party Manager will be present in the field and act as Paramount's field representative. The Party Manager will be aware of all measures outlined in the Environmental documents and correspondence. The Party Manager will oversee all field operations during data acquisition.

Daily morning meetings with field personnel will be held throughout the program discussing specific requirements, conditions, field operations and safety issues. There will be a comprehensive Pre-Commencement meeting and other meetings at various stages during the program to inform all field personnel of specific conditions and mitigative measures. The Party Manager or Advance Man will issue Daily Reports of all field activities.

The selected contractor will have a Health / Safety / Environmental Manager who will instruct Contractor employees on implementation of conditions and mitigative measures.

A Project Manager will ensure coordination between field personnel and Paramount. The Project Manager, in coordination with Paramount, will oversee the overall operation and act as a liaison with Paramount. The Project Manager will visit the field to ensure all procedures are in place and being followed.

Paramount will adhere to The Canada Oil and Gas Geophysical Operations Regulations-27.1 (1), regarding an archaeological site or a burial ground, and The Mackenzie Valley Land Use Regulations 12, regarding a suspected historical or archaeological site or burial ground. Paramount will immediately notify the NEB conservation officer and the Mackenzie Valley Land and Water Board or Indian

and Northern Affairs Resource Management Officer in addition to suspending operations in the vicinity of such discoveries.

Low ground pressure vehicles, 4x4 trucks, tracked units, quads, and snowmobiles will be used to move personnel and equipment as well as to acquire data. Heavier equipment (vibrators) will be buggy-mounted on low ground pressure tires.

The criteria to be used to determine when there is potential for rutting or gouging is by monitoring, through observation, the frozen ground condition. In the event that conditions change (if the frozen ground begins to thaw) such that there is potential for rutting or gouging and damage to the vegetation mat, operations with the equipment will be suspended. Paramount will not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Paramount is proposing an early in – early out scenario.

4.1 Access

Access to the program from Indian Cabins, Alberta will be by Highway 35 north and various oil field roads and existing seismic trails as shown on the accompanying map.

4.2 Line Clearing

Line widths will be minimized and avoidance cutting techniques will be utilized where possible in order to reduce the impact of the disturbance on the standing cover. Line cutting will focus on establishing a route through the area in a direct manner without cutting a straight line. This method of line clearing provides a reduced line of sight down the line for wildlife management purposes and can also be utilized to avoid large timber. The surface duff or moss layer will not be bladed off to protect potential permafrost areas.

All debris will be pushed into windrows on one side of the line with breaks every 400 meters of at least 10 meters in length to minimize the potential wicking effect during forest fires and to promote wildlife movement. The proposed 6-meter line width is the minimum workspace required for windrow placement and safe passage for men and equipment. All debris will be slashed into 2-meter lengths or less and bucked to lie flat.

Creek crossings as identified on the accompanying map will be by clean snow-fill only. All creek crossings will be removed when the program is completed. All existing lines that can be utilized have been incorporated into this program as per the attached maps.

The existing lines have been confirmed by both aerial photography and scouting. However, significant regrowth has occurred given the age of the existing lines.

4.3 Surveying/Chaining

Will be by traditional methods utilizing a theodolite and rod. The chainers to identify the source and receiver positions will place pin flags at 60 and 20 meter intervals. Surveyors' transportation will be by 4x4 truck, snowmobiles and or quads.

4.4 Recording

Will be conducted with an I/O 4 AC (24 bit) recorder capable of recording 300 channels, complete with all related cables and geophones.

4.5 Waste Disposal

As no camp or fuel storage is involved, waste disposal will consist of the recording receiver pick-up crew trashing the lines to insure all pin flags, survey lath, and any general garbage is picked up and removed to an approved facility for disposal in Indian Cabins, Alberta.

4.6 Equipment

Line Cutting/ Clearing

2 D5/6 Cats
1 Cat Support/Fuel Unit 4x4 Truck
1 Personnel Carrier 4x4 Truck
1 Hand Slashers Personnel Carrier 4x4 Truck
1 Advanceman/ Cat Push 4x4 Truck (plus skidoo and or quad)

Survey

2 Surveyor/Chainer 4x4 Trucks (plus skidoo and quads)

Drilling

2 Tandem Top Drive or Conventional Drilling Rigs either mounted on trucks or tracks
1 Drill/Fuel Support Vehicle
1 Drill Push 4x4 Truck

Recording Crew

1 I/O System 4, 4x4 Recording Truck

6	1 Ton 4x4 Line Trucks (geophones and cables)
1	Personnel Carrier
1	4x4 Party Managers Vehicle
1	HSE 4x4 Vehicle
1	Staging and Charging Trailer
3	M-18 Buggy Vibrators
1	4x4 Vibrator Support/Fuel Unit

All vehicles are equipped with VHF 2-way radios for field communications as well as brush guards, winches, and all related safety equipment.

4.7 Fuels and Fuel Transfer

Fuel will be acquired in Indian Cabins, Alberta and transported to the program location by slip tanks in the various support/fuel vehicles on the crew. It is anticipated that most vehicles (except the Cats and Vibrators) will be returning to Indian Cabins at night and will be refueling from the local commercial vendor, minimizing the number of transfers by either hand pump or 12 volt DC pumps from the slip tanks to the various units to be left in the field.

4.8 Fuel Containment

The following general guidelines will be followed for containment of most hazardous materials.

- Identify the product, stop source and physically contain spill as soon as practical.
- Unless it is necessary to control a fire or prevent an explosion, water or fire extinguishing chemicals will not be used on non-petroleum product spills as many chemicals react violently with water and chemical extinguishing agents may release toxic fumes. In addition, chemicals may be soluble in water and dispersal may make containment and clean-up more difficult.
- Minimize traffic on contaminated soils.
- If on land, natural depressions or berms constructed with materials and equipment in proximity to the site will be used to physically contain the spill. Deployment of booms will be necessary on water. Clean up will not be attempted without competent advice from Paramount's Environmental Staff or Spill Coordinator.

4.9 Restoration

All debris will be slashed into 2-meter lengths or less and bucked to lie flat. Vegetation will be re-established by seeding where necessary. All flagging, survey markers and garbage will be removed and disposed of at an approved

landfill site. All creek crossings will be removed upon program completion or spring break-up.

5.0 Safety and Emergency Response Plan

A qualified medic and ambulance will be on site through all phases of the program.

A copy of Paramounts' Safety Manual and Emergency Response Plan are on file with the MVLWB in Yellowknife, and copies of these documents will be given to the primary contractor.

6.0 Timing

It is anticipated that the entire project can be cut, surveyed and recorded in 40 days. It would be Paramount's intent to follow an early-in, early-out approach in the winter season (sufficient frost and snow cover) in the year it is acquired.

7.0 Environmental Mitigation Measures

Proper planning of line locations and 2-D design has been taken into account to mitigate potential environmental impacts. This program will be conducted during frozen ground conditions thereby reducing the potential for impact to the terrain, flora and fauna. The potential for rutting and gouging will also be minimized. Low ground pressured wheeled vehicles, tracked units, quads and snowmobiles will be utilized to move men and equipment as well as to acquire data. Seismic lines will be used for access therefore, reducing the potential for soil compaction. The snow cover will be left on the organic mat to protect the permafrost. The heavier equipment (vibrators if used) will be buggy mounted on low ground pressure tires.

Avoidance line cutting will reduce the line of site down the lines for wildlife protection and the minimize timber reduction. The minimum line width will be cleared (6 meters) on source/receiver lines to allow for a debris pile and passing of the vibrators. This will minimize wildlife habitat loss and decrease the potential for erosion.

We will equip each vibrator with drip pans to avoid hydraulic leakage. All equipment will be fully serviced and maintained to reduce the potential for hydraulic hoses to blow. Should a unit blow a hydraulic hose the potential impact would be minimal due to the small amount of fluid that could be lost. Any fluid would be removed from the land surface and placed in containment barrels and transported to the disposal site located at camp.

Winter scheduling will avoid direct disturbance to summer birds. From the initial scout, there is a low chance of encountering a raptor nest site within the prospect area.

Timber salvage will not be required on this program.

The program will proceed as early and as quickly as possible. This will minimize our time in the area and our effect on any local wildlife. Overall, we feel that the environmental impact associated with this program will be minimal.

8.0 Cumulative Effects

As previously indicated, all possible measures have been taken to reduce the impact of this project by careful pre-planning, on site investigations, and public and government consultation. Care has been taken when considering site and activity scheduling, location and design, and the equipment and supplies required.

If the program is successful, the potential for the construction of access and exploratory wells is high. While future development could have a cumulative effect to the project area, proper planning and execution will greatly minimize any disturbance and reduce the amount of land base affected. Any future construction and drilling operations would comply with conditions, acts and regulations in place at the time of the activity.

Winter operations will take advantage of favorable ground conditions.

Overall, it is our feeling that the cumulative impact associated with this program will be minimal due to its short-term, temporary nature.

9.0 Public Consultation Program

9.1 Overview

Paramount has been active in the Cameron Hills region for several years, thus the communities are very familiar with the types of oil and gas activities contemplated in this application, and the opportunities for business and employment. Paramount did scout the project with the assistance of a first nation trapper and has distributed the August 2005 Cameron Hills Project Update and 2D seismic program information package on August 10, 2005 (see attached). To date, Paramount has not received any comments or concerns relative to this project and has responded to general program questions asked by GNWT Department of Environment and Natural Resources, Forest Management Division.

9.2 Employment

Northerners are eager to see employment benefits of geoscience field work such as that proposed. These employment opportunities will likely be restricted to short term line clearing and clean up work given the small size of the project.

In all cases, it is the desire of Paramount to use Northern workers and contractors on a best efforts basis. That is, where Northerners are ready and available to work at competitive rates and in compliance with accepted Oil and Gas Industry standards, first choice will be given to these workers. Paramount reserves the right to augment Northern workers and contractors with other manpower where appropriate, on an as-needed basis.

August 2005

Cameron Hills Project Update

What's Been Happening At Cameron Hills

Fifteen wells are tied-in to the gathering system, producing oil and gas through pipeline into Paramount's plant in Bistcho Alberta.

Over the last 4 years

- $69 million dollars has been invested in Cameron Hills by Paramount and its partner;
- $17 million has been paid to northern contractors for services & supplies used at Cameron;
- 9500 northern person days of short-term employment has been provided by the service industry; and
- 33% of full-time employment at Cameron is filled by northerners.

Environmental Update

As a part of Paramount's adaptive management process and commitment to operate the Cameron Hills Project in an environmentally responsible manner, it has undertaken the following:

- installed a station to collect meteorological data at H-03 (wind speed, wind direction, temperature) on a continuous basis;
- instantaneous ambient air monitoring is being conducted for SO_2, NOx and H_2S;
- noise monitoring studies have been conducted – before and after installation of the battery;
- heritage monitoring is provided by a Kakisa elder every winter when gathering lines are constructed;
- environmental monitoring is provided by a Cameron Hills first nation trapper every winter during drilling operations;
- new sites & routes are chosen with the assistance of a Cameron Hills first nation trapper;
- re-vegetation, permafrost and wildlife monitoring studies are conducted annually since 2002;
- first nations personnel at a gate on the winter road near Indian Cabins, Alberta monitor access into Cameron Hills;
- wildlife monitoring sighting cards are completed by all personnel on a continuous basis;
- erosion monitoring is conducted on a regular basis;
- fish monitoring is conducted on an as-needed basis;
- construction techniques are modified as part of the adaptive management process;
- air dispersion modeling has been conducted and will again when sufficient local meteorological data has been gathered;
- migratory bird study within the Deh Cho region has been conducted since 2000;
- a survey of regrowth on seismic lines is being conducted this summer.

The Future at Cameron Hills

The regulatory process to drill, tie-in and produce 5 wells has re-commenced now that the latest Environmental Assessment has been completed. Paramount will be applying for land use permits and water licences to drill, tie-in and produce the 48 locations over the next several years, as was contemplated in the Environmental Assessment.

Plans for the winter 2005/2006 (dependent on regulatory approvals & equipment availability)

- drill 5 to 10 wells
- complete all successful wells drilled
- re-complete and/or work over approximately 4 existing wells
- construct gathering lines to the successful and economical new wells drilled
- on-going production operations
- acquire 2D seismic over Significant Discovery Licence 8.

SEISMIC: Paramount is not contemplating seismic on the Cameron Hills Project Area, however, we will be submitting applications to the MVLWB and NEB to acquire 2D seismic over SDL 8 which is just west of the Mackenzie Highway at the Alberta border. A local first nation trapper assisted in site reconnaissance. When the Primary Contractor has been selected the following types of jobs may be available**.**

- Seismic acquisition company
- Heavy equipment contractor
- Cat push
- Camp & catering supplier
- Fuel supply depot
- Surveyors
- Line cutting & slashing crews
- Recording crew helpers
- Vibrator operators
- Trucking
- Water Transport

.

For additional information on the seismic project, contact Brian Kallweit, Manager Geophysics (403) 290-3637

DRILLING: The local trapper assisted in site and route selection on 7 locations surveyed this summer. This winter 2005/06, if regulatory approvals are granted and rigs are available, 5 to 10 wells may be drilled and completed utilizing 1 or 2 drilling rigs and 1 or 2 service rigs. The following services may be retained for the drilling/completion/evaluation operation:

- Drilling rig
- Service rig
- Heavy equipment
- Camp & catering supplier
- Safety
- Fuel supply depot
- Storage Tank rental
- Garbage bin rental
- Loader
- Wellsite shacks
- Water trucks
- Satellite rental
- Vacuum trucks
- Drilling tools
- Wellbore cement
- Drilling mud
- Wellbore logging
- Tubulars
- Well testing equipment – surface
- Wireline

For additional information on the drilling/completion project, contact Phil Christie, Drilling Manager (403) 290-3617

GATHERING SYSTEM & PIPELINE: A few existing wells may be tied-in subject to re-completion success. Newly drilled successful and economic wells may also be tied-in. A Heritage monitor will again be retained during trenching operations.

The Primary Contractor is yet to be determined but the following services may be required:

Slashing	Inlet separators, line heaters	Flare stacks
Pipeline contractor	Instrument air	Pipeline shrink sleeves
Radiographer	Pipe	Camp & catering
Instrumentation contractor	Valves	Trucking
Mechanical contractor	Tanks	Environmental Monitoring
Electrical contractor	Water distillers for camp	Surveyors
Clearing contractor	Pumps	Safety Monitoring
Process equipment		

For additional information on the gathering system, please contact Brad Macson, Manager, Engineering & Construction (403) 290-3684

PRODUCTION: A total of 15 wells are tied-in to the Cameron Hills gathering system infrastructure. Currently four to five operators per shift supervise the facilities. Due to the remoteness of the project site and the winter-only access, the personnel and supplies continue to access the area via helicopter from April to December. The winter road is opened from December through to the end of March.

PROJECT VISITORS:

Paramount welcomes visitors to the Cameron Hills Project site. Visitors, must be aware that the project is a controlled industrial facility subject to government safety requirements such as: visitor safety orientation; use of personal protective equipment (safety boots, safety helmet, safety glasses and gas monitor); H_2S Alive training. In all instances, visitors must be accompanied by a designated Paramount representative.

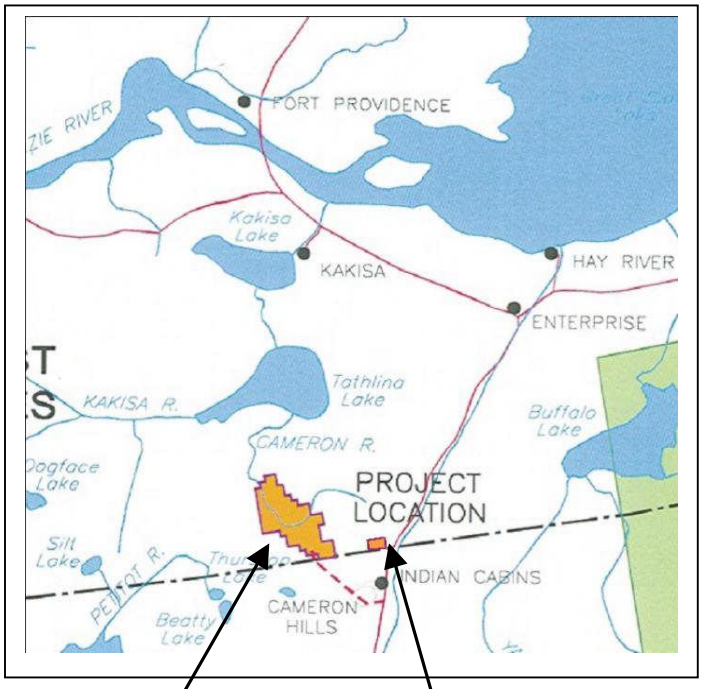
To work for Paramount, a primary contractor must have the following essential items:

- established & audited safety program
- drug & alcohol policy
- excellent performance record
- northern project experience
- financial stability
- job-specific quality assurance programs and work procedures

Many northern companies have participated in the success of the Cameron Hills Project by providing goods and services, employment and training opportunities for northerners. Paramount gratefully acknowledges the service provided by the following northern/northern alliance companies for the 2004/2005 season.

- Alpine Environmental/Nahendeh
- Bassett Petroleum
- Canadian Helicopters
- Carter Industries
- Concept Energy Services
- DDA Northern Safety
- EOS Pipeline
- Firemaster
- Formula Transport
- Greenway Realty
- Golder Associates
- Hay River Disposals
- Hay River Reserve Members
- Homeland Horizons
- Imperial Oil
- Ka'a'gee Tu First Nation Members
- Keith's Water Service
- Kingland Ford
- Les Norn Contracting
- North Cariboo Air
- Northwestel Inc
- Pillar Fabricators
- Pillar Oilfield
- Precision Drilling
- PTI Premium Camp
- Stan Dean & Sons
- Superior Propane
- Total Oilfield Rentals
- Tract Energy Services
- Travers Food Services

Map #1



Cameron Hills Project Area

Significant Discovery Licence 8

Paramount is providing this additional consultation package specific to the proposed 2D seismic acquisition on SDL 8.

Introduction

Paramount Resources Ltd. will be submitting a Land Use Permit Application to acquire approximately 40 kilometers of 2D seismic covering Significant Discovery License 8 and is seeking your input and comment on this proposed program. Map #1 shows the location of the proposed seismic program, which could be acquired as early as this winter 2005/06. The purpose of the seismic program is to map the underground geology to assist in locating oil & gas drilling locations.

Description of Operations

Mapping the subsurface geology is comprised of three major components: an energy source, a sensor called a geophone, and a recording device (computers in a special truck) (figure 1). The energy source will come from either dynamite or vibrator trucks (called vibroseis). When explosives are used, the dynamite charge is buried in the ground and detonated to create a wave trough the underlying rocks. When vibroseis is used, a metal plate mounted on the bottom of the vibrator truck (figure 2) shakes the ground to create a sound wave.

To obtain the best possible data, while minimizing the environmental impact, and utilizing equipment that would be in the vicinity, the proposed seismic program will contemplate both methods - dynamite and vibroseis**.** A typical vibrator truck is shown in figure 2 and a typical shallow hole drill for dynamite is shown in (figure 3).

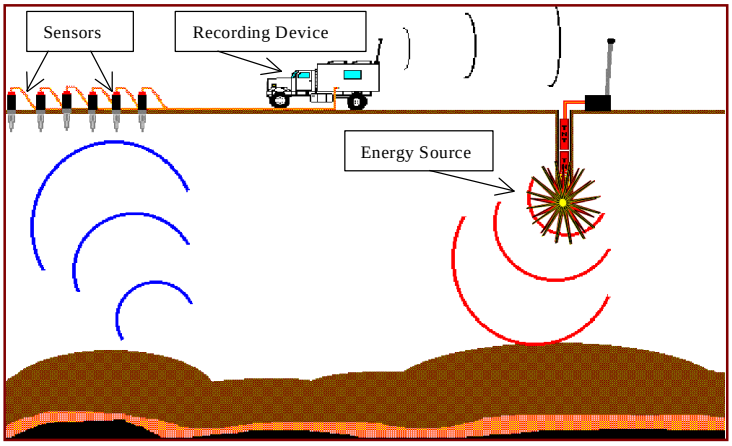


Figure 1– Seismic Data Acquisition: An acoustic wave is produced that travels through the earth. A portion of this energy returns to the surface and is recorded by sensors (geophones) as a seismic record.

Figure 2 – Vibroseis Trucks

Figure 3 – Portable shallow hole drilling rig used in dynamite programs.

Program Design

There are two main types of seismic exploration program designs: 2D and 3D. The proposed program is a 2D project. 2D programs, as the name suggests, give two-dimensional sub surface data. This type of program uses one line as both the source and receiver line, meaning that the energy source and geophones are both placed on the same line, in the same direction.

Access

Access to the project area will be from highway 35 at Indian Cabins, Alberta utilizing existing seismic lines, roads and trails. Cutting new access trails will be avoided wherever possible. If access trails are required within the project area, minimal trails will be cleared in order to move equipment. These trails will be cleared using a low impact method of line clearing (discussed and explained in the next section).

Stream crossings will be avoided wherever possible, however, if a crossing is required, a snow fill or ice bridge will be constructed adhering to regulations under the Mackenzie Valley Land and Water Board, Fisheries and Oceans, and National Energy Board.

Line Clearing

The proposed program will incorporate avoidance cutting techniques, whereby large trees are avoided during the cutting and meandering lines will be cut as to minimize line of sight down the lines and promote wildlife movement. As well, the width of the lines is kept to a minimum, therefore minimizing the amount of timber cut and minimizing the impact. Lines will be cleared with small, low ground pressure (LGP) bulldozers such as D5 or D6 size to a maximum width of 6 meters. All debris will be pushed into windrows on one side of the line that will alternate every 400 meters. Alternating windrows will minimize the potential wicking effect during forest fires. All the debris will be slashed into 2-meter lengths or less and bucked to lie flat.

Surveying and Chaining

Surveying and chaining (figure 4) will follow line clearing as soon as enough line is produced so that the survey crews do not catch the line clearing equipment. The survey crews will determine survey coordinates of the program as well as chain the locations of all source and receiver points. Besides survey instrumentation and chaining equipment, these crews will utilize pickup trucks and ATV vehicles (Quads).

Figure 4 - Surveyor

Recording

The recording crew will follow the surveying and chaining once the majority of the program is prepared. The crews start by laying out geophones on receiver lines. Geophones are connected in series by cables, which connect directly or remotely to a recording truck. The crews laying the geophones will use trucks and quads.
The remainder of the crew will drive the vibrator trucks, or drills, and execute the source energy at the source points.

Campsite

There will not be a camp in the Northwest Territories as the Operations Base for this project will be established at Indian Cabins in Alberta.

Waste Disposal

All garbage will be taken off site and disposed of at an approved facility. This includes all flagging material, and any personal garbage produced by the crew.

Explosives

If dynamite is used, it will be handled and stored in accordance with National Energy Board regulations. Proper storage magazines will be used to store the explosives, and a stringent inventory will be kept.

Fuels and Fuel Transfer

Fuel trucks will be used to refuel project equipment adhering to National Energy Board, Mackenzie Valley Land and Water Board, Government of the Northwest Territories and Indian and Northern Affairs Canada regulations for handling fuel. The main fuel storage will be at the Operations Base in Alberta.

Restoration and Reclamation

Program cleanup will be progressive, starting with a final inspection being done at the end of the program. Any and all garbage will be picked up, and any material brought into the program area will be removed.

Socio-Economic

The proposed program area has been flown with participation from a local first nation trapper**.** Potential employment & contracting opportunities are outlined in the Paramount Cameron Hills August 2005 Project Update.

Feedback

Please feel free to contact the following should you have any questions, concerns or comments on this project. Paramount anticipates filing regulatory applications for this project in late August 2005.

Brian Kallweit, Manager Geophysics
Phone: (403) 290-3637
Email: brian.kallweit@paramountres.com

Shirley Maaskant, Manager Regulatory & Community Affairs
Phone: (403) 290-3618
Email: shirley.maaskant@paramountres.com

Distribution List

Name	Company/Agency
Pierre Alvarez	CAPP
Ian Scott	CAPP
Chief Herb Norwegian	Deh Cho First Nation
Chief Berna Landry	Deh Gah Got'ie Dene First Nation
Bruce Hanna	Department of Fisheries & Oceans
Winnie Cadieux	Enterprise Settlement Council
Mike Fournier	Environment Canada
Steve Harbicht	Environment Canada
Albert Lafferty	Fort Providence Metis Council
Deb Archibald	Nursing Consultant, GWNT
Bob Bailey	Team Leader, GWNT
Brendan Bell	Minister, Industry, Tourism & Investment, GWNT
Karen Cooper	GWNT
Charles Dent	Minister, ECE, GWNT
Premier Joe Handley	GWNT
Charles Jacobson	GWNT
Paul Kraft	GWNT
Tom Lakusta	GWNT
Michael Mageean	GWNT
Rachel Marin	GWNT
Michael Miltenberger	GWNT
Dave Nightingale	GWNT
Juanita Robinson	GWNT
Albert West	GWNT
Peter Vician	GWNT
Paul Vieira	CEO, Hay River HSSA, GWNT

Name	Company/Agency
Alan Hollingworth	Gowling, Lafleur & Henderson
Diana Ehman	Town Hall of Hay River
Karen Boudreau	President, Hay River Chamber of Commerce
Paul Delorey	MLA, Hay River North
Jane Groenewegen	MLA, Hay River South
Andrew Forbes	INAC
Mimi Fortier	INAC
Andrew Graw	INAC
Wayne Greenall	INAC
Kate Hearn	INAC
Bob Overvold	INAC
Michael Vandell	INAC
Dan O'Rourke	Consultant
Chief Lloyd Chicot	Ka'a'gee Tu First Nation
Chief Roy Fabian	Kátlodééche First Nation
Michael McLeod	Minister, MACA & MLA, Deh Cho
Liza McPherson	Superintendent, MACA
Bob Wooley	Mackenzie Valley Land & Water Board
Louise Mandell	Mandell Pinder Barristers & Solicitors
Bharat Dixit	NEB
Michel Mantha	NEB
John Ramsey	Natural Resources Canada
Charles Arnold	Prince of Wales Northern Heritage Centre
Chief Dennis Deneron	Sambaa K'e Dene
Chief Karen Felker	West Point First Nation
Derek Neary	Editor, Deh Cho Drum
Joseph Lanzon	JCL Consulting

FUEL & OIL SPILL
CONTINGENCY PLAN

for the
Paramount Resources Ltd.
Cameron Hills A05P-CAM 2D
SEISMIC PROGRAM

FUEL AND OIL SPILL CONTINGENCY PLAN
NORTHWEST TERRITORIES

INTRODUCTION

Purpose of Plan

The purpose of this plan is to provide a safe response strategy should a fuel or oil spill occur. This strategy administers the protection of human life, to minimize the environmental effects, and to follow proper procedures of a cleanup operation.

Fuel Delivery and Transfer Description

Fuel will be acquired in Indian Cabins, Alberta and transported to the program location by slip tanks in the various support/fuel vehicles on the crew. It is anticipated that most vehicles (except the Cats and Vibrators) will be returning to Indian Cabins at night and will be refueling from the local commercial vendor, minimizing the number of transfers by either hand pump or 12 volt DC pumps from the slip tanks to the various units to be left in the field.

CONTACT LISTS

Government

GNWT(RWED)	24 Hour Spill Line	(867) 920-8130
DIAND	Hay River Andrew Forbes *Land Use Inspector*	(867) 874-6994
GNWT	Yellowknife Emery Paquin *Environment Protection Services*	(867) 873-7654
ESP FISHERIES & CCG	Hay River Acting Base Manager Tom Maher	(867) 874-5500
N.E.B.	Rick Turner Field Operations and Safety John Korec (Spills) Environmental Assessment Officer	(403) 299-3868 (office) (403) 292-5876 (fax) (403) 292-6614 (office) (403) 818-2403 (cell) (403) 275-6256 (home)

INITIAL RESPONSE ACTIONS

Upon discovery of a spill, the first person on the scene:

- Protects the safety and lives of anyone in the spill area.
- Isolates or removes any potential ignition sources if safe and possible.
- Locates likely source or cause of spill and stops flow or release (do not take unnecessary risks).
- Assess the likely size, extent and conditions of spill.
- Notifies immediate supervisor with information.*
- Controls access to area until assistance arrives.
- Attempts to contain spread of spill, using available equipment and materials.
- Records all relevant information for reporting purposes.

* Upon notification that a spill has occurred, the supervisor will notify DIAND @ 24 hour Spill Number (867) 920-8130, and N.E.B. John Korec (403) 292-5876.

Winter Spills on Land

Detection

Areas are usually snow covered and limits are highly visible.

Probing will locate spill area under a depth of snow.

Containment

Build frozen snow dikes to contain spill.

Use plastic sheeting to line face of dike.

Recovery

Pump liquid product into empty drums or tanks for future acceptable disposal.

Transportation

TDG waste manifest if necessary.

Contaminated Snow Cleanup

Use mechanical and hand equipment to scrape up product-in-snow mixture and load into dump trucks or other suitable container.

Haul product-in-snow mixture to a suitable site with pit or container facilities. Eg. Indian Cabins.

Caution

If terrain conditions indicate long term terrain damage may result by bulldozer scraping, then hand cleanup may be necessary with a final cleanup done as the snow melts and the terrain surface starts to thaw.

Burning

If a spill is moving toward a higher environmental or safety concern (i.e. creek, open water or residences) an immediate burning may be desirable. This decision will be made by the Field Supervisor or Party Manager. Every effort will be made to protect the spill area from other combustible materials before burning. All residue after the burn is to be picked up and disposed of in accordance to applicable laws.

Winter Spills on Ice

Caution

Be sure to check ice thickness for load bearing capacity.

Detection

Determine perimeter of spill area.

Burning

If the spill is moving towards cracks in the ice or open water then an immediate burning may be desirable. This decision will be made by the Field Supervisor or Party Manager. All residue after the burn is to be picked up and disposed of in accordance to applicable laws.

Containment

Construct frozen snow dikes or ice trenches around perimeter of spill for containment.

Prevent escape of product into cracks
- dike off
- seal with snow\water mixture.

Transportation

TDG waste manifest if necessary.

Recovery

Recover pumpable product and store in steel drums or tanks for future disposal.

Cleanup

Pick up contaminated snow using mechanical equipment or hand labour.

Store in steel drums for future disposal or transport by means of dump truck to a disposal site.

Use sorbent to clean up remaining contained product.

Recover sorbents used and place into steel drums for future disposal.

Containment

Booms.

Recovery-Skimmer

Use an oil spill skimmer to recover spilled fuel, if spill is too large to recover with sorbents.

Store recovered small volumes of fuel and water in steel drums.

Store larger volumes or recovered fuel and water in empty fuel tank on barge for transfer to a remote recycling or acceptable disposal site. If necessary, a TDG waste manifest may be required.

Disposal

All methods will be in accordance to Land Use Permit conditions.

1. In-Situ Burning at Spill Site

   In the case of a major spill, some of the fuel released at the site may be disposed of through in-situ burning. Precautions must be taken to ensure fire cannot burn back to fuel storage tanks.

2. Open Pit Burning

   Incineration of oiled debris in open pits or open top barrels is another alternative at remote sites.

   Surface burning, using berms and built-up areas where possible, is preferred to disturbing the permafrost substructure.

3. Burial

   Another method of disposal of large quantities of oil and oil contaminated debris could be by burial.

   Permission must be granted through a land use permit obtained from the MVLWB.

   Contact: Bob Wooley – 867-669-0506 Yellowknife
   Executive Director, MacKenzie Valley Land and Water Board

   If there is a possibility of oil spill debris disposal in the Cameron Hills area, or any other community, permission may also be required from the Government of Northwest Territories.

SPILL REPORTS

1) Any spill which is a violation, or
2) Any spill reported to a government agency, or
3) Any oil spill (not otherwise reportable) which is greater than 0.15 m3 (1 barrel) in size, or
4) Any spill which has received or may receive public news media attention, **MUST BE REPORTED**.
5) Any hazardous occurance (i.e. spills that can or do adversely affect the environment) MUST BE REPORTED to the NEB, regardless of size.

Report Spills to: John Korec, NEB (403)292-5876 or NWT 24-hour Spill Line (867) 920-8130. The NEB is lead agency for all spills on this program. After hours notifications is only required in event of serious or uncontained spill.

Diaries of the on-site personnel are the primary sources of information. The accounting group provides the summary analysis and cost breakdown of the cleanup operation. The report should include the following:

- Analysis of events leading up to the spill, cause of the spill, type of oil or fuel spilled, duration of spill, chronological description of all areas contaminated by the spill and extent of contamination.

- Cleanup procedures utilized in each area, including duration of activities, number of personnel involved in the cleanup, days and number of equipment employed.

- Description of weather conditions, and river currents and how they affected the movement of the spill and the cleanup conditions.

- Analysis of the success of cleanup in each area contaminated, and evaluation of equipment used.

- Description of environmental protection measures and their success.

- Initial statement of environmental impacts.

- Statement of property damage.

- Summary of total volume of the spill and volume recovered, and estimates of the fate of the oil lost including approximate amount lost to each natural process.

- Statement of damage to company property as well as damage to others' property, including details of cause, type and content of damage.

- Salvage operations and their success (if applicable).

- A list of all government personnel and other authorities contacted including date, time and title.
- If news released, government communications and records of interviews
- Summary cost breakdown of cleanup, including equipment, manpower, materials, accommodation, transportation, claims.
- Summary of injuries or deaths caused by the spill or occurring during cleanup
- Suggestions to improve cleanup operations during future responses
- Summary analysis of what went right and what went wrong including reporting procedures.

SPILL REPORTING PROCEDURE

I . Fill out "**SPILL REPORT**" form as completely as possible before making the report.

2. Report **IMMEDIATELY** to NEB. **John Korec (403) 292-6614 (office), (403) 292-5876 (fax)** or Yellowknife using the 24-hour Spill Report Line.

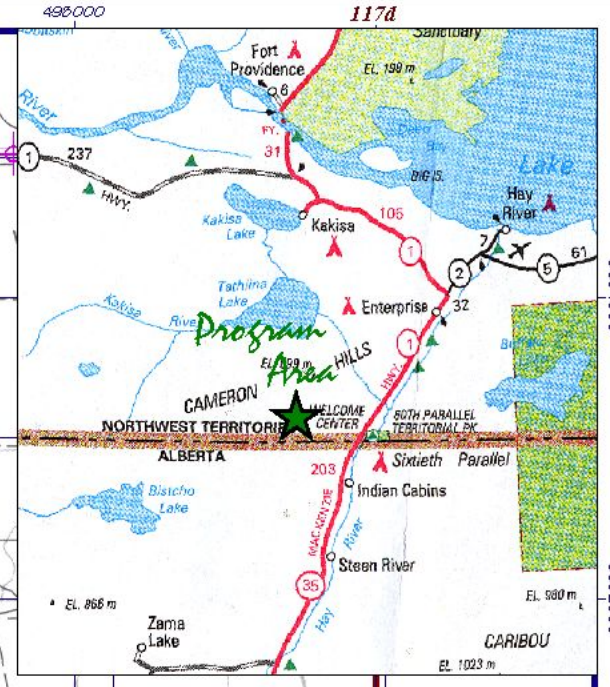
24-HOUR SPILL REPORTING LINE (867) 920-8130

NOTE: Telephone calls can be made collect by informing the Operator that you wish to report a spill.

RCMP Communications may be used if other means are not available.

Additional Information or Assistance

Government of Northwest Territories Environmental Protection Services	Phone: Fax:	(867) 873-7654 (867) 873-0221
Department of Indian Affairs and Northern Development Water Resources Yellowknife	Phone: Fax:	(867) 920-8240 (867) 669-2716
Environment Canada Environmental Protection Branch	Phone: Fax:	(867) 669-4710 (867) 873-8185
National Energy Board (spills) Field Operations & Safety Exploration and Production Team Calgary	Phone: Phone: Phone: Fax:	(403) 292-6614 (403) 299-3868 (403) 292-6614 (403) 292-5876



Paramount resources ltd.

PRELIMINARY PLAN

A05P-CAM-2D

UTM Zone 11 NAD 27

NORTHWEST TERRITORIES

Map Sheets 84N15/14 AB, 85C03 NWT

LICENSEE: Paramount resources ltd. No: 937 NWT

PERMITTEE: To be determined.

ENERGY SOURCE: Dynamite, Vibroseis

EQUIPMENT: Wheeled, Tracked

COMMENCMENT:

COMPLETION:

TOTAL PROGRAM 42.85 km

18.41 km - New Cut 6.0 m LIS

24.44 km - New Cut 6.0 m LIS (regrowth)

Access

Railway Crossing

Well Tie

Pipeline

Stream Crossing

Snow fill

SCALE: 1:50000

DATE: 01 September 2005

PREPARED BY: MDW

Program Map Approved By:

File: 051164

1 0 1 Kilometers

0.5 0 0.5 1 Miles

synterra technologies

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 16 2005

File: MV2005B0021

Ms. Shirley Maaskant
Paramount Resources Ltd.
4700, 888-3rd Street S.W.
CALGARY AB T2P 5C5

Fax: (403) 264-9206

Dear Ms. Maaskant:

Complete Application, Type "A" – 2D Seismic – Cameron Hills Significant Discovery License 8

This acknowledges receipt of your land use application on September 9, 2005. The Mackenzie Valley Land and Water Board and staff will be processing your application as per Section 22 (1)(b) of the Mackenzie Valley Land Use Regulations.

Within forty-two (42) days of the date of this letter, the Mackenzie Valley Land and Water Board will take one of the following actions:

1. Issue a Type "A" permit, subject to any conditions included pursuant to Subsection 26(1);
2. order, pursuant to Subsection 24(1) of the *Mackenzie Valley Resource Management Act*, that a hearing be held or further studies or investigations be made respecting the lands proposed to be used in the land-use operation;
3. refer the application to the Mackenzie Valley Environmental Impact Review Board for an environmental assessment pursuant to Subsection 125(1) of the *Act*; or
4. where a requirement set out in Section 61 or 62 of the *Act* has not been met, refuse to issue a permit.

If you have any questions regarding this letter, contact me at (867) 669-0506 or email mvlwbpermit@mvlwb.com.

Yours sincerely,

A. Paradis

Adrian Paradis
Regulatory Officer

Copied to: Ed Hornby, South Mackenzie District, DIAND

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

FILE NUMBER: MV2005B0021

Date: Friday, September 16, 2005

To: Ms Shirley Maaskant

Organization: Paramount Resources Ltd

Fax Number: (403) 264-9206

Copied To: Ed Hornby, DIAND

From: Adrian Paradis, Regulatory Officer

Number of pages including cover 2

Remarks:

Complete Application, Type "A" – 2D Seismic – Cameron Hills Significant Discovery License 8

- ☐ Enclosures
- ☐ As requested
- ☒ For your information
- ☐ For your comment
- ☐ For your approval

Delivered by		Date
☒	Mail	
☐	Courier	
☐	Hand Delivered	
☒	Fax	Sept 16/05

Group Send Report

Page : 001
Date & Time: 16-Sep-2005 02:05pm
Line 1 : +8678736610
Line 2 : +18678736610
Machine ID : MVLWB

Job number : 953

Date : 16-Sep 02:03pm

Number of pages : 002

Start time : 16-Sep 02:03pm

End time : 16-Sep 02:05pm

Successful nbrs.

One touch numbers

57 6692720

Fax numbers

☎14032649206

Unsuccessful nbrs. Pages sent

Job number : 953 *** SEND SUCCESSFUL ***

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

FILE NUMBER: MV2005B0021

Date: Friday, September 16, 2005

To: Ms Shirley Maaskant

Organization: Paramount Resources Ltd

Fax Number: (403) 264-9206

Copied To: Ed Hornby, DIAND

From: Adrian Paradis, Regulatory Officer

Number of pages including cover 2

Remarks:

Complete Application, Type "A" – 2D Seismic – Cameron Hills Significant Discovery License 8

- ☐ Enclosures
- ☐ As requested
- ☒ For your information
- ☐ For your comment
- ☐ For your approval

Delivered by		Date
☒	Mail	
☐	Courier	
☐	Hand Delivered	
☒	Fax	Sept 16/05