

CHAPTER 13

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CHAPTER 13

LAND USE AND HERITAGE RESOURCES

13.1 INTRODUCTION

This chapter focuses on how the construction and operations of the Mackenzie Gas Project and the Northwest Alberta Facilities could potentially affect land ownership and land access, land uses (specifically, granular resources, timber resources, and tourism and outdoor recreation), and heritage and historical resources. Land and resource users in the Mackenzie Delta and the Mackenzie Valley include Aboriginal and non-Aboriginal residents, businesses and tourists.

Granular resources were discussed during three days of hearings and at many Community Hearings, especially in those communities closest to the Project's proposed borrow pit and quarry sites.

In response to the Environmental Impact Statement's (EIS's) Terms of Reference, the Proponents identified existing oil and gas and mining activities in the Project Review Area. However, no issues were raised by participants in this regard, and the Panel agrees with the Proponents' assessment that Project impacts on oil and gas and mining activities in the Project Review Area would not likely be significant.

Timber resources were discussed during four days of hearings. The potential impact of the Project on local timber resources was also discussed at several Community Hearings in the Northwest Territories (NWT). The Panel heard from several Dehcho communities that have sawmills or that plan to acquire timber-processing equipment.

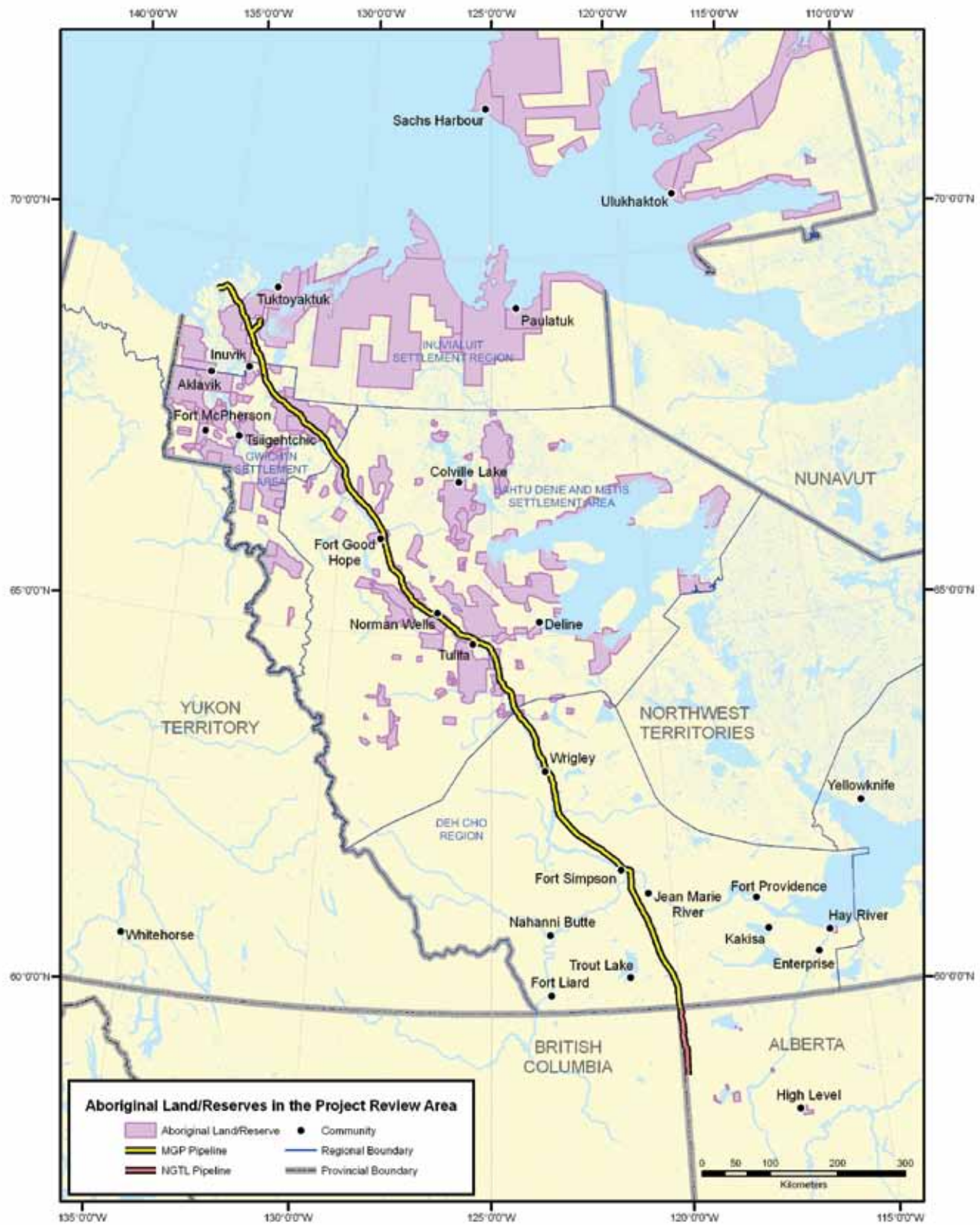
Heritage and historical resources were discussed during a single day of hearings. The potential impact of the Project on these resources was also noted at several Community Hearings, and evidence was also presented in Traditional Knowledge studies completed by the Inuvialuit, the Gwich'in, the Sahtu Dene and Métis, the Dehcho First Nations, and the Dene Tha' First Nation of northwest Alberta.

13.2 LAND OWNERSHIP AND ACCESS

13.2.1 EXISTING CONDITIONS

The lands on which the three Anchor Fields, the Mackenzie Gathering System, the Mackenzie Valley Pipeline and the Northwest Alberta

Figure 13-1 Aboriginal Private Lands and Reserves in the Project Review Area



Source: Adapted from maps provided by INAC

Facilities would be located fall into two broad categories of ownership:

- Aboriginal private lands, which are lands owned and administered by the Aboriginal land administration or land corporation within their respective land claim settlement region or land claim settlement area;
- public lands, which include:
 - federal Crown lands administered by Indian and Northern Affairs Canada (INAC) (also referred to as “territorial lands” in the *Territorial Lands Act*);
 - municipal lands administered by the Government of the Northwest Territories (GNWT) or local municipality;
 - Commissioner’s lands administered by the GNWT; and
 - provincial Crown lands or Alberta public lands administered by Alberta Sustainable Resource Development.

Figure 13-1 shows the distribution of Aboriginal private lands in the NWT and reserves in the NWT and northwest Alberta. The Dene Tha’ First Nation has several reserves within the Project Review Area, but none of the proposed Northwest Alberta Facilities are located on the Dene Tha’ First Nation’s reserves.

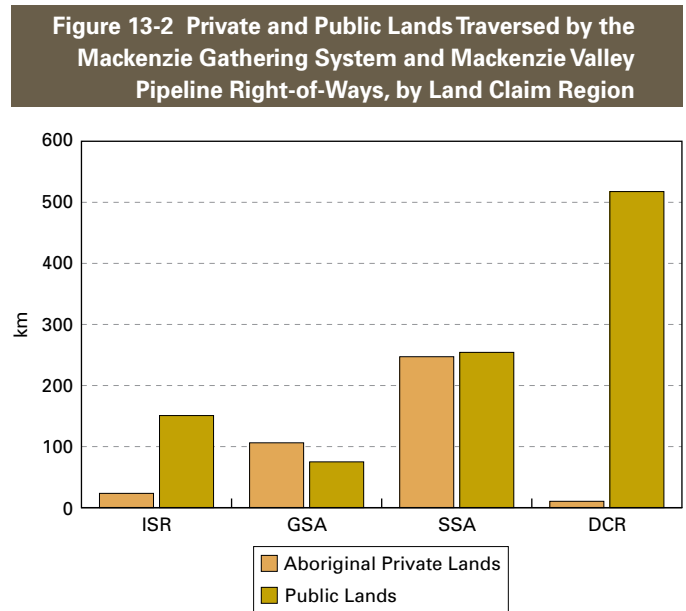
With the settlement of Aboriginal land claims between Canada and the Inuvialuit in 1984, the Gwich’in in 1992 and the Sahtu Dene and Métis in 1993, these claimant groups established private land corporations to hold title to their own lands and, together with Canada, in the Gwich’in Settlement Area (GSA) and the Sahtu Settlement Area (SSA) established resource management boards and land use planning boards. These boards are institutions of public governance that have jurisdiction over all public Crown lands in the respective settlement regions and have formal linkages to regional regulatory and impact assessment boards that have jurisdiction throughout the Mackenzie Valley.

In regions that have settled land claims in the NWT, Aboriginal land corporations are responsible for permitting land uses, such as for the Project’s right-of-way and facilities, on their private lands. Each land claim organization has established administrative procedures by which application can be made to access that organization’s Aboriginal private lands. In instances where developers need to cross Aboriginal private lands to access granular, timber, oil and gas, or mineral resources, negotiation of an Access Agreement between the developer and the Aboriginal authority is required.

13.2.2 PROPONENTS’ VIEWS

In total, the Mackenzie Gas Project and the Northwest Alberta Facilities right-of-ways would cross 1,488 km in the NWT and Alberta. Overall, about 26% of the combined pipeline right-of-ways would be located on Aboriginal private lands, with the greatest percentage on Aboriginal lands in the GSA (58%) and the SSA (49%). In the Inuvialuit Settlement Region (ISR), the percentage is 13%; in the Dehcho Region (DCR), it is 2%. The Panel also notes that the Mackenzie Valley Pipeline route would traverse 528 km of land in the DCR, the longest distance for any region in the Project Review Area.

Figure 13-2 shows the amount of private and public lands traversed by the Mackenzie Gathering System and the Mackenzie Valley Pipeline right-of-ways, by land claim region.



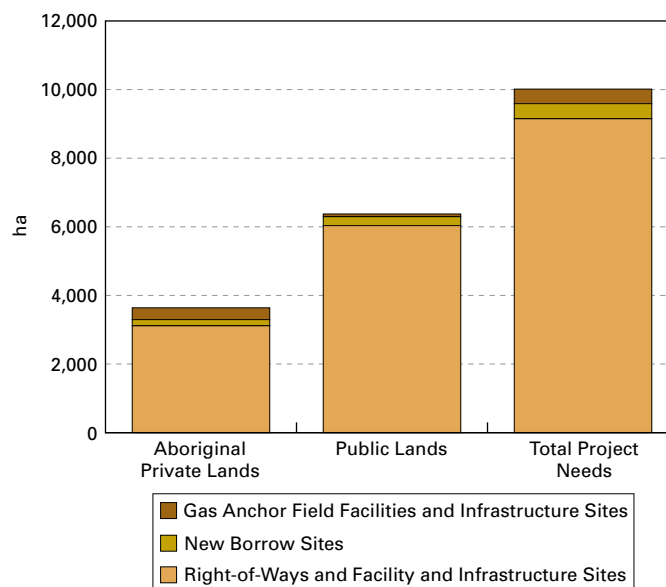
Source: Adapted from J-IORVL-00953, Tables 3-1 and 3-2, pp. 1–2

As there is no settled land claim in the DCR, there are currently no Dehcho First Nations private lands that would be crossed by the proposed pipeline. However, about 10 km of Sahtu private lands within the DCR would be traversed by the pipeline.

About 36% of the total land area that would be used for long-term Project right-of-ways, and facility and infrastructure sites would be on Aboriginal private lands (see Figure 13-3 and Table 13-1).

The Proponents indicated that there were no zoning conflicts with Project facilities proposed for Inuvik, Fort Good Hope, Norman Wells, Fort Simpson and Hay River. However, the Proponents would require a variance from the Gwich'in Land Use Plan for the pipeline routing in the Travaillant Lake area. NGTL also expects to receive necessary permissions from the Government of Alberta for facilities located on provincial Crown lands.

Figure 13-3 Land Ownership of the Mackenzie Gas Project Right-of-Ways and Facility and Infrastructure Sites (Project as Filed)



Source: Adapted from J-IORVL-00953, Tables 1-2, 1-3, 1-4 and 1-5, pp. 22–25

Table 13-1 Land Ownership of the Mackenzie Gas Project Right-of-Ways and Facility and Infrastructure Sites (Project as Filed)

Region	Long-Term and Permanent Area Requirements ¹			
	Aboriginal Private Lands (ha)	Crown Lands ² (ha)	Total (ha)	Aboriginal Private Lands (% of Total)
Anchor Field Facilities and Infrastructure Sites ³	345	79	424	81.4
Project Right-of-Ways and Facility and Infrastructure Sites ⁴	3,115	6,035	9,150	34.0
New Borrow Sites ⁵	180	260	440	40.9
Totals	3,640	6,374	10,014	36.0

Notes:

1. These figures do not include temporary facilities such as winter roads required during construction, barge landing areas, construction camps or storage areas.
2. Includes federal Crown lands, municipal lands and Commissioner's lands.
3. Includes lands required for permanent facilities at the Niglintgak, Taglu and Parsons Lake Anchor Fields, including the airstrips at Taglu and Parsons Lake and the Pete's Creek winter haul road.
4. Includes lands required for the Mackenzie Gathering System and Mackenzie Valley Pipeline right-of-ways and permanent facilities at the Storm Hills Pigging Facility, the Inuvik Area Facility, the compressor stations at Loon River, Great Bear River and River Between Two Mountains, the Norman Wells Interconnect Facilities and the Trout River Heater Station.
5. Proponents estimate each new borrow site area would cover an average of 10 ha (see EIS V2, p. 7–2).

Source: Adapted from J-IORVL-00953, Tables 1-2, 1-3, 1-4 and 1-5, pp. 22–25

13.2.3 PARTICIPANTS' VIEWS

In the settled land claim areas, community leaders and residents commented on the beneficial impacts of a settled land claim. The Aklavik Indian Band stated:

Today there is certainty to land ownership and the Inuvialuit, the Gwich'in and Sahtu each have a Land Claim Agreement that allows them to participate and set conditions for any major project on their lands. The power of these land claim agreements triggers certain processes when major development occurs... Our Land Claim Agreement truly demonstrated power when development is proposed on our lands. This is the authority and powers our past leaders and Elders talked about to Thomas Berger. This is what they wanted in 1970. They wanted ownership to the land and the ability to set conditions on future development on those lands. (Chief Charlie Furlong, HT V97, pp. 9752–53)

A different sentiment was expressed by leaders in the DCR, where an agreement has not been concluded on land claims. The Liidlii Kue First Nation in Fort Simpson presented its concerns regarding land ownership in the DCR:

So why are we here again talking about all the things that we have been saying since the government in Canada has been coming to us in their many ways to take our lands? Because we have an obligation to ourselves, our lands, our future generations, to do what we can to let you know that we still do not agree with Canada and the industrial interest taking action on our lands without our consent. (Chief Keyna Norwegian, HT V25, p. 2251)

The Dehcho Naxehcho (Elders) recommended delaying development of the Project and withholding any rights for pipeline access onto Dehcho lands until the Deh Cho Process has been successfully concluded. They requested that this be done before any final decisions are issued authorizing construction of the Project. The Dehcho Elders also recommended that the Dehcho Land Use Plan be formally adopted and implemented by the Government of Canada and the GNWT before the pipeline is allowed to proceed.

A similar view was presented by the Pehdzeh Ki First Nation in Wrigley. It recommended that the National Energy Board not issue a Certificate of Public Convenience and Necessity to the Project until the Deh Cho Process and Dehcho Land Use Plan have been approved and implemented.

In response to the Dehcho Elders and the Pehdzeh Ki First Nation, the Government of Canada and the GWNT emphasized that the Deh Cho Process negotiations are ongoing and that the conclusion of negotiations should not be a condition precedent for Project approval. As well, governments and the Proponents responded that completion or approval of a particular land use plan should not be a condition precedent for Project approval.

Jim Antoine, former Premier of the NWT and former Member of the Legislative Assembly for Nahendeh, noted:

With an unsettled claim... the Deh Cho Dene and Métis are caught in a very tough legal situation... It's a difficult position because the proponents and their own advisors have to go by what they're told... As the Dene people here, we believe this — all this land is ours, and all the resource on it is ours. And that is what we're dealing with the federal government on in terms of the Deh Cho Process. (HT V25, p. 2276)

Mr. Antoine concluded:

It would be ideal to finish the Deh Cho process negotiations before this pipeline gets built... However, if that doesn't happen, then the situation in the Deh Cho gets even more political, because here a major project — the pipeline is going to be crossing the Deh Cho territory, which is under negotiations through the Deh Cho Process. (HT V25, p. 2289)

The North Slave Metis Alliance (NSMA) told the Panel that it has Aboriginal and treaty rights that extend into the Mackenzie Valley and that it had “not been consulted” in relation to the Project and had “not even been considered in the assessment of cultural or socioeconomic impacts” and that “this needs to change in order for us to consent to the project going ahead.” (J-NSMA-00029, p. 7) The NSMA, which is not engaged in a land claim negotiation process with the Government of Canada, recommended that the Panel recommend that the NSMA have “an established land claims process.” (J-NMSA-00029, p. 4)

During the review, the Government of Canada told the Panel that it had established the Mackenzie Gas Project Crown Consultation Unit (CCU) to provide a mechanism for Aboriginal groups who claim Aboriginal rights pursuant to section 35 of the *Constitution Act* that might be adversely affected by the Project, and that those concerns would be communicated to the government and to the National Energy Board. INAC indicated to the Panel that:

There are a number of Aboriginal groups along the proposed MGP route with existing s. 35 rights. These range from groups with rights outlined in comprehensive land claims agreements protected by s. 35(3) of the *Constitution Act, 1982*; to Aboriginal groups who are signatories to Treaty 8 or Treaty 11. In addition, there are Aboriginal groups who assert claims of aboriginal rights and title to areas potentially impacted by the MGP. Canada acknowledges that it has a legal obligation to consult and, where appropriate, accommodate Aboriginal groups where it has knowledge of the potential existence of Aboriginal rights and contemplates conduct that might adversely impact on those rights. Canada intends to fulfill its legal obligations and further the ongoing goal of reconciliation with Aboriginal peoples. (J-INAC-00016, p. 4)

13.2.4 PANEL VIEWS

The Proponents would be required to negotiate Access Agreements with the appropriate Aboriginal authorities where access to Project facilities, infrastructure sites or right-of-ways requires crossing Aboriginal private lands. The Panel understands that these negotiations have been initiated and, if not already concluded, are ongoing.

The Panel notes concerns that, in the absence of a completed settlement agreement under the Deh Cho Process or an approved land use plan in the DCR, Aboriginal interests in managing and protecting traditional and non-traditional land uses and land access in the DCR may not be fully realized.

The Panel is of the view that the Deh Cho Process land claim negotiations between the Dehcho First Nations, the Government of Canada and the GNWT should continue to be of the highest priority to all negotiating parties. However, the Panel agrees with the Government of Canada and the GNWT that final approval and implementation of a land claim agreement with the Dehcho First Nations should not be a condition precedent for Project approval.

The Panel also notes that the Proponents have agreed to enter into a negotiation process with the Dehcho First Nations with regard to concluding an agreement on access.

With respect to the recommendations of the NSMA, the Panel has described Project-related impacts that are within its jurisdiction based on the evidence that was presented to it from participants in the review. The Panel notes that the NSMA filed its official bylaws with the Panel and that these bylaws restrict membership in the organization to those persons who are “descended from Aboriginal people who resided in, or used and occupied, the North Slave Region prior to January 1, 1921.” (J-NSMA-00031, p. 3) The North Slave Region was not considered by the Proponents to be within any of its regional study areas identified for assessing Project-related impacts on the biophysical environment or on land access.

13.3 GRANULAR RESOURCES

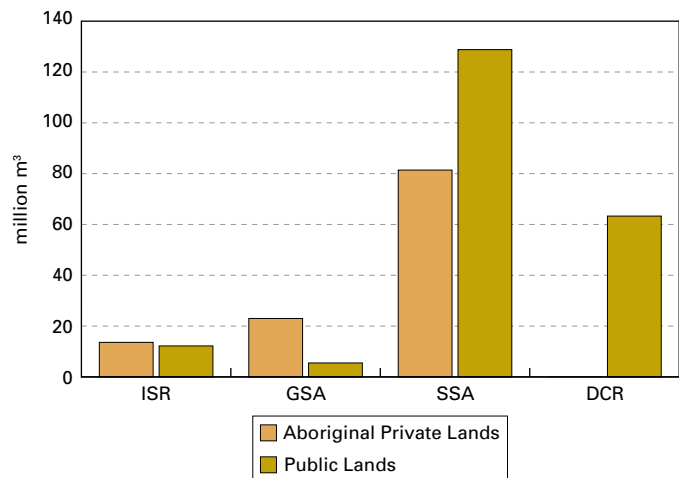
13.3.1 EXISTING CONDITIONS

Granular resource sites on federal Crown lands in the NWT are managed by INAC.

The Inuvialuit, Gwich'in and Sahtu Dene and Métis each own and manage granular resources found on their respective private lands. Figure 13-4 summarizes the estimated granular supply in the various regions according to the Proponents.

The GNWT's Department of Transportation noted that NWT communities are faced with unique challenges with respect to

Figure 13-4 Estimated Granular Supply (million m³) on Aboriginal Private Lands and Public Lands by Region



Source: Adapted from J-IORVL-00953, Tables 8-1 to 8-5; J-IORVL-00436, pp. 14–19

finding and maintaining adequate supplies of granular materials. These include the long distance and seasonal access to potential granular sources and high development costs. Inequalities exist between communities in terms of access to and availability of granular materials. Once a proven granular source has been depleted, accessing and developing an alternative site is often difficult and costly.

According to the GNWT's Department of Transportation, granular resource demand for non-tax-based NWT communities was about 1.5 million m³ between 2000 and 2005. The GNWT also noted that future transportation projects, such as the all-weather road between Inuvik and Tuktoyaktuk, would require about 4 million m³ of granular material, and the Mackenzie Highway extension from Wrigley to the Sahtu communities would require about 10 million m³ of granular material.

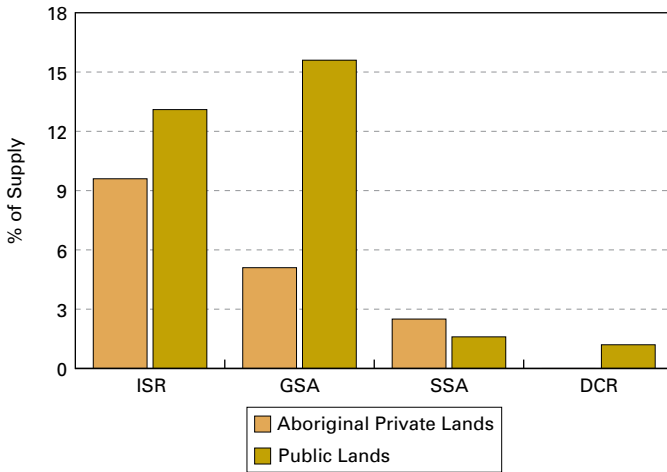
Under the *Inuvialuit Final Agreement*, sufficient supplies of sand and gravel of appropriate quality and within reasonable transport distances to communities are to be reserved to meet community needs, based on reasonable 20-year forecasts of volumes required from Inuvialuit lands.

13.3.2 PROPONENTS' VIEWS

Borrow material — sand, gravel and crushed rock — is the largest single material input by volume required by the Project. Table 2-2 in Chapter 2, “Project Description,” provides an overview of the proposed primary borrow site requirements by Project component and by region.

Figure 13-5 provides a region-by-region overview of the estimated Project needs as a percentage of existing granular supply. The total estimated supply at primary sites is more than 300 million m³ of material (more than 118 million m³ on

Figure 13-5 Estimated Project Needs as a Percentage of Existing Granular Supply on Aboriginal Private Lands and Public Lands by Region



Source: Adapted from J-IORVL-00953, Tables 8-1 to 8-5; J-IORVL-00436, pp. 14–19

Aboriginal private lands and more than 209 million m³ on public lands). Estimated Project needs for granular material (excavated volumes) are in the order of 10 million m³, of which 4.6 million m³ (46%) would be from primary borrow pit and quarry sources on Aboriginal private lands in the NWT.

Approximately 2.9 million m³ of granular material would be excavated in the ISR (29% of estimated Project needs), with 1.3 million m³ of granular material being sourced from Inuvialuit private lands and more than 1.6 million m³ from public lands. This represents almost 10% of the estimated granular resource supply on Inuvialuit private lands and 13.1% of the estimated granular supply on public lands in the ISR.

Over 2 million m³ of total granular material would be excavated in the GSA, with more than half of volumes required by the Project being extracted from granular resource sites on Gwich'in private lands. This would represent about 5% of the known granular resource supply on Gwich'in private lands. The Project's granular requirements from public lands is substantial when compared with the available supply, as more than 15% of the known supply in the GSA would be consumed by the Project. The Proponents indicated that some infrastructure pads, such as the Campbell Lake camp, could be decommissioned after construction, and the gravel could be used again for other projects or by communities.

According to information provided by the Proponents:

- 3 of the 8 primary sites in the ISR would be new borrow or quarry sites;
- 6 of 11 primary sites in the GSA would be new;
- 24 of the 30 primary sites in the SSA would be new; and
- 10 of the 20 primary sites in the DCR would be new.

In total, 43 of the 69 primary sites (62%) identified by the Proponents would be new borrow sites.

The 2,000 m³ of gravel required for the Northwest Alberta Facilities would come from existing pits near those facilities.

During the Project's operations, additional granular resources would be required periodically for maintenance and repairs. The Proponents indicated that operational requirements for the Project, over 25 years of operating life, are estimated at 5,000 m³ of granular material per year. According to the Proponents, construction of the Mackenzie Gathering System and pipeline right-of-ways and new access roads would open up access to new areas that could lead to improved community or regional access to granular resources. Project construction activities could also block access to existing granular operations in the Project Review Area. Project impacts would be adverse only if existing operations are temporarily closed or inaccessible for community use during the Project's construction phase.

The Proponents also indicated that some infrastructure pads could be decommissioned after construction and that the gravel could be either reused for other projects or by communities, or be left in place. According to the Proponents, most borrow material used for facilities and the remaining infrastructure sites could become available for reuse by communities or others following decommissioning.

The Proponents acknowledged that construction of the Project would greatly increase the number of active borrow sites. Other existing developments in the Project Review Area, such as roads, bridges and well sites, could occasionally require granular material for maintenance purposes. This requirement, combined with Project requirements, could lead to cumulative impacts on available granular resources. The Proponents indicated that reasonably foreseeable projects requiring granular resources included the construction of 23 bridges along the Mackenzie Highway winter road. The Proponents stated that the use of granular resources for those projects in conjunction with Project needs would have an adverse cumulative impact on the total amount of granular material available.

The Proponents conducted consultations with the communities of Tuktoyaktuk, Inuvik, Fort Good Hope, Norman Wells, Tulita, Wrigley, Jean Marie River and Trout Lake regarding potential impacts of the Project on existing community granular resource operations. Based on these discussions, the Proponents decided in several instances not to use existing borrow sites that are being used to support ongoing community maintenance and construction needs.

The Proponents also acknowledged that development of up to three new borrow sites for fill material at the proposed Great Bear River compressor station could result in increased adverse impacts on the supply of granular material for the community of Tulita.

In response to questioning, the Proponents stated that compressor station granular requirements are site-dependent. For example, 70,000 m³ of granular material would be needed for construction of the Loon River compressor station, but 370,000 m³ of material would be required for the Great Bear River compressor station. The Proponents indicated that a “very, very preliminary estimate” of an additional 2.2 million m³ of granular material would be needed to support construction of an additional 11 compressor stations on the Mackenzie Valley Pipeline. (Rick Luckasavitch, HT V11, p. 1068) On further questioning from the Panel regarding the quality of granular material required for the compressor station pads, the Proponents stated that higher-quality material would be required for topping and that the base material could be of a lesser grade.

The Proponents did not assess the cumulative impacts on loss of granular resources or changes to granular resource operations for the Expansion Capacity Scenario. That scenario would also have to consider the granular resources required to develop new gas fields in the NWT to support a fully expanded pipeline with a throughput of 1.8 Bcf/d.

With respect to use of granular resources for the Project, the Proponents committed to:

- preparing granular resource plans, also known as pit or quarry development plans (as some of the granular resource plans would be proprietary, the landowner’s permission would be required before the Proponents could release the plans to any other party);
- negotiating compensation with granular resource owners, where required, for removing granular resources from their lands;
- making available to the GNWT and Aboriginal authorities, prior to and during construction, and from time to time upon request, information that the Proponents acquire regarding the locations, extent and quality of any granular resources within Project borrow sites in the NWT, subject to receipt of any necessary approvals from the owners of such resources and information;
- discussing with the GNWT and Aboriginal authorities opportunities to transfer interests that the operators hold in borrow sites and have identified for transfer (any such transfer will be subject to receipt of any approvals required pursuant to applicable regulations and to the execution of an agreement on reasonable commercial assignment terms, which may include terms addressing consideration and appropriate releases and indemnities);
- incorporating local cultural, land use and environmental principles into Project planning and implementation decisions regarding borrow sites; and
- tracking quantities of borrow material used from a specific location.

The Proponents concluded that, although some granular materials would be permanently removed from availability, the overall impact of a long-term loss of gravel would be reduced because of positive economic impact and opportunity for relatively easily accessible granular materials following decommissioning. The Proponents stated that no impacts are expected on granular resources in northwest Alberta.

13.3.3 PARTICIPANTS’ VIEWS AND RECOMMENDATIONS

ACCESS AND USE OF GRANULAR RESOURCES BY COMPETING INTERESTS

INAC responded to the Proponents’ claims that the Project’s granular resource demands are small in relation to existing availability by noting that it is not the overall amount required that is the key issue but the location of specific sources of supply in relation to specific locations of demand. INAC also indicated that borrow materials are plentiful in some areas and not in others, and that the location of competing demands on these resources is also variable.

Robert Gruben of the Tuktoyaktuk Community Corporation emphasized the need to protect existing granular resource sites in the Tuktoyaktuk area when he stated:

I would like to know, with all the gravel that is taken out of our ISR and the surrounding Crown lands, what effects that will have on our opportunity which, right now, is at a serious need for gravel. And to have all that good gravel taken out before we can access it is really doing an injustice to this community. We need that gravel, but if that gravel is going to be given to the proponents, something in its place has got to be made for the community of Tuktoyaktuk. (HT V98, p. 9780)

The GNWT stated that the use of the Yaya Lakes pit would have to be examined very carefully because the community of Tuktoyaktuk relies on that source, especially for select grade material for its roads.

The Pehdzeh Ki First Nation noted that, with respect to the Project’s proposed borrow pits near the community of Wrigley, some pits are to be preserved for community use. The Pehdzeh Ki First Nation recommended that the Proponents not use any granular material within 50 km of the community. The Proponents stated:

Without knowing whether we have got sufficient material in alternate sites, we are not in a position to make any decisions around what sites we could get by with. We may, in fact, after conducting a winter geotechnical investigation, find out that we could accommodate a number of the concerns that Pehdzeh Ki have mentioned to us. But in the absence of that information, we just don’t know whether there’s sufficient granular material in some of the sites. (Randy Ottenbreit, HT V27, p. 2480)

At a Community Hearing in Norman Wells, the mayor of that community stated that “development of the potential quarry sites identified on our western boundary by the proponent will be actively opposed by the Town.” (Her Worship Ann Marie Tout, HT V20, p. 1932) In reply, the Proponents stated: “Quarry sites, pipe storage areas, and camp locations for the project construction activities are the subject of ongoing discussions. We are mindful of that and we will fully consider the Town’s stated preferences.” (Ottenbreit, HT V20, p. 1935)

BORROW SITE ABANDONMENT AND RECLAMATION PLANS

In response to a query from the GNWT regarding possible community use of borrow sites no longer required by the Project, INAC indicated that borrow site abandonment plans would be reviewed on a case-by-case basis. INAC also stated that pit closure may make it more difficult to recover granular material from that site at a later date.

The Tuktoyaktuk Hunters and Trappers Committee queried the Proponents regarding the reclamation of the Yaya River infrastructure site. The Proponents indicated that pit development plans, including abandonment and reclamation plans, include a commitment by the Proponents to consult on what would specifically happen at that site.

MANAGEMENT OF GRANULAR RESOURCES

INAC recommended that the Proponents prepare a Granular Management Plan for the Project. This would include a decision tree on choosing sites, conservation measures and impact mitigation. According to INAC, such a plan is not required for permitting the Project but would assist in providing a framework for it. In response, the Proponents’ legal counsel noted that information with respect to site development, abandonment and reclamation matters is normally contained in land use permit applications. The Proponents’ legal counsel concluded: “Assuming that there will be further discussions between INAC and the proponent with respect to this issue...I think the proponent is certainly prepared to work with INAC to provide certain information in a plan.” (Don Davies, HT V12, pp. 1220–21)

The GNWT recommended that the Proponents prepare a Sustainability Plan for Granular Resources prior to construction. It proposed that the plan address the present and future needs of the GNWT, NWT municipalities, Aboriginal authorities and the public interest. The plan would also identify the best use of each borrow site that the Proponents intend to use and provide an update of the Proponents’ granular resource information. In response to this recommendation, the Proponents replied: “We recognize and support the value of this plan but believe this is a government responsibility. In support of this plan, we will certainly continue to share information with the GNWT.” (Arnold Martinson, HT V12, p. 1244)

The Panel queried the GNWT as to whether it and INAC had discussed the possibility of having a unified granular management plan prepared to meet the interests and needs of both parties. The GNWT replied that such a discussion had not been held with INAC but that it would be an obvious area of discussion between them.

13.3.4 PANEL VIEWS AND RECOMMENDATIONS

SUPPLY AND AVAILABILITY OF GRANULAR RESOURCES

The Panel notes that northern communities face considerable challenges in accessing and developing local granular resources. Although some participants indicated their concerns regarding potential impacts to existing granular extraction operations, the Proponents’ consultation efforts during the hearings aided in reducing the number of outstanding community concerns. The Panel also notes that the Proponents’ activities could make available new sources of granular resources for community use.

The Project would require the excavation of some 2.9 million m³ of granular material from borrow sites on Inuvialuit private lands and on public lands in the ISR. This represents more than 11% of the estimated supply of granular resources in the region. The Panel also notes that this does not include additional granular material that would be required to develop any new gas fields in the Mackenzie Delta to support incremental gas volumes beyond the 0.83 Bcf/d from the Anchor Fields.

Based on the evidence before the Panel for the Expansion Capacity Scenario and other future developments, it appears that, with developments beyond the Project as Filed, the loss of granular resources could, in some community and regional situations, be significant and irreversible if extraction of the resource is not properly managed.

The Panel was not presented with any evidence of established impact thresholds with which to compare the predicted impacts of either the activities that would expand the throughput of the Project beyond 1.2 Bcf/d or the activities associated with other future developments on granular resources in the NWT. The Panel is of the view that this type of information should come from resource managers. Nonetheless, in taking a precautionary approach, the Panel concludes that the granular resource requirements associated with other future developments could have a significant impact on the loss of granular resources in the ISR and perhaps the GSA. The impacts of the loss of granular resources associated with other future developments could be irreversible.

RECOVERY AND REUSE OF GRANULAR RESOURCES

The Panel is of the view that some of the granular resources at Project facilities and infrastructure sites might, over a period of more than 20 years of ongoing operations, become inadvertently contaminated (e.g. leaks of oil, fuel and glycols from vehicles, equipment and machinery), making the granular materials unsuitable for recovery and reuse by local NWT communities.

The Panel also notes that, in some instances, the long distances between facilities, infrastructure sites and communities would make recovery and reuse of the granular materials uneconomic when the full cost of materials recovery and transportation is considered. The Proponents did not provide the Panel with any information regarding the feasibility of granular recovery and reuse or an estimate of the volume of potentially recoverable granular materials that might be available following abandonment of Project facilities and infrastructure sites. As a result, the Panel is not persuaded that the granular material used for some Project construction camps, well-site pads, operational facility pads and major infrastructure sites (including the proposed airstrips at Taglu and Parsons Lake) would be easily recoverable for alternative uses by local NWT communities or government.

The Panel concludes that there is little or no potential legacy in recovery or reuse of granular resources at Project facilities and infrastructure sites.

CUMULATIVE IMPACTS

The Panel notes that the granular resource requirements of the Project in the ISR (3 million m³) added to those of a future highway from Inuvik to Tuktoyaktuk (4 million m³) would deplete more than 25% of the total known granular resources in the region.

The Panel is of the view that granular resource managers should consider the cumulative impacts on the loss of granular resources in the ISR as it is the most likely candidate area for activities that would expand the throughput of the Project beyond 1.2 Bcf/d.

MANAGEMENT OF GRANULAR RESOURCES

The Panel agrees that a plan is required to address the long-term development and use of granular resources in the Project Review Area. The Panel also agrees that the supply of granular resources has the potential to become a significant regional issue in the ISR under the Expansion Capacity Scenario and, if not managed properly, to become a significant regional and community issue in the ISR and GSA for activities associated with other future developments. The responsibility for the management and use of granular resources in the NWT is, in the Panel's view, that of government.

The Panel is of the view that, similar to the assessment of the impacts of the Project on granular resources in the Expansion Capacity Scenario and Other Future Scenarios, there is a need for granular resource managers to consider impact thresholds.

RECOMMENDATION 13-1

The Panel recommends that:

- (a) *No pit or quarry permit in the Northwest Territories be issued to the Proponents in relation to the Mackenzie Gas Project by Indian and Northern Affairs Canada or any Aboriginal or private land owner until the Proponents file with the landowner geotechnical information and a Pit or Quarry Management Plan for each borrow pit or quarry from which they intend to extract granular resources for the Mackenzie Gas Project.*
- (b) *Indian and Northern Affairs Canada develop a Granular Management Plan that includes the Inuvialuit Settlement Region, the Gwich'in Settlement Area, the Sahtu Settlement Area and the Dehcho Region using information obtained in Panel Recommendation 13-1(a) as well as existing information. The Granular Management Plan must be developed in consultation with owners of Aboriginal private lands and the Government of the Northwest Territories and be endorsed by the Government of the Northwest Territories. The Granular Management Plan is to be developed within two years of the date of the Government Response to the Panel's Report.*
- (c) *The Granular Management Plan be based on the following principles:*
 - *granular resources are finite and non-renewable;*
 - *granular resources must be managed according to impact thresholds; and*
 - *priority allocations be given to Northwest Territories community and regional needs.*
- (d) *Following completion of the Granular Management Plan in Panel Recommendation 13-1(b), Indian and Northern Affairs Canada and any Aboriginal or private land owner issue only a pit or quarry permit for granular resources in the Mackenzie Delta or Mackenzie Valley that is informed by, and consistent with, the Granular Management Plan.*
- (e) *Indian and Northern Affairs Canada, in consultation with owners of Aboriginal private lands and the Government of the Northwest Territories, maintain and update its granular resource database and the Granular Management Plan identified in Panel Recommendation 13-1(b) at least every five years.*

For greater certainty, the Panel recommends the following.

RECOMMENDATION 13-2

The Panel recommends that the National Energy Board not approve any facility that would enable the throughput of the Mackenzie Valley Pipeline to be increased above 1.2 Bcf/d until the Granular Management Plan in Panel Recommendation 13-1(b) is completed.

13.4 TIMBER RESOURCES

13.4.1 EXISTING CONDITIONS

The role of the GNWT as forest manager is to assist in conserving and managing the forest resource. The NWT *Forest Management Act* and *Forest Management Regulations* provide the legislative framework that applies to proposed timber-clearing activities on Crown lands. Timber authorizations address the GNWT requirement to manage sustainability issues, harvesting impacts, impact mitigation and monitoring, and community concerns. Appropriate authorizations are required before commencing any timber harvesting or clearing, transporting timber off of the licence or permit area, and milling more than 300 m³ of timber annually. A stumpage charge and a reforestation charge are levied on timber-cutting permits or licences issued to industrial forestry proponents. At the time of the hearing, there was no stumpage charge for non-forestry related timber clearing. The GNWT does not regulate timber cutting on private lands.

The contents of an application for a timber-clearing permit under the NWT *Forest Management Regulations* must include:

- the location and volume of merchantable timber to be harvested;
- a timber-cutting, transportation and salvage management plan; and
- a disposal plan, including details on burning and fire suppression.

The GNWT advised that it is in the process of introducing new forestry regulations that would address the incidental cutting of timber while carrying out a non-forestry-related industrial activity such as clearing a pipeline right-of-way. Fees for such a permit would be area-based instead of volume-based. In response to a query from the Proponents regarding the current status of the draft forestry regulations, the GNWT replied:

The authorization has not been formally named at this point. We are presently using the working title of Incidental Timber Permit internally. I do not know the date we expect it to become law. It is presently at Justice in a drafting stage. In regards to the jurisdiction it will cover, it will cover Crown and Commissioner's land. It will not cover private or ISR lands. (Tom Lakusta, HT V95, p. 9607)

The Proponents submitted a *Timber Atlas* to show the location of merchantable timber in the Regional Study Area. The Proponents indicated that the *Timber Atlas* would be updated in conjunction with the application for timber permits from the GNWT.

The Proponents estimated the existing merchantable timber inventory in the Project's Regional Study Area to be 2.2 million m³.

In response to a query as to whether any surveys had been completed to determine the volume of merchantable timber in the northwest Alberta Regional Study Area, a representative of NGTL stated, "I would expect that we would carry out those surveys the year prior to construction...when the data would be current as to the conditions along the right-of-way and any other disturbances or forest harvesting that has gone on." (Karen Etherington, HT V42, p. 3967)

The local use of timber is generally limited to small-scale harvesting for fuel and small commercial operations such as sawmills.

Most of the ISR is north of the treeline and has insufficient timber resources for commercial operation within the Regional Study Area. Timber harvesting for firewood is conducted near Inuvik. A portable sawmill in Inuvik processes less than 20 m³ of wood per year to meet local demands for small construction projects requiring timber.

In the GSA, no commercial timber harvesting currently occurs, but wood is harvested for fuel. Given the limited resource in the region, future expansion of timber harvesting in the Regional Study Area is unlikely. Three sawmills in the region each process less than 20 m³ of wood per year for small local projects.

There are no major timber-harvesting operations in the SSA part of the Regional Study Area. Each community has a small lumber mill to process timber for local use. Residents harvest fuel wood along the winter road throughout the SSA.

There are no major timber-harvesting operations in the DCR part of the Regional Study Area. A small community lumber mill and log home operation are run in Jean Marie River. DCR residents harvest fuel wood throughout the region, using the highways and winter roads for access. The GNWT indicated that long-term sawmilling capacity and use in the DCR has been between 1,000 m³ and 10,000 m³ per year. The GNWT noted that, in the late 1990s, forestry companies in northern British Columbia entered into industrial agreements and licences to harvest timber in the Liard River Valley. It was considered a one-time event.

In 2003, the Dehcho Land Use Planning Committee commissioned an analysis of timber potential in the region. According to that analysis, most lands traversed by the proposed pipeline have a timber productivity rating of less than 40%. The study also indicated that levels of timber harvesting between 1990 and 1999 in the DCR ranged from about 50,000 m³ to almost 200,000 m³ per year.

The northwest Alberta Regional Study Area is within the Government of Alberta's Forest Management Unit 20, but no forest management agreements are in place in the vicinity of the Northwest Alberta Facilities.

13.4.2 PROPONENTS' VIEWS

According to the Proponents, more than 64,000 m³ of merchantable timber would be cleared from the Project footprint for the right-of-way. They also estimate that about 85% (54,600 m³) of the cleared timber would be from merchantable coniferous stands.

The GNWT questioned the Proponents' merchantable timber assessment methodology and results as presented in the *Timber Atlas*. The GNWT stated that the Proponents' aerial photo interpretation process did not meet GNWT standards and, as a result, areas of productive forest and tree heights were underestimated in the Regional Study Area.

The Proponents initially estimated that 53,000 m³ of merchantable timber would be cleared during the Project's construction phase. At a hearing in 2006, the Proponents' estimate of cleared merchantable timber was increased to 70,900 m³. By May 2007, the Proponents' estimate was again changed, this time to 64,000 m³. The Proponents' consultant acknowledged there had been calculation errors and under-reporting of cleared volumes outside the pipeline right-of-way in the previous evidence presented to the Panel.

The Proponents' consultants noted that merchantable stands refer to those forested communities greater than 4 ha in size that include all trees greater than 6 m tall, with a crown closure of more than 6% and having a stump diameter of at least 13 cm and top diameter of at least 7 cm. Based on aerial photography interpretation, the *Timber Atlas* provided information on tree height, canopy closure and dominant tree species. The estimated volume of each merchantable timber stand was determined using Alberta timber volume tables. The Proponents' timber estimates for the NWT were based on forest stands that have similar characteristics in northern Alberta.

The three Anchor Fields and the Mackenzie Gathering System are located within the tundra region. Virtually none of the trees cleared in this area would be of merchantable quality. During the construction phase, the following areas would be cleared of brush and trees:

- the shared Mackenzie Valley Pipeline and natural gas liquid pipeline right-of-ways (50 m wide) from the Inuvik Area Facility to Norman Wells;
- the Mackenzie Valley Pipeline right-of-way (40 m wide) from Norman Wells to the NGTL Interconnect Facility;
- the Dickins Lake Section and the Vardie River Section right-of-ways; and
- all facility and infrastructure sites in the GSA, SSA, DCR and northwest Alberta.

More than 93% (60,000 m³) of the merchantable timber that would be cleared during Project construction would come from the DCR. The actual volume of timber to be cleared would be

refined through the timber inventory and clearing permitting process.

In response to questioning as to the percentage of the 64,000 m³ of cleared merchantable timber that would be surplus to Project needs, the Proponents stated:

At this point in time, we do not have a precise number for that... There is still a fair bit of unknowns until you get on the right-of-way the year of your pipeline installation to really determine where you need to use the decked timber. (Ken Johnson, HT V95, p. 9599)

According to the Proponents, merchantable timber cleared from the right-of-way would be salvaged, where practical and where the timber is of acceptable quality, to be used for erosion control, timber rip-rap, watercourse embankment construction and temporary bridge structural components. Merchantable timber would be stockpiled for Project use in storage areas adjacent to the pipeline right-of-way. If requested, merchantable timber would also be stockpiled for community use, where practical. The Proponents noted that the timber-clearing permit from the GNWT would require all decked merchantable timber to be removed within one year. A consultant to the Proponents' indicated that the majority of the pipeline and camp skids would be sourced outside of the NWT.

NGTL committed to salvage timber for use during construction of the Northwest Alberta Facilities or where agreements have been made with the Forest Management Agreement holder, or as directed by Alberta Sustainable Resource Development.

The Proponents noted that they have not yet determined the maximum distance they are prepared to move cut merchantable timber and surplus timber products for community use. They also noted that, beyond any identified priorities for Project use and any identified community use, surplus decked merchantable timber would be burned on the pipeline right-of-way or chipped and disposed of on the pipeline right-of-way. All other timber and brush remaining from pipeline right-of-way and facility and infrastructure site-clearing activities would be burned.

The Proponents concluded that existing timber harvesting practices for local firewood supply or building materials could be disrupted because of restricted access to areas in and around facilities, infrastructure sites, borrow sites and the pipeline right-of-way during the Project's construction phase. In addition, clearing of timber along the pipeline right-of-way and infrastructure and facility sites would result in a decrease in the available supply of firewood and construction materials for residents in the Project Review Area.

The Proponents stated that installation and operation of the Northwest Alberta Facilities would have no impact on commercial forestry operations. However, clearing of timber on the Dickins Lake Section and Vardie River Section pipeline right-of-ways would decrease the available supply to residents in the Project Review Area.

Within the Project's Regional Study Area, current forestry developments and activities, combined with the Project, could lead to a decrease in total timber resources because of clearing and removal of trees during the construction phase. Hence, an adverse cumulative impact is expected on the total amount of timber resources in the Regional Study Area because of Project construction.

The Proponents told the Panel that they were not aware of any wood products used for the Project being manufactured in the NWT. They believed that pipe and camp skids could be manufactured locally. However, the Proponents stated that the contractors normally provide their own wood products and would not necessarily need to procure them in the NWT.

The Proponents stated that the Project would have the following impacts on timber resources:

- low adverse impact on the available land base for timber resources (impacts would be local in extent and would be short- to long-term in duration);
- no impact on existing forest industry practices;
- low adverse impact on existing timber harvesting practices (impacts would be regional in extent and short-term in duration); and
- no impact to a low impact on the loss of timber resources (impacts would be local to regional in extent and long-term in duration).

13.4.3 PARTICIPANTS' VIEWS AND RECOMMENDATIONS

MANAGEMENT OF TIMBER RESOURCES

The GNWT encouraged the Proponents to provide an updated *Timber Atlas* as soon as practical for the following reasons:

- the Project would clear a very large amount of wood in the NWT;
- the GNWT does not know precisely where or how much wood would ultimately be encountered; and
- the Project's forest harvest needs to be accurately estimated.

In response to a query regarding forest management challenges the Project would present, the GNWT replied:

Given what I know about the forest around Wrigley, down through the Fort Simpson area and then to the Alberta border...where it might be the thickest, it might be quite likely that every kilometre, if you're decking all the merchantable wood that you would be decking up to maybe 10 logging truckloads full of wood every kilometre, which is a significant amount of wood and would require a plan in how this wood is going to be disposed of... One of the elements that we'll be working with the proponent on will be to ensure

that the disposal mechanisms are rapid and that the wood does not stay onsite for more than a year after it's been harvested so it doesn't become an issue for spruce bark beetle or other infestation agents, and certainly not as a fire vector as well. (Lakusta, HT V95, p. 9612)

LOSS OF TIMBER RESOURCES AND SUSTAINABILITY OF THE FOREST

In response to questioning about the impact of the large volume of merchantable timber to be cleared for the right-of-way, the GNWT responded, "there is no information that I have that would indicate that the amount of wood...that will be harvested or impacted by this project will have long-term regional implications on sustainability of the forest." (Lakusta, HT V95, p. 9619)

The Dehcho Harvesters Council recommended that the value of all vegetation and timber stands to be cleared for the pipeline right-of-way should be evaluated and that First Nations be compensated for the loss of timber. The GNWT, the Government of Canada and the Proponents disagreed with the Dehcho Harvesters' recommendation. Canada and the GNWT indicated that such compensation should be part of Access and Benefits Agreement negotiations between the Proponents and Aboriginal authorities in the Project Review Area.

ACCESS TO MERCHANTABLE TIMBER FROM THE PROJECT

The Gwich'in Social and Cultural Institute recommended that trees harvested in the GSA during Project construction should be made available to Gwich'in residents to use for construction or firewood. It also recommended that the Proponents stack wood and inform the owner or user of the nearest camp if one exists within 50 km of the pipeline right-of-way. The Proponents agreed to stockpile excess merchantable timber near access roads to the pipeline right-of-way or adjacent to facility sites in the GSA.

Some groups (the Pehdzeh Ki First Nation, the Liidlii Kue First Nation and the Jean Marie River First Nation) expressed interest in acquiring access to surplus merchantable timber from the Project. The Proponents noted that, upon request and where practical, surplus merchantable timber would be stockpiled for community use and that stockpiles would be at agreed locations in the general vicinity of the area in which they were harvested.

The Dene Tha' First Nation requested information on discussions between NGTL and Tolko Industries Ltd. regarding timber harvesting in the area where the Northwest Alberta Facilities would be constructed. NGTL advised that it had initiated discussions with Tolko about the Forest Management Agreement Consent and the Consent to Withdraw. Further discussions would take place with Tolko before clearing begins on the NGTL pipeline right-of-way to coordinate delivery of any salvageable timber.

POTENTIAL COMMUNITY BUSINESS OPPORTUNITIES

The Pehdzeh Ki First Nation indicated that it was interested in pursuing a community sawmill initiative to provide lumber materials to the Project. It suggested that a contract to produce pipeline skids and stakes for the Project would be economically viable. The Pehdzeh Ki First Nation also recommended that the Proponents purchase all rough lumber and posts needed for areas within its traditional territory. The Proponents disagreed with this recommendation, stating that contracts would be awarded on the basis of best total value, but that preference would be given to regional Aboriginal businesses and northern businesses.

The Jean Marie River First Nation recommended that the Panel require the Proponents to purchase lumber and wood product from them and that the Proponents commit to negotiating clearing and timber salvage contracts along the pipeline right-of-way. The Proponents replied that contracts would be awarded on the basis of best total value, considering safety, quality, cost, schedule and content plans. Preference would be given to regional Aboriginal businesses and northern businesses. At a Community Hearing in Jean Marie River, the Proponents stated:

I don't want to leave the impression that...contractors bring[ing] their own skids would end any opportunity for us acquiring wood products from Jean Marie River. In fact, there are other wood products that we would...like to seek from Jean Marie River, and it is exactly the acquiring of those products that is at the negotiating table with the Dehgah Alliance. (Dee Brandes, HT V29, p. 2626)

The Panel queried the Jean Marie River First Nation as to its desire to obtain timber from the pipeline right-of-way as supply for the community sawmill. The Jean Marie River First Nation replied that that was an item it was trying to negotiate with the Proponents through the Dehgah Alliance Society. The Jean Marie River First Nation would like to supply other communities with dimension lumber and, if enough timber could be salvaged, that material could be also be used for log home construction.

In response to a query from the Panel regarding the local business capacity available to take advantage of the timber clearing and harvest opportunities during Project construction, the GNWT noted that there is a shortage of business capacity. However, there has been interest expressed to the GNWT that the Project might provide an opportunity to develop some forest industry opportunities for various entrepreneurs and communities.

13.4.4 PANEL VIEWS AND RECOMMENDATIONS

IMPACTS ON EXISTING TIMBER INVENTORY

The Panel notes the GNWT's position that there is no information indicating that the amount of timber to be harvested or

impacted by Project construction would have long-term regional implications on the sustainability of the forest in the NWT.

The Panel notes the GNWT's desire to have an updated *Timber Atlas* as soon as practical and encourages the Proponents to do so.

TIMBER FEES

The Panel heard that a new type of permit for industrial use of forest lands was being proposed by the GNWT. Fees for this type of permit would be based on the geographic extent of the area cut, not the volume of timber cut. The Panel is of the view that this new permit should continue to have a reforestation fee similar to that charged to a commercial forestry operator.

With respect to the Dehcho Harvesters Council's recommendation that First Nations receive compensation for the value of all vegetation and timber stands to be cleared for the Mackenzie Valley Pipeline right-of-way, the Panel understands that matters related to compensation could be part of the Access and Benefits Agreement negotiations between the Proponents and Aboriginal authorities in the NWT.

SALVAGE OF MERCHANTABLE TIMBER FOR PROJECT OR NWT COMMUNITY USE

While several communities expressed interest in accessing surplus decked merchantable timber from the Project, the overall volumes to be taken up are expected to be small, given local capacity. The Panel notes that, according to timber permit conditions, any decked timber would have to be removed from the deck site within one year, and this would be a further constraint to community access. The Panel is of the view that the clearing of merchantable timber during the Project's construction phase represents a one-time harvest that greatly exceeds the capacity of local communities to exploit.

The Panel notes that the Proponents have committed to negotiate terms for the decking of merchantable timber for community use, where practical. However, it is not clear from the Panel's record how much of Project-cleared merchantable timber would actually be salvaged for Project or community-related uses.

SALVAGE AND REUSE OF PROJECT WOOD PRODUCT FOLLOWING CONSTRUCTION

The Panel is of the view that the salvage and reuse of wood products, imported or otherwise, (e.g. pipeline skids, plywood and dimension lumber) following Project construction could represent a benefit to northern communities. However, the Panel does not know whether this benefit is captured in the Benefits Agreements being negotiated between the Proponents and NWT Aboriginal groups. As well, the proximity of the Proponents' reusable wood product storage areas to Project Review Area communities would be an important economic factor to be considered by the Proponents and local communities.

The Panel makes the following recommendations with respect to timber resources.

RECOMMENDATION 13-3

The Panel recommends that the National Energy Board, as a condition of any certificate or approvals it might issue in relation to the Mackenzie Gas Project, require the Proponents to notify and consult with Aboriginal and municipal authorities in each community proximate to the Mackenzie Valley Pipeline right-of-way with regard to community use of merchantable timber that would be cleared along the Mackenzie Valley Pipeline right-of-way. Where consultations lead to an agreement between the parties with respect to the decking of, and liability for, cleared timber, these agreements must be filed with the National Energy Board prior to the commencement of construction of the relevant spread.

RECOMMENDATION 13-4

The Panel recommends that the Government of the Northwest Territories, with the involvement of the Proponents and Aboriginal authorities in those Northwest Territories Project Review Area communities that have either existing sawmilling capabilities or propose to acquire these capabilities, conduct a feasibility study for the potential supply of Northwest Territories-produced timber products to the Mackenzie Gas Project. The feasibility study should be completed and made public within six months of the Proponents' Decision to Construct.

13.5 TOURISM AND OUTDOOR RECREATION

13.5.1 EXISTING CONDITIONS

Air-, water- and land-based tours are offered within the ISR. Local residents and tourists travel and camp along the Mackenzie and Dempster highways, and there is recreational boat traffic on the Mackenzie River, the Mackenzie Delta and the Beaufort Sea.

Most tourism and outdoor recreational activity in the GSA is limited to fishing camps. The Project Review Area includes the route of the abandoned Canadian National telegraph line, which is used for some recreational activities, such as snowmobiling. In the Inuvik area, there are also cross-country ski trails, hiking trails and recreational dog team trails.

Residents use a variety of waterways in the SSA for outdoor recreation. Tourism activities include jet-boat tours on the Mackenzie River, tourism opportunities on Kelly Lake and a tourist camp on Manuel Lake. The Mackenzie Highway winter road and the Norman Wells oil pipeline right-of-way are used for outdoor recreation by snowmobile and all-terrain vehicles. In Norman Wells, other outdoor recreation users include a local birdwatchers' club, cross-country skiers, hikers and mountain bikers. The Canol Road wilderness trail through the Mackenzie Mountains is accessible from Norman Wells.

Within the DCR, several tourism-based businesses operate in the Project Review Area, including local boat charters, the *M.S. Norweta* riverboat cruise operated by the NWT Marine Group out of Hay River, day-trip fishing charters and package vacations. Those pursuing outdoor recreational activities in the DCR frequently use the all-weather highways (e.g. the Mackenzie Highway and the Liard Highway) and winter roads for touring by snowmobile or all-terrain vehicle.

Tourism and recreational activities near the Northwest Alberta Facilities are limited due to lack of road access.

13.5.2 PROPONENTS' VIEWS

The Proponents acknowledged that tourism and recreation activities could be affected by construction of the Project owing to restricted access or changes to existing travel routes. Most tourism activities occur during the summer, and pipeline construction would take place over the winter, so the number of potential interactions would be reduced. However, there would be some construction activities in summer months at the Project's facility, infrastructure and borrow sites.

Project-related summer barge traffic on the Mackenzie River and in the Mackenzie Delta could interfere with some water-based tourism and recreation activities, such as recreational boating. These impacts could occur all along the Mackenzie River.

Sensory disturbance because of increased traffic, noise and emissions during the Project's construction phase could adversely affect the quality of tourism and outdoor recreation activities, particularly those activities enjoyed by local community residents, such as snowmobiling or cross-country skiing. Some potential sensory disturbance would continue into the Project's operations phase in the local area of the Anchor Field production facilities and the pipeline compressor stations because of the noise produced by these facilities.

To accommodate the transport of the Inuvik Area Facility's very large modules (VLMs), the Proponents propose constructing a new south Inuvik barge landing site and all-weather road from the barge landing to the Dempster Highway. Construction of the road and south Inuvik barge landing and the transport of the VLMs might affect the use of cabins along the Mackenzie River near Inuvik, users of Jak Territorial Park, and an Inuvik-area recreational dog team trail. Three cabins are located within 1.5 km of the proposed south Inuvik barge landing site. The Proponents indicated that they met with the cabin owners to provide information on the barge landing and related infrastructure. The Proponents also met with two businesses that use recreational dog team trails in the vicinity and one business involved with boat tours in the area. The Proponents have committed to investigate concerns raised by the stakeholders and follow up with further meetings.

According to the Proponents, tourists and recreational users could be displaced by some existing developments or activities

within the Project Review Area in the Mackenzie Delta and the Mackenzie Valley. These activities include other oil and gas development and industrial developments such as borrow sites. Reasonably foreseeable projects, including the bridges along the Mackenzie Highway winter road from Wrigley to Fort Good Hope and the proposed Mackenzie River bridge project at Fort Providence, would provide improved access within the Project Review Area and could lead to new tourism and recreation opportunities.

The Proponents stated that the addition of the Project to other non-Project activities in the Project Review Area could result in a low adverse cumulative impact on how tourists or recreational users perceive their experiences because of further degradation of the local landscape. This may be offset by the cumulative increase in access and an increase in the quality of existing infrastructure provided by Project-related road improvements that could result in opening up new areas to tourism and recreational opportunities in the Project Review Area.

The Proponents committed to the following mitigation and management measures:

- prohibit the recreational use of all-terrain vehicles and snowmobiles by construction personnel while working on the pipeline or construction sites;
- prohibit the recreational use of Project roads and right-of-ways by Project staff during construction; and
- implement appropriate measures intended to mitigate safety risks caused by interactions between Project-related traffic and traffic at adjacent community docks, aquatic recreational facilities and public boating facilities.

The Proponents acknowledged that, during Project construction, it would be important to monitor tourism operations in the immediate vicinity of Project facilities, particularly those in the Mackenzie Delta, to determine if tourists and recreational users are being displaced from their areas of use.

The Proponents stated that the Project would have no impact or low adverse impact on the following in relation to tourism and recreation:

- The available land base for tourism and outdoor recreation activities and any impacts would be local to regional in extent and would be short-term in duration.
- Any impacts to tourism and recreation activities would be local to regional in extent and would be short- to long-term in duration.
- Any impacts to the quality of tourism and outdoor recreation would be local to regional in extent and short-term in duration.
- Any impacts to summer tourist and recreational boat traffic in the Mackenzie Delta and the Mackenzie River would be local to regional in extent and short- to long-term in duration.

13.5.3 PARTICIPANTS' VIEWS AND RECOMMENDATIONS

DISRUPTION OF LOCAL RECREATIONAL ACTIVITIES

Olaf Falsnes of Inuvik stated he was representing a number of people concerned with the proposed south Inuvik dock facility and access road. Mr. Falsnes noted that Jak Territorial Park is widely used in summer and winter by tourists and local people for cross-country skiing, snowmobiling, dog sledding, hiking, and bird and wildlife watching. He noted that Project facilities would create a new industrial area in conflict with the existing land uses and landscape. Mr. Falsnes suggested that the Proponents review another transport route option for the Inuvik Area Facility VLMs, from the existing Northern Transportation Company Ltd. dock and around the eastern edge of the town of Inuvik. This routing option is discussed further in Chapter 14, "Physical Infrastructure and Housing."

DISRUPTION OF LOCAL AND REGIONAL TOURISM AND ECO-TOURISM

Moe Grant, owner of Raven Enterprises and an ecotour guide based in Inuvik, indicated that she had "grave concerns regarding the proposed plan to construct a new barge landing south of Inuvik." (J-GEN-00028, p. 1) She stated that ecotourism in Inuvik is currently on the rise but that it would suffer significantly with this industrial development in the vicinity of Jak Territorial Park. Ms. Grant commented that the area has been used for over 20 years for summer fish camps, eco-boat tours and winter dog mushing, and that the area has many well-developed recreation trails.

The NWT Marine Group operates the *M.S. Norweta* as part of a small tourism business operating a passenger tour vessel providing ecotourism cruises on Great Slave Lake and the Mackenzie River. In a document filed with the Panel, the NWT Marine Group indicated its concern that the Project would have a negative impact on its tour vessel operations.

At a Community Hearing in Wrigley, the Pehdzeh Ki First Nation stated that there would be considerable loss of tourism due to the Project on many fronts, be it from road travel to the community or reduced tourism-related river traffic. It stated that the community should be compensated for this loss.

The Village of Fort Simpson noted that it is a gateway community for tourists who explore the Nahanni National Park Reserve of Canada and the Ram Plateau and who travel along the Mackenzie River and Dehcho highway system. Over 2,000 tourists visit Fort Simpson each year to enjoy the area's tours and services. The Village was of the opinion that the Proponents had not analyzed the Project's impact on the sustainability of the small but growing wilderness tourism business sector in the DCR.

The Deh Cho Business Development Centre completed a survey of DCR businesses and conducted an analysis of the potential

impacts of the Project on regional businesses, including tourism operations. The Deh Cho Business Development Centre stated:

The attraction of the Mackenzie Valley and the Deh Cho as a tourism destination is largely that of a pristine, wilderness destination. It could be argued that perceptions of the Mackenzie Valley and the Deh Cho as a major industrial zone for the four years of construction could adversely affect the ability of tourism marketing agencies to attract tourists to the region both on a short term and a long term basis... The Deh Cho region is part of the “Deh Cho Connection” travel route — a cooperatively marketed road touring route that links Alberta, British Columbia and the Deh Cho. The potential affect of the project on the rubber tire tourism industry in the Deh Cho has not been mentioned in the EIS. (J-OHP-00033, pp. 40–41)

Parks Canada recommended that any proposed borrow sites in the vicinity of the Nagwichoonjik National Historic Site of Canada be constructed in a way that minimizes impacts to the commemorative integrity of the site. The Proponents agreed with this recommendation.

FUTURE PARKS AND RECREATIONAL USE

The Canadian Parks and Wilderness Society recommended that the Proponents consider the compatibility of temporary use sites, such as barge landings, with future parks and recreational use. It referred to the proposed barge landing site near River Between Two Mountains and stated that the site should be studied with the community of Wrigley and GNWT Tourism and Parks officials to determine potential tourism and community end uses. The GNWT and the Proponents disagreed with this recommendation. The GNWT indicated that it is willing to enter into discussions with communities where there is interest to establish a protected area. The Proponents replied that, although they are willing to consider subsequent uses of the proposed barge landing site at River Between Two Mountains, any consideration or conditions should be addressed as part of the site-specific land-use permit approval process.

13.5.4 PANEL VIEWS

The Panel encourages the Proponents to continue with their consultation efforts with local communities and recreational user groups prior to the commencement of Project construction so as to minimize disruptions to outdoor recreation activities in the Project Review Area.

The Panel recognizes that some tourism and recreation activities may be negatively affected during the Project’s construction phase, especially with regard to temporary access restrictions and the impacts of construction and traffic noise. The Panel is of the view that the Proponents’ ongoing consultation and construction notification programs should be expanded to include all local tourism operations adjacent to the Project. This would help address tourism-related concerns expressed by community

leaders and tourism operators in Inuvik, Norman Wells, Wrigley, Fort Simpson and Hay River.

The Panel notes the potential impact of the Project’s barging activity on the NWT Marine Group’s *M.S. Norweta* operations on the Mackenzie River. The Panel encourages the Proponents to communicate with the NWT Marine Group and other marine tour operators in advance of the Project’s barging seasons to ensure that any barge scheduling conflicts are minimized.

The Panel is also aware that construction of the south Inuvik barge landing and access road, and the transport of the Inuvik Area Facility VLMs to the south Inuvik barge landing and then overland to the Inuvik Area Facility, could result in temporary disruptions to outdoor recreation activities in the Mackenzie Delta and Inuvik area. The Panel notes the Proponents’ efforts to continue to consult with potentially affected cabin users and recreational dog team trail operators near the proposed south Inuvik barge landing.

The Panel notes the Proponents’ willingness to consider subsequent uses of the temporary-use sites as part of the site-specific land-use permit approval process and encourages the Proponents to actively do so with interested parties.

13.6 HERITAGE AND HISTORICAL RESOURCES

13.6.1 EXISTING CONDITIONS

Heritage resources are defined and managed under the provisions of several pieces of legislation in the NWT, including the *Mackenzie Valley Resource Management Act*, the *Territorial Land Use Regulations*, the *Northwest Territories Archaeological Sites Regulations* and the NWT’s *Historical Resources Act*, which pertains only to Commissioner’s lands. Under the *Mackenzie Valley Resource Management Act*, heritage resources are defined as archaeological or historic sites, burial sites, artifacts and other objects of historical, cultural or religious significance, and historical or cultural records.

In Alberta, historical resources are managed under the provincial *Historical Resources Act*. Under that Act, historical resources are defined as any work of nature or of humans that is primarily of value for its paleontological, archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest, including but not limited to, a paleontological, archaeological, prehistoric, historic or natural site, structure or object.

The authority responsible for managing and protecting archaeological resources in the NWT is the Prince of Wales Northern Heritage Centre. In Alberta, the responsible authority is Alberta Community Development.

A total of 537 heritage sites were identified in the heritage resources study area through the Proponents' field studies or studies conducted previously. Of these, 102 sites were classified as having moderate or high value. These sites include historic burial, camp and cabin sites. No heritage sites were identified in the northwest Alberta heritage resources study area.

The Proponents provided financial assistance to local and regional NWT Aboriginal organizations to complete Traditional Knowledge studies in their areas. The focus of the studies was to gather local knowledge of the historic and current use of lands and resources, as well as the location of special cultural and spiritual areas for Aboriginal residents in those communities closest to the Project's proposed facilities and pipeline routes.

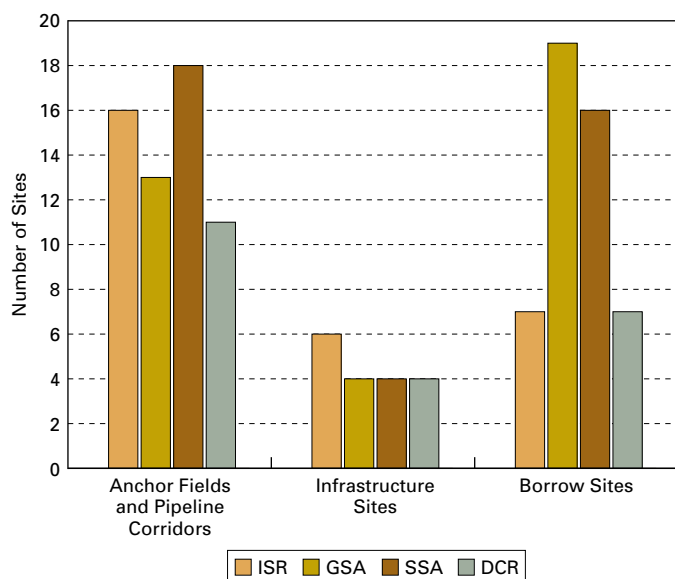
The studies contain important site-specific information that, in many instances, Aboriginal communities and residents wish to keep confidential. As a result, some of the Project-funded Traditional Knowledge Study Reports were submitted to the Panel as confidential.

13.6.2 PROPONENTS' VIEWS

Figure 13-6 shows the distribution of the 125 heritage, historical and paleontological sites identified by the Proponents' field programs that were potentially in conflict with the Project.

The Proponents stated that, until final designs and locations for various Project components are available, the precise areas that would be subject to ground disturbance cannot be specified. The heritage resources program designed for the Project recognizes

Figure 13-6 Distribution of Heritage and Historical Sites Potentially Affected by the Project, by Region



Source: Adapted from EIS, V6B, Section 8, pp. 25, 27-31, 38, 40-42, 50-54 and 59-61; J-NGTL-00013, p. 2

these uncertainties, and the Proponents have adopted a staged approach that would provide for increasing levels of assessment precision throughout the Project's planning and pre-construction phase.

The Proponents stated that complete information on expected impacts of the Project on heritage resources would be provided in advance of construction and that appropriate mitigation measures would be implemented to offset or reduce predicted negative impacts. At the time of the hearing, the Proponents could only outline their heritage resources mitigation measures. Mitigation strategies are usually devised when full information on impacts is known and are made in consultation with the regulatory agency responsible for heritage resource management in the NWT, i.e. the Prince of Wales Northern Heritage Centre.

In response to questioning about how much time the Proponents would require to complete the heritage resources impact assessment, the Proponents' consultant noted:

While much of the work to date has been reconnaissance level, we have, in fact, completed some heritage resources impact assessment level work because we know where some borrow sources and infrastructure locations are, so some of that has been done already. Going forward, I expect it'll take two field seasons to do the balance of the impact assessment work. (Rebecca Balcom, HT V31, p. 2857)

The Proponents submitted an outline of a Heritage Resources Management Plan for the Project. The Plan's regulatory compliance procedures result from the principles outlined in the *Northwest Territories Archaeological Sites Regulations* and Alberta's *Historical Resources Act*. The Heritage Resources Management Plan would include information on regulatory compliance, recognizing archaeological remains and impacts-management procedures.

The Heritage Resources Management Plan provides step-by-step procedures to be followed by the Proponents' construction contractors and archaeological consultant in the event of a heritage resource discovery during Project-related field work and construction activity. The Proponents provided an example where the pipeline ditch would intersect a previously undisturbed heritage site. In that instance, the contractor would stop work in that area, bypass installation of that pipeline segment, and develop an action plan for the mitigation strategy or protection of the heritage resource. Following mitigation or protection of the heritage resource, a smaller pipeline work crew would return to complete the installation of that segment of pipe.

Subsurface excavations in selected areas would be subject to inspection and monitoring by the Proponents' archaeological consultant. If the contractor or its employees encounter actual or suspected archaeological remains, the archaeological consultant would be contacted to assess the situation and identify suitable mitigation or protection procedures.

Although considerable information was collected during the Project's 2002, 2003 and 2004 heritage resource field seasons, the uncertainties of the precise impacts of the Project on heritage resources precludes providing a complete assessment of the significance of these impacts.

According to the Proponents, the following uncertainties must be resolved:

- identifying the precise locations and nature of development disturbance;
- identifying the significance of the heritage resources that might be affected; and
- devising effective mitigation strategies to offset negative impacts.

The Proponents made several commitments with regard to heritage resources in the three Anchor Fields and along the Mackenzie Gathering System and Mackenzie Valley Pipeline corridors, including:

- continue to involve community members and seek their advice on the locations of heritage sites;
- complete a heritage resource assessment of Project impacts;
- inform the GNWT of changes to the Project footprint made after the heritage resources impact assessment is complete to determine if additional archaeological work is required in areas not examined during the heritage resources impact assessment;
- determine mitigation strategies for heritage resources through discussions with the Prince of Wales Northern Heritage Centre and local communities;
- provide a management plan for field personnel and use the plan as a guideline for site protection if a discovery is made;
- flag or fence sensitive areas for protection; and
- assess any archaeological, heritage or paleontological resources that are discovered during the design and construction phases, determine suitable mitigation measures, and notify the applicable government agencies, as required.

Wherever possible, known archaeological sites would be avoided by the Project. Project personnel would be notified that they cannot wilfully disturb or remove archaeological or historic artifacts or materials from sites. Collection of such artifacts would be strictly forbidden.

NGTL committed to undertake the following actions regarding heritage resources in the Northwest Alberta Facilities pipeline corridor:

- Protection measures and management techniques for heritage resources will address site-specific conditions and the type of feature discovered. Before construction, a report would be

completed that would specify mitigation measures at each known heritage resource site.

- Where a previously unidentified archaeological or heritage site is encountered during construction, until the site has been examined by a qualified archaeologist, no further construction would be undertaken in the immediate vicinity. Construction activity in the identified area would not commence until permission to proceed has been granted by Alberta Community Development.
- If archaeological, heritage or paleontological resources are discovered during the Northwest Alberta Facilities design and construction phase, the site would be assessed and suitable mitigation measures would be determined. NGTL would notify applicable government agencies, as required, and site assessment and steps to protect the discovery would be undertaken as directed by Alberta Community Development.

The Proponents stated that the direct impacts of Project-related activities on undiscovered heritage resources would be negative and, in most cases, permanent because of the non-renewable nature of heritage resources.

13.6.3 PARTICIPANTS' VIEWS AND RECOMMENDATIONS

AVOIDING KNOWN HERITAGE RESOURCE SITES

Several participants noted the importance of avoiding known heritage sites. The Gwich'in Social and Cultural Institute also recommended that an archaeologist and a Gwich'in Elder familiar with the proposed development area must monitor gravel developments for burial and other archaeological sites. The Proponents agreed, in principle, stating that Project pipeline routes and facility and infrastructure sites would avoid known sacred sites.

MANAGEMENT OF HERITAGE RESOURCES ENCOUNTERED DURING CONSTRUCTION

The GNWT expects that numerous archaeological sites would be at risk of impact due to the size of the Project's footprint. The GNWT stated: "For most development footprints, there are two main mitigation options to offset negative impacts to archaeological sites. One allows for complete preservation of an archaeological site and the other only partial preservation of the site." (Glen MacKay, HT V32, p. 2902)

The GNWT noted that archaeological and heritage site impacts can be avoided by Project realignment or rerouting. They acknowledged that, while this option preserves all of the information contained in an archaeological or heritage site for later study, it would not always be feasible from an engineering perspective to realign the Project footprint. The GNWT also indicated that post-construction monitoring of archaeological sites should be conducted after each of the Project's construction seasons to confirm site avoidance. In cases where site avoidance

had been compromised by Project activities, this measure would facilitate the development of more effective management techniques for the next construction season.

In response to questioning about the timing of pre-construction archaeological work by the Proponents and subsequent review of that information by the GNWT, the GNWT expressed concern that one field season may be inadequate to complete the necessary work.

The Liidlii Kue First Nation recommended that the Proponents:

- contact it immediately if an unknown cultural site is found during pipeline construction;
- train employees working on the pipeline to recognize cultural sites and treat these areas with respect; and
- create a protocol for pipeline staff to follow when a suspected cultural site is found in the field.

The Proponents agreed with these recommendations, with variation. The Proponents replied that culturally sensitive areas would be identified and mitigation measures would be in place before construction begins. Mitigation measures would include protection and avoidance strategies. If an unknown heritage site is discovered during construction, activities would be suspended until an assessment is completed and mitigation measures are determined. Environmental monitors from local communities would be hired to work on all pipeline construction spreads.

13.6.4 PANEL VIEWS AND RECOMMENDATIONS

The Proponents stated that they are unable to assess the overall significance of the impacts that the Project may have on heritage resources based on the information collected to date. The Panel also notes that the Proponents have acknowledged that further site-specific heritage resources impact assessments need to be completed before commencement of Project construction. With respect to assessing the potential impacts of the Project on NWT heritage resources, the Panel takes particular note of, and concurs with, comments of the GNWT:

The overall impact of the Mackenzie Gas Project on archaeological resources is at present unknown. The Government of the Northwest Territories will not be able to predict the overall effect of the project until the final heritage resource impact assessment is completed and the proponents have determined the number and character of archaeological sites at risk of impact. The Government of the Northwest Territories is concerned that if an effective strategy for mitigation is not adopted, the Mackenzie Gas Project may result in an adverse impact to the archaeological record of the Mackenzie Valley. (MacKay, HT V32, p. 2902)

As primary regulator of heritage resources in the NWT, the Prince of Wales Northern Heritage Centre has the experience

and ability to review the Proponents' heritage resources impact assessments, and to provide appropriate mitigation and management measures before the commencement of any Project construction. The Panel is of the view that the mitigation and management measures that the Prince of Wales Northern Heritage Centre would require the Proponents to assist in would minimize any negative impacts on heritage resources in the NWT. The critical element in completing the Project's heritage resources impact assessment and preparation of mitigation measures is to ensure that there is enough time and resources for the Prince of Wales Northern Heritage Centre to complete its field verifications and community consultations.

To help expedite the Prince of Wales Northern Heritage Centre's review of the Project's heritage resources impact assessments, the Panel is of the view that the Proponents should consider filing the heritage resources impact assessment studies sequentially by right-of-way clearing spread.

The Panel understands that the Proponents provided funding to a number of NWT Aboriginal organizations to complete Traditional Knowledge Study Reports, which were used by the Proponents to further refine their facility and infrastructure site locations and pipeline routing. However, the Panel also observes that the primary regulator of heritage resources in the NWT, the Prince of Wales Northern Heritage Centre, does not have access to all of the Traditional Knowledge Study Reports completed for the Proponents, as some of the studies have been completed in confidence and the reports are currently held by the Proponents and the Aboriginal groups that participated in their preparation. Therefore, the Panel is concerned that there is no knowledgeable, independent person who could inspect, monitor and intercede in relation to Project-related impacts on those heritage resources that have been identified in the Proponent-funded Traditional Knowledge Study Reports that remain confidential.

The Panel expects the Proponents and NGTL to incorporate the results of all the Traditional Knowledge studies with their facility and pipeline route selection process, as the studies are completed.

The Panel is of the view that, with the following actions, the Project would not likely have a significant adverse impact on heritage resources in the NWT:

- implementation of the Proponents' proposed heritage resources mitigation and management measures;
- completion of the outstanding heritage resources impact assessments;
- consideration and mitigation of heritage resources identified in the Traditional Knowledge studies;
- application of any mitigation measures required by the Prince of Wales Northern Heritage Centre; and
- implementation of the following Panel recommendations.

RECOMMENDATION 13-5

The Panel recommends that:

- (a) The Mackenzie Valley Land and Water Board and Indian and Northern Affairs Canada, as a condition of any licence or permit they might issue in relation to the Mackenzie Gas Project, require the Proponents to file heritage resources impact assessments for all Project-related facilities, including borrow pits and quarries, that have been completed to the satisfaction of the Prince of Wales Northern Heritage Centre.*
- (b) The Mackenzie Gas Project heritage resources impact assessments referred to in Panel Recommendation 13-5(a) be completed and submitted to the Prince of Wales Northern Heritage Centre sequentially by pipeline right-of-way clearing spread and in the order that the spreads are scheduled to be cleared, and that the assessments for each spread be filed at least six months prior to the proposed commencement of Project-related clearing or construction activity on each respective spread.*

RECOMMENDATION 13-6

The Panel recommends that:

- (a) The Mackenzie Valley Land and Water Board and Indian and Northern Affairs Canada as a condition of any licence or permit they might issue in relation to the Mackenzie Gas Project, require the Proponents to file, at least one month prior to the commencement of construction, a final Heritage Resources Management Plan as approved by the Prince of Wales Northern Heritage Centre.*
- (b) The National Energy Board, as a condition of any certificate or approvals it might issue in relation to the Mackenzie Gas Project, require the Proponents to file, at least one month prior to the commencement of construction, the Heritage Resources Management Plan, as approved by the Prince of Wales Northern Heritage Centre.*

