



Sahtu Land and Water Board

Staff Report

Division: Land Program	Report No. 02
Date Prepared: December 8, 2003	File No. S03A-008 / S03L1-016
Meeting Date: December 9 th , 2003	
Subject: Type A Land Use Permit and Type B Water Licence Applications by Apache Canada Ltd.	

1. Purpose/Report Summary

To inform the Board about a Type A Land Use Permit and Type B Water Licence applications by Apache Canada Ltd. for Oil Drilling and Exploration located in Nogha/Tunago Settlement Lands located south of the Community of Colville Lake, SSE of Lac Belot, and North of Tunago Lake.

2. Background

2.1 Project Overview

Apache Canada Ltd. is planning to drill three exploratory wells, West Nogha K-14, Nogha B-23, and North Tunago E-44, located between 54 km and 73 km south of Colville Lake. The locations have been chosen following a previous seismic program with Paramount Resources Ltd. in the winter of 2002/03. The Nogha drilling program is being proposed by Apache to assess the hydrocarbon potential on Settlement Land Blocks M-11, M-16, and M-20. The drilling program includes the construction of approximately 131 km of access utilizing existing cut lines, construction of three well sites, three sumps and one campsite. Access and lease construction is planned to begin in December 2003 when the ground should be frozen for moving equipment. Transportation of the drilling rig, set up and drilling is scheduled to take place in January 2004.

The wellsites will be accessed using existing cutlines south from Colville Lake. The access will be 131 km long and 10 meters wide, to allow for the movement of heavy equipment and rig components. Approximately 100m³ of water will be required for each kilometer of access development. Access construction is estimated to require 13,100m³, with water volume requirement for drilling estimated at 1,500m³. Water sources have been identified in four unnamed lakes, Lac Belot, Tweed Lake and Tunago Lake. These lakes were depth sounded for water volume drawing and potential impacts. DFO Protocol for Water Withdrawal has been adhered to. Lakes in the area have been sited for potential airstrips for crew changes, supply flights and for med-evac, if required. The airstrip at Colville Lake may also be used to stage equipment and personnel. The lease dimensions of the well sites will be 120m x 120m and construction will involve the clearing of scrub spruce and shrubs, stripping of topsoil and leveling the lease.

Construction crew members will be housed in Colville Lake, until a 25 man sleigh camp can be utilized. The sleigh camp will be located a minimum of 15km from the community of Colville Lake. A 50-man camp will be utilized to accommodate fluctuating levels of personnel during the drilling operation. Upon completion of the drilling operation, a service rig may be brought in along with a 65 man camp. The service rig camp will be located alongside the drilling rig camp. Drilling will take place over 80 days. Historically, the SLWB has not allowed the use of hydrocarbon based drilling fluids to be used in oil drilling programs in the Sattu region. The rationale is a tolerance of not greater than 0.01 % of hydrocarbons by weight is allowed in the sumps. In a separate staff report being presented by the Water program, SLWB staff will present their findings on research into Distillate 822, a hydrocarbon drilling alternative, the use of which is being proposed by the applicant for drilling in this project.

2.2 Process Requirements

A Type A Land Use Permit is required for the following activities: use of vehicles in excess of 10t, construction of camps, clearing of land, fuel storage with capacity exceeding 80,000 L and fuel containers exceeding 4,000 L (262,380 L). The application with fees for the amount of \$6,985.50 was received in our office on October 21, 2003. The payment of these fees was based on the areal extent of the access roads and well sites at 136.71 ha.

A Type B Water Licence is required for water withdrawal to ice the access road, water withdrawal for the drill rig, and deposition of drilling waste. Water Licence fees of \$30.00 were received concurrently with the Land Use Permit fees.

The applications were deemed incomplete October 28, 2003. After a response to a list of deficiencies, the applications were deemed complete on October 31, 2003. The 42 day processing period ends on December 12, 2003. The applications were distributed to 27 referral organizations on November 3, 2003 requesting a response by November 24, 2003.

2.3 Attachments

- Map: Apache Canada - Nogha/Tunago Drilling Program

3. Comments

3.1 Permission of Land Owner/Community Consultation/TEK

The access route passes through a small area of Sattu Settlement Lands northeast of Colville Lake. The remainder of the drilling activity takes place inclusively within the boundaries of EL 399. Paramount has assigned 50% of their interest in the project to Apache. This application includes the Assignment and Novation (to make new) Agreement signed August 21, 2003, which has the signatures of Paramount, Apache, and the land corporations: The Behdzi Ahda First Nation, Aiyoni Keh Land Corporation, Yamoga Land Corporation and the Fort Good Hope Metis Nation Local #54 Land Corporation whom signed the Access Agreement with Paramount Resources Ltd. February 14, 2001.

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3.2 Community Consultation

Apache has presented and discussed the Nogha/Tunago Drilling Program with the community members of Colville Lake, Fort Good Hope and Norman Wells as well as representatives of their respective land corporations and renewable resources councils. Workshops, meetings, and telephone calls have provided the opportunity to discuss project components, goods and service requirements and employment opportunities. Traditional Environmental Knowledge (TEK) consultation has been conducted over the project area.

Colville Lake Community Meeting, August 6, 2003

A community meeting was held in Colville Lake on August 6, 2003 to discuss the 2002/03 drilling program and to present the proposed drilling programs for Maunoir Ridge and the Nogha Settlement Lands.

- A significant concern that was raised by elders attending the meeting was the apparent effect of last year's activity on local caribou populations. It was suggested that Apache/Paramount should take a one-year hiatus to allow the wildlife to recover. It was alternatively suggested that local wildlife monitoring be conducted in an attempt to determine the effect, if any of the drilling activity on wildlife populations or movement. There was agreement that some form of monitoring would be useful. Another concern was the effect that development would have on the community and the potential that traditional lifestyles would be lost to the youth when they found employment on exploration and development projects.
- Concern was raised about the flow of employment and business opportunities to the community. Apache/Paramount were requested to assist in developing business opportunities, not strictly employment opportunities to the projects.
- Safety issues arose over the heavy truck traffic on the Colville Lake Winter Road. It was agreed that further discussion was required to address workable solutions, which would also involve the NWT Department of Transportation.

Calgary Meetings, September 8-10, 2003

Extensive meetings were held over three days in Calgary with representatives of the Colville Lake community and Apache/Paramount. The issues of concern identified at meeting of August 6, 2003, were further discussed and addressed to the satisfaction of the community.

Fort Good Hope Community Meetings: July 29, September 25, 2003

Meetings were held at the community complex on July 29 and September 25 to discuss Apache's proposed drilling program including access routing, methods of construction and timing and to review the previous year's seismic program at Lac Maunoir. Discussions took place regarding the Turton Lake Seismic Program.

Topics that were raised as concerns by the attendees and addressed by Apache representatives on July 29, and September 25, 2003 are:

- Benefits Plan and Access Agreement,
With respect to the Turton Lake Program Apache responded by indicating that a proposed Benefits Plan has been prepared and delivered to the Tulita District Land Corporation for comment. A copy was provided to the K'ahsho Got'ine District Land Corp. in Fort Good Hope and to Indian and Northern Affairs Canada in Yellowknife. Apache informed the meeting that Paramount's agreement for the Settlement Lands in EL399 was

The meeting commenced at 7:20 PM with five members of the community in attendance. Items addressed were Turton Lake 2D Seismic, drilling on EL 399, EL 414, and the Sahlu Settlement Lands (Nogha/Tunago Lake). The alternate winter access route using the Petro Canada access road was discussed, as well as winter road safety. No concerns were expressed for the proposed winter drilling activity. The meeting adjourned at 7:50 PM.

Norman Well Community Meeting, July 29, 2003

- Environment
 - Apache's winter work is located in fishing, trapping and caribou habitat. Monitors were requested by members of the community, as was the need to compensate trappers for lost revenues. Apache will have local monitors on the projects, habitat protection will be addressed in the Environmental Protection Plan, and trapper compensation is part of the Benefits Agreement between Apache and the communities. Apache introduced the new operating procedure to use mineral-based drilling fluids to replace the harmful salt-based fluids used last year. Less environmental problems occur if a spill occurs with this bio-degradable solution.
 - Winter Road Safety
 - Concern was expressed with respect to safe travel on the winter road during the drilling operations. It was pointed out by members of the community, that winter road maintenance and operation was not the direct responsibility of the oil and gas companies. However, Apache confirmed that all contractors and services would be advised of strict speed limits and safe driving practices.
 - Respect
 - Some examples of disrespectful treatment of local employees and community members were given but related primarily to another operator from last year. Apache, Nabors, and Akita/Sahlu are committed to respectful interactions this year.
 - Traditional Knowledge Consultation
 - With respect to the Turton Lake project the issue of adequate TEK was raised and Apache responded that they felt adequate consultation was done with organizations from the Tuliita District. An agreement was reached that two elders would be given an over flight of the Turton Lake area.
 - Commitment and Investing in Communities
 - Frustration was expressed by some attendees that most of the economic benefit from the drilling projects appears to go to local contractors. A concern was that working relationships between the operators and the local employees and communities was less than ideal last year. People would like to see investment made in the community infrastructure.
 - Socio-Economic Impacts
 - Questions arose regarding Turton Lake. David Calvert, Apache Canada Ltd, summarized that \$1.6 million, and approximately 650 person days of work out of a budgeted \$2.0 million, will be awarded to contractors in the Sahlu District through joint ventures businesses.
- assignable and that they would be working to clarify this understanding with the signatory parties.

3.3 Traditional Environmental Knowledge

Traditional Environmental Consultations were held in the communities of Fort Good Hope. These consultations were held in order to gain an understanding of TEK in relation to the project impacts. The knowledge assisted Apache in conducting their drilling program with the least impact on the land, the people who utilize this area, and their areas of cultural significance. The following information was obtained during the TEK consultation:

- A number of burial sites were identified in the area to the east and north of Colville Lake, but none will be impacted by the program
- A number of trappers use existing seismic cutlines for trap lines and access in the area around the north flank of Maunoir Ridge.
- Three traditional trails were identified: one will not be affected by the project. One will cross the Maunoir access, and one trail utilizes portions of the cutline proposed as access for the Nogha drilling program.
- Trapping concerns - people want compensation for damaged traps and lost income due to high industrial activity in traditional trapping areas.
- Caribou - migration routes are being disturbed by industrial activity in traditional hunting areas
- Safety –traveling too fast for conditions on winter road and unsafe to pull-off when facing oncoming traffic due to tree stumps and sticks poking up.
- Spiritual/burial site at Tunago Lake – Sarah Kochon's father is buried here. This site is at the NE end of the lake marked by a tree with all the bark and branches peeled off and a wooden grave marker painted white and black with a tall cross on it.
- Gabe Kochon uses cutlines for trapping that are proposed to be used for access to the Nogha and Tunago Wellsites. He and his son Earl plan to trap in the area from the beginning of November to the end of December. It is possible that they will also be trapping in January and February. There was some concern about the impact that the drilling program would have on their traplines. Information on burial sites, cabin locations, fish lakes, and big game areas was provided.

3.4 Potential Environmental Impacts and Mitigation Measures

3.4.1 Physical Chemical Environment

Ground Water and Surface Water

Water Quality Changes - Fuel caches will be set-back a minimum of 100m from the high water mark of any water body. Apache has a Spill Contingency Plan in place. Sleigh camp sewage (blackwater and greywater) will be spread on the surface. Drilling camps will utilize a sump. No materials will be stored on the surface ice of any waterbody or within 100 m of the normal high-water mark (including the air strip location). Camps will be set-back a minimum of 100m from the high-water mark of any waterbody to reduce the potential of infiltration of blackwater.

Flow Level or Changes - Water for the camps will be taken from nearby lakes. Water withdrawal will be in accordance with DFO protocol. Water for drilling and road construction purposes will only be obtained from DFO approved water sources

Greenhouse Gas Emissions - Testing during drilling may result in the flaring of natural gas. Flaring will be conducted in accordance with accepted and required testing practices and regulations.

Resource Depletion - The project itself will not deplete local non-renewable natural resources; however, if significant discoveries are made of gas and oil, the extraction of those resources would be considered a non-renewable resource activity.

Non-Renewable Resources/Air/Climate/Atmosphere

Permafrost Regime Alteration - Wherever possible, existing lines will be utilized for access to limit new clearing. Frozen ground conditions will limit potential damage to surface soils and permafrost. Cat blades will have protective shoes to elevate the blade, leaving some snow cover to protect vegetative mat and, thereby, reduce potential for erosion and damage to permafrost. Camps will be situated within existing clearings wherever possible to reduce the amount of new clearing required. Drilling waste will be mixed-buried-covered and frozen into the permafrost in a remote sump(s). The sump(s) will be covered with excess material placed on top to account for settling. The access and well site will be monitored for melting permafrost from solar exposure and rutting in the event of warming conditions.

Destabilization and Erosion - Stream crossings will be at the most level locations possible, constructed using clean snow fill, and will be at 90 degrees to the banks. Watering the access road will further reduce potential for erosion. Felled trees will be windrowed within the right-of-way. If ground disturbance does occur, it will be recontoured and reseeded with an approved mix immediately, and inspected within one full growing season.

Ground Disturbance - Access will be constructed using snow and ice that will create a protective layer over the soil profile. A minimum layer of 10cm of snow/ice will be maintained. The use of heavy equipment may result in soil compaction. If compaction occurs, it will be limited to the drilling sites and the access roads; however, the effects will be minimal due to the frozen soil profile. Removal of vegetation and soil will be restricted to the wellsites. Topsoil will be removed in a single lift and conserved, where possible, for replacement during reclamation.

Soil Contamination - All fuel storage will be within a bermed area that is considered to be impermeable, as well as being stored a minimum of 100 metres from the ordinary high water mark of surface water bodies. Fuel storage tanks will be placed on liners within bermed areas to contain accidental releases. Drip pans and absorbent pads shall be utilized while refuelling trucks or equipment and for the overnight storage of equipment. Apache has a Fuel and Oil Spill Contingency Plan in place. The project will be conducted during winter conditions (frozen ground and snow cover) when spills are highly visible.

Land

Noise Increase - Conducting the program during the winter will minimize activity during critical periods for wildlife (spring and fall). Noise will be limited to the access road and drill sites. Noise will be transient (along access) and local and temporary (access and wellsite).

Noise

3.4.2 Biological Environment

Vegetation

Species Composition - Exposed mineral soil invites invasion by weed and disturbance species. This effect shall be mitigated by erosion control and reseeding with uncontaminated seed sources that reflect the natural species composition of the area. Only the wellsites will be cleared of vegetation, as access will follow existing cut lines.

Species Introduction - Vehicles and equipment shall be inspected and cleaned to ensure weed, naturalized, foreign or exotic plant species are not introduced. Reseeding mixtures must not be contaminated with weed or disturbance species. Reseeding and monitoring re-vegetation efforts will minimize colonization of the disturbed area by the above-mentioned undesirable species.

Toxin / Heavy Metals Accumulation - Drilling waste will be mixed-buried-covered and frozen into the permafrost in a sump. The sump will be buried, with excess material placed on top to account for settling. Drilling will utilize a non-toxic, freshwater-based gel-chem drilling fluid for the upper portion of the well. All hydrocarbon or salt contaminated drilling waste will be tanked and shipped to a Class II disposal facility in Alberta. Testing during drilling may result in the flaring of natural gas. Flaring will be conducted in accordance with accepted and required testing practices and regulations.

Linear Migration Routes, Habitat Fragmentation - The maintenance, extension and improvement of linear migration routes (winter roads) will initiate the process of habitat fragmentation and increase predation opportunities and activities. Such fragmentation, and subsequent island effects may influence the movement of genetic material through animal populations. This effect is amplified by deforestation and development. This is an unavoidable effect of highway construction and development.

Wildlife and Fish

Effects on Rare Threatened or Endangered Species - The Species at Risk Act and the Committee on the Status of Endangered Wildlife Species in Canada (COSEWIC) lists Grizzly Bear and Wolverine as species of Special Concern. The localized and stationary nature of the project limits potential impacts to Grizzly denning sites. The Sahtu Renewable Resources Board and the Behdzi Ahda Renewable Resources Council will be notified if any bear denning sites are identified. The use of an existing access and the prohibition of guns in the rig camp will avoid increased hunting pressure on ungulates, which is a main cause of the decrease of the wolverine population. COSEWIC lists Boreal (Woodland) Caribou and Anatum Peregrine Falcons as Threatened Species. Woodland Caribou suffer from a combination of natural predation, habitat fragmentation or destruction, human disturbance, and intense hunting activity. Apache's no firearm policy should mitigate any direct loss of Woodland Caribou population. The project does not involve the disturbance of Peregrine Falcon Habitat (cliff ledges near wetlands).

Fish Population Changes - Water withdrawal will be in accordance with DFO protocol. Water sources are of sufficient size that water removal will be less than 5% of the total under ice water volume. The water bodies utilized contain large volumes of water; therefore, the draw-down of the lake will not negatively affect fish populations. The end of the water intake pipe will be screened with a DFO approved screen to prevent the entrainment of fish.

Breeding Disturbances - Program conducted during winter conditions to avoid critical breeding and birthing periods for wildlife (late Spring and early Fall).

Planning / Zoning Changes or Conflicts - The Sattu Land Use Planning Board (SLUPB) has released a Preliminary Draft Land Use Plan. No approved Land Use Plan exists. The portions of the project area are within areas which have been designated as Special Management Areas under the Preliminary Draft LUP. These areas are situated around Colville Lake, Lac Belot and Tunago Lake. This project meets the objectives and provisions of the SLUPB Preliminary Draft LUP for development within a Special Management Area. This project would meet the criteria of an acceptable land use within

Social and Economic

Reduction/Removal of Keystone or Endangered Species - Woodland caribou, if present, will experience negative effects or population declines due to increased predation and disturbance due to oil and gas activities. Barren-Ground Caribou winter habitat has been identified near the project area. Apache plans to conduct the program without disturbing the vegetation mat by leaving snow/ice on the access. Disturbance will be limited to the well sites, existing access, camps and sumps.

Predator-Prey - Predation and predatory success rates may increase as a result of newly cleared or maintained access routes. Hunting pressure and success will increase as a result of increased and more convenient access to the land.

Habitat and Communities

3.4.2 Interacting Environment

Wildlife May be Attracted to Garbage or Harmed by Debris from Operations - Garbage will be incinerated on site or removed from the program area to Norman Wells. Sumps will be fenced to protect the public, personnel and wildlife from entrapment or injury.

Forestry Changes - Windrows will have 7m breaks every 300m to allow passage by animals and reduce the potential of forest fires.

Game Species Effects - Game species include moose and caribou. Newly cleared areas provide increased habitat for moose. Moose have in the past shown great resilience to disturbance and noise from exploration. The disturbance is short in duration and localized. Breaks in windrowed slash will allow passage of wildlife. No firearms will be permitted, except for environmental monitors. The mitigation measures under rare species apply to boreal caribou. Equipment will be speed limited to 40 km/hr.

Habitat Changes/Effects - An existing access route will be used and only small amounts of clearing will be required for safe passage of equipment. Crews will be restricted to movement along the access road. Slash will be windrowed with 7m breaks every 300m to allow passage of wildlife.

Health Changes - Solid Waste and Combustibles will either be incinerated on site or removed from the program area to Norman Wells. No sewage will be disposed of within 100m of any water body.

Population Reduction - The project has a potential to indirectly cause population reduction through increased stress from disturbance, habitat change, increased predation or hunting pressure. The project is not expected to directly cause any significant population reduction. Mitigation measures listed under rare/threatened species, habitat effects, and game species effects apply.

a Special Management Area while complying with the provisions outlined, including adequate public consultation and mitigative measures to ensure the protection of water, land and wildlife.

Human Health Hazard - The sleigh camp will be moved frequently and the sewage will be spread on surface (at least 100m from any watercourse) as one-time releases and part of the standard operating practices in the area to minimize permafrost damage. The drilling camps will utilize sumps for the disposal of sewage waste (blackwater). The sump(s) will be located at least 100m from the ordinary high water mark of any water body. Fuel caches will be setback a minimum of 100m from the ordinary high water mark of any water body. Drilling will utilize a non-toxic, freshwater-based gel chem drilling fluid as well as a mineral oil based or salt based drilling fluid. The freshwater gel chem drilling waste will be disposed in a sump adjacent to the wellsite. The sumps will be mixed-buried-covered. The hydrocarbon or salt contaminated drilling waste will be stored in tanks until it is shipped to a Class II waste disposal facility in Alberta. No materials will be stored on the surface ice of any waterbody or within 100m of the ordinary high-water mark. The program will be conducted during winter conditions (frozen ground and snow cover) when spills are highly visible and can be cleaned-up before infiltration occurs. Garbage will either be burned on site or removed from the program area to Norman Wells. All camps and operations must comply with the NWT Public Health Act. All drinking water for the camps will be tested and/or treated prior to consumption. All camps are subject to periodic inspections by the designated Public Health Officer. The project must comply with the 1995 National Building Code for construction camps and the 1995 National Fire Code for fuel facilities and related standards.

Affect other Land Use Operations - Increased traffic on the Winter Roads from Norman wells to Fort Good Hope, and from Fort Good Hope to Colville Lake can negatively affect regular traffic patterns. Equipment and vehicles will be speed limited to 40 km/hr. Colville Lake and Fort Good Hope trappers/hunters should be notified when construction will start in the area.

Quality of Life Changes - Access into the area will be improved. Local personnel and businesses will be employed wherever possible. An Access and Benefits Agreement has been signed which will contribute to the local economy through employment of personnel, contractors and businesses.

Public Concern - Apache will station one construction supervisor, who will act as community liaison, in Norman Wells, Fort Good Hope and Colville Lake. Apache will have one drilling operations supervisor who will act as community liaison with Colville Lake. Apache will attempt to employ one environmental and one wildlife monitor from Colville Lake or Fort Good Hope. They will follow the new Guidelines for Environmental Monitors in the NWT.

Cultural and Heritage

Increased Economic Pressure - The project may contribute to pressure on local communities to enter the wage economy. Local personnel and businesses will be employed wherever possible providing an economic benefit. An Access Agreement and Benefits Plan have been signed.

Increase Pressure on Archeological Sites - A search of recorded archaeological sites was conducted through the Canadian Museum of Civilization. The Sahtu Interim Atlas and the Draft Sahtu Land Use Plan was also reviewed for archaeological information. Three sites were identified but were outside of the project area. One burial site was identified during the TEK Study at the NE end of Tunago Lake. If a suspected site is discovered during the conduct of the project, workers will not disturb the site and the SLWB and the Prince of Wales Northern Heritage Centre will be contacted for advice.

The proponent was recommended to conduct a follow-up effects monitoring program designed to assess impacts to archaeological resources and focused on all project areas (including, but not limited to, drill sites, storage locations, access routes) involved in this coming winter's exploration, or in past Apache Canada exploration programs.

Effects to Aboriginal Lifestyle - Community members hired as monitors, will identify traditional trails that cross the access route. If any existing trails are crossed, a gap will be left in the windrow to allow access across the trails. Overall harvests of Caribou are not expected to decrease as a result of the development.

3.5 Preliminary Environmental Screening

Section 124(1) of the Mackenzie Valley Resource Management Act requires the SAHTU Land & Water Board to undertake a Preliminary Screening of any proposed development prior to the issuance of a Licence, Permit, or Authorization.

Based on the information provided in the application and by referral agencies (see below) a Preliminary Environmental Screening was performed. The Preliminary Environmental Screening Report is attached. The report concludes that the environmental impact of the proposed project can be mitigated with known technologies and that no significant public concerns have been raised. The Preliminary Environmental Screening Report will be forwarded to the MVEIRB once it has received approval from the Board.

3.6 Conformity with Land Use Plan

The Sattu Land Use Planning Board certified that there is no approved Land Use Plan for the affected area. A Preliminary Draft Land Use Plan has been published. The SLUPB acknowledges that the SLWB has met the referral obligations of the Mackenzie Valley Resource Management Act. A review of the Draft Land Use Plan has identified the area as a Special Management Area. For more information on comments provided by the SLUPB please see Other Agency comments.

3.7 Draft Permit/Draft Licence

Drafts of the Permit and the Licence are attached.

3.8 Terms and Conditions

Draft Terms and Conditions are attached for the Permit and the Licence.

4. Other Agency Comments

The application was circulated to 27 organizations requesting a reply by November 24, 2003. Organizations were contacted on November 24, 2003. To date 15 written responses have been received. The following organizations offered comments on the application:

The Sattu Renewable Resources Board

The SRRB is satisfied that all requirements are met provided that:
• Every effort will be made to avoid disturbance to any wildlife, particularly Caribou, encountered during the program.

- If any bear denning sites are identified during the program, the Colville Lake & Fort Good Hope Renewable Resources Council, the Department of Resources, Wildlife & Economic Development – Sahtu Region, and the Sahtu Renewable Resources Board will be notified immediately.
- Due to shallow lake depths and/or limited water volumes, no water should be withdrawn from Lakes 13 & 15. However, the Board will rely on DFO to make the final decision regarding lake usage.
- The environmentally friendly mineral oil-based drilling fluid will be used instead of the salt-based alternative.
- At least one week prior to commencement of the program, area trappers, traditional users, and community organizations in Colville Lake and Fort Good Hope will be notified via letter and posted notices.
- Trained environmental monitors familiar with the Nogha/Tunago Lake Program area from Colville Lake and /or Fort Good Hope will be utilized and hired through the Behdzi Ahda' and/or Fort Good Hope Renewable Resources Councils. Weekly reports will be provided to the Behdzi Ahda' & Fort Good Hope Renewable Resources Councils and the Sahtu Renewable Resources Board.
- On any access road, all drivers will observe speed limits and watch for wildlife.
- It is hoped that every effort will be made to use a native seed source or, if not possible, to ensure that an uncontaminated seed source is used.

Department of Fisheries and Oceans

Fisheries and Oceans have reviewed the application and need some clarification regarding water sources in order to complete the assessment. There are some discrepancies on water volume, which might be a calculation error. They have asked the applicant to submit the information directly to them. Upon receipt of the information DFO will issue a Letter of Advice on withdrawal of water volumes.

DFO issued a Letter of Advice on December 4th after reviewing information sent to them by the applicant and offer the following comments, which are summarized.

- Drilling fluids to be used will be freshwater gel-chem and either mineral oil-based fluid or salt based drilling fluid. DFO recommends that the mineral oil-based fluid be used since the potential impacts to ground water are minimized in comparison to using a salt based drilling fluid (based on the information submitted by the proponent).
- Seven stream crossings were noted on the proposed access route, two of which may require temporary culvert installation to reduce the potential for overflow. Prior to culvert placement DFO will be consulted. Contacting DFO is a requirement as the use of material other than ice or snow to construct a temporary crossing-over of any ice-covered stream is prohibited under Section 11 of the Northwest Territories Fishery Regulations, unless authorized by a Fishery Officer.
- The applicant was asked to provide co-ordinates for all constructed crossings to DFO, not just those that require culvert installation.
- The total estimated water requirements for the program are as follows: 13,100 m³ for access construction, 1,500 m³ for drilling, and a potable water supply of 5 m³ per day for camp use. Lac Belot, Tweed Lake, Tunago Lake, and four unnamed lakes (Lakes 13 to 16) have been identified as the water sources for this program.

- Water volumes will be carefully tracked to ensure the 5% maximum withdrawal is not exceeded. At the conclusion of the winter drilling program, the applicant was asked to submit a properly corroborated record of water withdrawal for each Water source to DFO.

Prince of Wales Northern Heritage Center

The heritage centre recommends that next summer the proponent be required:

- To conduct a follow up effects monitoring program designed to assess impact to archaeological resources and focused on all project area (including, but not limited to, drill sites, storage locations, access routes) involved in this coming winter's exploration, or in past Apache Canada exploration program.
- To undertake an archaeological impact assessment in areas identified for future exploration.

DIAND Land Use Inspector

The Land Use Inspector submitted recommended Terms and Conditions. These have been included in the draft Terms and Conditions for the Permit.

DIAND Water Licence Inspector

The Water Licence Inspector made recommendations pertaining to disposal of waste and sump management.

DIAND Water Resources

The Water Resources Division reviewed the application and offer the following comments which are summarized.

- Apache states that all wellsites (B-23, K-14, E-44) will involve the stripping of topsoil and clearing of vegetation at the site during lease construction. Is it not possible for Apache to construct these leases without the clearing of vegetation and stripping of topsoil? Is it not possible in these situations to use ice and snow to build up the lease (i.e. build an ice Pad)? This method of construction would only result in minimal disturbance to the site. What are the reasons for Apache not constructing their leases in this fashion?
- Apache is proposing to drill three wells, B-23, K-14, E-44. These three wells are all in close proximity, with the B-23 well located approximately 25km from both the K-14 and E-44 wells. To ensure the least amount of disturbance occurs to the environment, one sump should be used to contain the drilling waste for both wells.
- Using the RECLAIM Model for Oil and Gas developments, it was estimated that the total cost for the abandonment and restoration of the project site and associated facilities would be approximately \$900,000.00. Recently, similar projects in the Inuvialuit Settlement Region have been requesting security deposits in that range by the Northwest Territories Water Board.

Mackenzie Valley Land and Water Board

The MVLWB considers the project not likely to have an impact in more than one settlement area.

National Energy Board

The NEB provided advice on the scoping of the project, which has been incorporated into the Preliminary Screening Report. The NEB recommended to take into consideration various sections of the Drilling Regulations pertaining to spill contingency planning, site assessment, waste management, and handling of any petroleum products produced from the well. For details, see the attached correspondence. In staff's opinion those items have been addressed sufficiently in the Preliminary Screening and the Terms and Conditions.

GNWT- Department of Transportation

DOT had no comments as the applicant has obtained temporary access permits to access the Fort Good Hope – Colville Lake Highway.

GNWT - MACA – Fire Marshall, Norman Wells

The office of the Fire Marshall recommended that the applicant comply with all the requirements of the 1995 National Building Code (NBC) Part 9 for the construction camps, and the 1995 National Fire Code (NFC) for the fuel facilities and related standards.

GNWT - RWED , Norman Wells

Resources Wildlife and Economic Development offered comments on November 26, 2003, which are summarized.

- All monitors who are engaged to act as wildlife or environmental monitors be instructed to make weekly written reports available to the appropriate regulative authorities. The same courtesy should be reciprocated to the monitors. This will engage in a coordinated effort to follow up with incidents as they occur, and also provide an opportunity for the monitors to work with Land Use Inspectors or RWED officers during patrols or inspections.
- RWED asked to be given names of the environmental monitors either hired or contracted by the companies involved with these particular projects, as well as phone numbers and locations during the projects. RWED will provide phone numbers and officer contacts to each monitor as well.

Environment Canada

Environment Canada submitted general recommendations regarding compliance with the Fisheries Act, deposition of debris, prevention of damage to ground vegetation, and water crossings. These recommendations are addressed in the Board's standard Terms and Conditions.

Environment Canada said that assessment of potential impacts from well test flare emissions is not possible with information provided by the proponent. Concerns regarding solution gas flaring include adverse effects on human and wildlife health and loss of habitat. To properly assess potential impacts the proponent needs to provide the following information: composition of the solution gas to be flared, flare stack parameters and an estimate of flare efficiency, total amount of solution gas to be flared, estimate of flare emissions and appropriate modeling to predict ambient concentrations of released pollutants. At the minimum, the proponent should follow standard flare assessment guidelines such as the Alberta Energy and Utility Board "Upstream Petroleum Industry Flaring Guide" (Guide 60).

The Sattu Land Use Planning Board says that there is no approved Land Use Plan for the area affected by the above captioned application. The chairperson confirms that the SLWB has met the referral obligations to the SLUPB as outlined in the MVRMA.

5. Conclusion

The Preliminary Environmental Screening Report did not identify any Significant Adverse Environmental Impacts or Significant Public Concerns. All potential environmental impacts identified during public consultation and by referral agencies can be mitigated with known technology and have been addressed in the Terms and Conditions of the Land Use Permit and the Water Licence.

The Preliminary Environmental Screening Report, the Land Use Permit with Terms and Conditions, the Water Licence with Terms and Conditions, have been submitted to the Board for approval. Should the Board grant approval, the Permit and Licence could be issued on December 12, 2003, pending no objections from the MVEIRB.

6. Recommendation

The Preliminary Screening Report determined that the development proposal would have no Significant Adverse Environmental Impact, or Significant Public Concern. It is recommended that the SLWB proceed with the regulatory process and implementation by issuing the Land Use Permit and Water Licence, conditional on the Preliminary Environmental Screening Report being accepted by the MVEIRB.

7. Reference Material Attached

- 7.1 Map of Permit Area.
- 7.2 Draft Preliminary Environmental Screening Report.
- 7.3 Draft Permit with Reasons for Decision.
- 7.4 Draft Licence with Reasons for Decision.
- 7.5 Draft Terms and Conditions for Permit and for Licence.

Respectfully submitted,

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Land Technician

G.T. Govier

G.T. Govier
Executive Director

*Agree with Conclusion of Recommendation
Environment to Issue Permit & Licence*

Executive Director Comments: