ALBERTA ENERGY AND UTILITIES BOARD
Calgary Alberta

GIBSON PETROLEUM COMPANY LIMITED
HUSKY OIL OPERATIONS LIMITED
ALBERTA ENERGY COMPANY
APPLICATIONS TO CONSTRUCT
CRUDE OIL AND LOW VAPOUR PRESSURE PIPELINES
IN THE COLD LAKE **Decision D 96-5**
AND HARDISTY AREA **Applications No. 960354, 960495, and 960643**

1 APPLICATIONS

Application No. 960345 by Gibson Petroleum Company Limited (Gibson) is for approval to construct and operate a 151-kilometre (km) heated crude oil pipeline and associated facilities from an existing battery in Legal Subdivision 14, Section 28, Township 55, Range 6, West of the 4th Meridian to an existing pipeline terminal in Lsd 4-29-42-9 W4M.

Application No. 960495 by Husky Oil Operations Limited (Husky) is for approval to construct and operate a 137 km crude oil pipeline and associated facilities from Lsd 5-17-55-5 W4M to the existing pipeline terminal at Lsd 4-29-42-9 W4M.

Application No. 960643 by Alberta Energy Company (AEC) is for approval to construct and operate a 93 km low vapour pressure products pipeline from an existing facility at Lsd 14-10-63-5 W4M to Lsd 5-17-55-5 W4M.

2 HEARING

A public hearing to consider the applications was held in Calgary, Alberta, on 27, 28, and 29 August 1996 before Board Members F. J. Mink, A. C. Barfett and B. T. McManus. Gibson requested an expeditious approval in order to proceed with construction of the pipeline to meet Gibson's in-service date and avoid the additional cost of winter construction. Gibson therefore urged the Board to issue an approval of its application with written reasons to follow in order that construction not be delayed. Gibson also urged the Board to consider issuing its decisions separately on each of the three applications before it notwithstanding that they were heard at the same time. At the hearing, Husky undertook to provide the Board and interested parties further information in support of the Husky application.

3 DECISION

Having considered all the evidence, the Board is satisfied that there is a need for the Gibson pipeline, that it meets all regulatory requirements, and that it is in the public interest. Therefore, the Board is prepared to approve the Gibson application as proposed and will issue the permit immediately without special conditions. A detailed report giving reasons for the Board's decision will be issued in due course.

This decision is issued without prejudice to the Board's consideration of the Husky and AEC applications. The Board will continue with its review of those applications and will deliver the related decisions in due course.

DATED at Calgary, Alberta, on 13 September 1996.

ALBERTA ENERGY AND UTILITIES BOARD

F. J. Mink
Presiding Member

A. C. Barfett
Board Member

B. T. McManus
Board Member

ALBERTA ENERGY AND UTILITIES BOARD
Calgary Alberta

GIBSON PETROLEUM COMPANY LIMITED
HUSKY OIL OPERATIONS LIMITED
ALBERTA ENERGY COMPANY
APPLICATIONS TO CONSTRUCT
CRUDE OIL AND LOW VAPOUR PRESSURE PIPELINES
IN THE ELK POINT AND HARDISTY AREA

Addendum A to Decision D 96-5
Applications No. 960354, 960495, and 960643

1 Applications

Application No. 960345 by Gibson Petroleum Company Limited (Gibson) was for approval to construct and operate a 151-kilometre (km) heated crude oil pipeline from Elk Point to Hardisty.

Application No. 960495 by Husky Oil Operations Limited (Husky) is for approval to construct and operate a 137-km crude oil pipeline from Legal Subdivision 5, Section 17, Township 55, Range 6, West of the 4th Meridian to the existing Hardisty pipeline terminal at Lsd 4-29-42-9 W4M.

Application No. 960643 by Alberta Energy Company (AEC) is for approval to construct and operate a 93-km low vapour pressure products pipeline from La Corey to Elk Point.

On 13 September 1996, the Board issued Decision D 96-5 approving the Gibson application with reasons to follow. The Board noted the approval was expressly without prejudice to the Board's consideration of the Husky and AEC applications.

2 Hearing

A public hearing to consider the applications was held in Calgary, Alberta, on 27, 28, and 29 August 1996 before Board Members F. J. Mink, A. C. Barfett, and B. T. McManus. At the request of the Board, Husky undertook to provide further information on the outlook of crude oil supply in support of its application. This information was submitted on 6 September 1996. In response to a further request, Husky provided information on the cost effectiveness of its proposed new pipeline and the relative merits of expanding the existing system to meet the increased demand for new capacity. Gibson requested that the hearing be re-opened to consider the additional information. The Board subsequently re-opened the hearing on 27 November 1996 to consider only the evidence submitted after the closure of the hearing.

Husky requested an immediate approval of its application from the bench to avoid further unnecessary delays of its project. It maintained that current supply projections require an early completion of the project and that ordering of equipment is the critical factor in determining the start up date of 1 July 1997. Husky indicated that it continues to look for ways to allow for earlier construction and start up of the pipeline due to increased supply of crude oil in the area. If a decision from the bench was not issued, Husky urged the Board to issue an approval of its application with written reasons to follow.

3 Decision

Having heard the supplementary evidence at the reconvened hearing, the Board is now satisfied that there is a need for the Husky pipeline, that it meets all the Board's regulatory requirements, and that it is in the public interest. Therefore, the Board is prepared to approve the Husky application as proposed and will issue the permit immediately without special conditions. A detailed report giving reasons for its decision will be issued by the Board in due course.

The Board will continue with its review of AEC application and issue its decision in due course.

DATED at Calgary, Alberta, on 28 November 1996.

ALBERTA ENERGY AND UTILITIES BOARD

F. J. Mink
Presiding Member

A. C. Barfett
Board Member

B. T. McManus
Board Member

ALBERTA ENERGY AND UTILITIES BOARD
Calgary Alberta

GIBSON PETROLEUM COMPANY LIMITED
HUSKY OIL OPERATIONS LIMITED
ALBERTA ENERGY COMPANY
APPLICATIONS TO CONSTRUCT CRUDE OIL
AND LOW VAPOUR PRESSURE PIPELINES
IN THE COLD LAKE AND HARDISTY AREA

Addendum B to Decision 96-5
Applications No. 960354, 960495, and 960643

1. INTRODUCTION

1.1 Background and Applications

The Board received a number of pipeline applications for transportation service in the Cold Lake/Hardisty area of the province with apparent overlapping interests. Application No. 960345 by Gibson Petroleum Company Limited (Gibson) was for approval to construct and operate a 151-kilometre (km) heated crude oil pipeline (the ECHO pipeline) with an outside diameter of 323.9-millimetre (mm) and associated facilities from existing ELAN Energy Inc. (ELAN) batteries located in Legal Subdivision 14, Section 28, Township 55, Range 6, West of the 4th Meridian and LSD 10-18-55-5 W4M to an existing pipeline terminal in LSD 4-29-42-9 W4M.

Application No. 960495 by Husky Oil Operations Limited (Husky) was for approval to construct and operate a 137-km crude oil pipeline with an outside diameter of 323.9 mm and associated facilities from LSD 5-17-55-5 W4M to the existing pipeline terminal at LSD 4-29-42-9 W4M.

Application No. 960643 by Alberta Energy Company (AEC) was for approval to construct and operate a 93-km low vapour pressure products pipeline with an outside diameter of 168.3 mm from an existing facility at LSD 14-10-63-5 W4M to LSD 5-17-55-5 W4M (see map attached as Figure 1).

1.2 Hearing

The three applications were considered at a public hearing in Calgary, Alberta, on 27, 28, and 29 August 1996, before Board Members F. J. Mink, P.Eng., A.C. Barfett, and B. T. McManus, Q.C. Following the hearing on 13 September 1996, the Board issued Decision 96-5 approving the Gibson application with reasons to follow. At the request of the Board, Husky undertook to provide further information in support of its application which was submitted on 6 September 1996 and 24 October 1996. Gibson requested that the hearing be re-opened to consider the additional information. The Board subsequently re-opened the

hearing on 27 November 1996. On 28 November 1996, the Board issued Addendum A to Decision 96-5 approving the Husky application with reasons to follow. The Board noted that the Husky and Gibson approvals were both without prejudice to the Board's consideration of the AEC application.

Those who appeared at the hearing and abbreviations used in this report are listed in the following table.

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)	Witnesses
Gibson Petroleum Company Limited (Gibson) L. Keough	B. Bauhuis P.Eng. M. Massecar, P.Eng. B. Stuart, P.Eng. V. Luhowy, P.Eng. R. Gibson M. Collins
Husky Oil Operations Ltd. (Husky) R. Neufeld F. Saville, QC	T. Kutryk D. Stout, P.Eng. B. Kliciak, P.Eng. P. Symborski, P.Eng.
Alberta Energy Company (AEC) D. Davies T. Hughes	J. Labrenz, P.Eng. J. Pasini, P.Eng.
PanCanadian Petroleum Limited P. McCunn-Miller	R. Stevens
Imperial Oil Resources Limited (Imperial) W. Muscoby	
Koch Oil Company Ltd. (Koch) K. Miller D. Bristow	
Purchase Oil and Gas (Purchase) L. Mann	

THOSE WHO APPEARED AT THE HEARING (cont'd)

Principals and Representatives (Abbreviations Used in Report)	Witnesses
Canpet Energy (Canpet)	
R. Cross	
Texaco Canada Petroleum Inc. (Texaco)	
T. Pritchard	
Norcen Energy Resources Limited (Norcen)	
S. Reid	
Canadian Natural Resources Limited (CNRL)	
B. Timmerman	
Alberta Energy and Utilities Board staff	
R. Heggie, Counsel	
A. Larson, P.Eng.	
K. Wills	
D. Fraser	

2. ISSUES

The Board has reviewed the technical, environmental, and social implications of the applications and found them to be generally in order. While the issues varied among the applications, the Board considers the concerns to be:

- need for the proposed pipelines,
- technical feasibility,
- capital and operating cost of proposed pipelines, and
- tariffs.

3. GIBSON AND HUSKY PROPOSALS

The Lloydminster area of Alberta represents a significant and growing region of heavy oil development in the province. At the time of the application, Husky was the only major transporter of fluids out of the area.

The Gibson and Husky applications were considered by the Board, after review of the evidence, to be competitive proposals and are presented together in the following section. The AEC application is dealt with separately in Section 4.

3.1 Need for the Proposed Pipelines

3.1.1 Views of Gibson

Gibson stated that the proposed ECHO pipeline was needed to transport heavy oil production from the ELAN facilities located in proximity to township 55-6-W4M. The pipeline's initial capacity was designed to ship 3200 m^3/d although Gibson intended to expand the line to full capacity of 8600 m^3/d as demand for service increases. ELAN indicated that it had been negotiating to use the existing Husky system for a number of months, but was unable to reach acceptable commercial arrangement to transport its production. ELAN, therefore, formed a partnership with Gibson to build the proposed pipeline and stated it was no longer interested in moving its production on the Husky system. It maintained that the proposed ECHO pipeline would provide ELAN with increased flexibility and reliability, such that it could develop its own reserves in the most prudent manner. ELAN stated that some of the benefits of the proposed pipeline would be the elimination of condensate transportation charges, an increase in its control over the pace of development, and the ability to control its own reserves development, resulting in increased netbacks from accessing different streams on the Interprovincial Pipeline (IPL) system. Gibson also noted that its pipeline would offer competition to the Husky system by providing transportation service for other producers in the area. Gibson also saw some benefits from the ECHO line if industry moved towards the transportation specification of 350 centistoke for crude oil on the IPL system, as such a specification would reduce the need for diluent. Gibson suggested this change would facilitate the delivery of raw heavy crude oil to Hardisty. As a related benefit from its application, Gibson and ELAN submitted that the threat of competition provided by the ECHO application had already reduced transportation costs for firm and spot shippers on the Husky system, and had prompted Husky to adopt an open access system.

Gibson projected that ELAN's production from the Elk Point/Lindbergh area would increase from 2544 m^3/d in 1996 to 6360 m^3/d in 2003. ELAN noted that it had doubled production in this area in the last 14 months and indicated that it viewed the forecast as being conservative and achievable. ELAN was confident in achieving these levels of production given that the geological risk in this area was low. It indicated that it expected to double its production in the next five years, with most of the production increase to occur through normal conventional vertical drilling and a small portion to occur using single well SAGD technology. ELAN stated that the financial viability of the pipeline was based on production that will have been established by the end of 1996.

The ultimate capacity of the proposed pipeline would be 8600 m^3/d. Given that initially ELAN would only have 3200 m^3/d available production, there would be excess capacity in the system for third party shippers. Gibson stated that the other producers would benefit from the ECHO line because they would not have to assume any risk, would be provided with an alternative transportation system, and would be able to derive the benefits of competition.

Gibson maintained that the ECHO pipeline was an economic, orderly, and efficient

development that was in the public interest. It proposed to construct the line in the fall of 1996, to avoid any increased capital costs and to prevent potentially more complicated winter construction issues.

Gibson was opposed to approving the Husky application because Husky had not demonstrated that its current option was the most economic, orderly, and efficient pipeline. Gibson took the position that Husky should consider expanding its existing system as an alternative to the proposed application. Gibson believed that the level of capacity available in the existing Husky system exceeded what was proposed by the new application, once the ELAN volumes were removed. Gibson challenged the additional information that Husky submitted and said it was still not convinced the proposed Husky application was the best option, even with the filing of the new supply forecast. In addition, Gibson maintained that the supply forecast was academic considering that Husky had not evaluated the alternative of looping its existing system. Gibson stated that the Board should deny the Husky application until Husky demonstrated that there were no better pipeline alternatives.

3.1.2 Views of Husky

Husky believed its proposed blended heavy oil pipeline would improve the reliability and efficiency of operation of its existing system, which became a multishipper open access pipeline on 1 June 1996. Husky stated that with the addition of the proposed line it would be able to serve the shippers in the Elk Point area and also phase in incremental capacity to Lloydminster and Hardisty. Husky indicated that no additional blending facilities were necessary as the infrastructure for moving condensate to Lindbergh to increase production out of the Lindbergh area was already in place.

Husky stated that it expected the production volumes out of the service area in 1997 to be 17 793 m^3/d, increasing to 22 697 m^3/d in 1998. Husky noted it had contracts with virtually all the major producers in the Lindbergh/Elk Point area and north, excluding ELAN, and it was contractually obligated to move peak production levels which could be greater than the forecast volumes. It was concerned that without early completion of the Lindbergh to Hardisty pipeline, it would not be able to meet its contractual obligations. Husky believed there was sufficient supply in the area to justify the proposed pipeline and that producers were forecasting strong heavy crude oil growth rates.

Husky also indicated that it had turned back 2300 m^3/d of Cold Lake crude oil in recent months, deflecting shipments to alternative lines because of the insufficient capacity in the existing system. It noted that committed shippers on the Husky system were presently trucking 1200 to 1500 m^3/d and some 600 m^3/d of oil was shut-in, while the Husky Lloydminster refinery was operating at capacity due to a lack of pipeline capacity.

Husky stated that if the crude oil volumes did not appear as forecast, the result would be that the system between Lindbergh and Hardisty would not be utilized to as great an extent as would otherwise be the case. This should not be a concern to shippers because it would not be a cost of service pipeline and Husky would be absorbing the risk associated with that under-

utilization. Husky stated that project would be financed internally.

After the initial hearing Husky submitted further data regarding the alternatives to its proposed project, including an economic comparison of the proposed pipeline to three options for expanding its existing system. The study showed the proposed pipeline to offer a slight economic advantage over the other options. Husky favoured building the proposed pipeline because it offered more flexibility in the event that the volumes forecast did not materialize. It stated, however, that this project was only the first step in a process to increase capacity on its system to meet long term volume forecasts.

Husky believed the optimal solution for Husky and Gibson would be a single blended crude oil pipeline between Lindbergh and Hardisty. Husky did not believe the two separate systems were compatible in that the volumes that Husky was obligated to transport could not be accommodated on the proposed Gibson pipeline. Husky noted that it presently had a pipeline serving the ELAN batteries which it would have to operate, even if the ECHO pipeline were approved, because it had signed contracts from other producers at these batteries to move their production.

Husky was concerned that Gibson would not move all shippers crude oil to avoid possible contamination of the ELAN volumes, and any effect on the IPL stream that the ELAN volumes would access. Husky could not foresee transferring volumes from its transportation system on the ECHO pipeline, which would result in transportation charges above what Husky would be charging its customers. Notwithstanding its concerns about the Gibson proposal, Husky stated that there was a need for its project to move production in the area and it would proceed with its project irrespective of what the Board decided concerning the Gibson application.

3.1.3 Views of Others

AEC took no position with respect to the applications of Gibson and Husky. AEC noted that at one time Gibson had a competing application before the Board to build a condensate pipeline into the area, but Gibson withdrew the application.

Imperial had no position regarding the Husky or Gibson applications.

Purchase, an operator in the area, supported the Gibson application. It believed that pipeline sector competition was essential to provide Purchase with increased control and flexibility in bringing its products to market. Purchase believed that it had already realized a significant cost saving due to the threat of competition from the Gibson application. It believed that if the Board were to approve the Gibson application, industry would realize further transportation benefits. Purchase stated that Gibson's amended application demonstrated flexibility and innovation in respect of pipeline transportation, and that minimizing condensate requirements should be favoured over other designs.

Texaco, an operator in the Frog Lake area, also supported the Gibson application. Texaco stated its project was presently in the development stage and it was looking only at short-term

transportation options. Texaco believed that the future supply of condensate was uncertain, and therefore the use of an insulated heated pipeline was an innovative approach to deal with that concern. Texaco believed competition would enhance access options and the flexibility needed to control costs with the increased trend toward a commoditized marketing environment within the petroleum industry.

Canpet, a producer-owned marketer of crude oil, agreed there was a need for additional transportation capacity in the area. Canpet supported the development of a competitive transportation environment for crude oil and endorsed the concept of multishipper open access systems as the best method of ensuring the producers, particularly small producers, pay the lowest possible transportation costs, and therefore receive the highest netbacks.

Koch, a current shipper on the Husky system, supported the Husky pipeline option. It also wanted assurance that the pipeline capacity contracted with Husky would be available when required. Koch was concerned the ECHO volumes would impact other users of the Gibson Hardisty terminal. Specifically Koch was concerned that if the ECHO volumes were blended with the Bow River stream, the quality of the Bow River stream would be reduced. In response to Koch's concern, Gibson committed not to blend the volumes received off the ECHO pipeline with the Bow River stream, if such blending would have the effect of diminishing the quality of the Bow River stream. Gibson also maintained that the ECHO volumes would have no impact on the Bow River pipeline terminalling services. Koch argued that if there were no significant public interest issues which were being adversely affected by the applications, the Board should approve the facilities if the applicant indicated that it had adequate market support to justify the capital expenditure.

PanCanadian supported the Husky application. It indicated that the proposed Gibson alternative was not suitable for its needs because of its geographic location and due to the quality of PanCanadian crude oil. The proposed Husky system provided better access for PanCanadian and the ability to move segregated batches. PanCanadian believed the contracted toll on the Husky system was more cost effective and provided rate certainty over the term of the transportation agreement. PanCanadian also believed its supply forecast was sustainable over time and would likely increase.

Norcen also supported the Husky application. It indicated that inadequate pipeline capacity from the area had prompted it to shut-in wells from time to time. Norcen stated that its own supply forecast, used in the forecasts of total supply in the area, was conservative. Norcen expected to exceed the forecast. It also indicated that the contracted toll was appropriate for its needs.

3.1.4 Views of the Board

The Board is required to evaluate the need for the proposed pipelines in the broad public interest. It believes that in developing Alberta's resources all reasonable efforts should be made to use existing facilities and to reduce impacts on the environment. To that end, producers are generally encouraged to negotiate suitable transportation arrangements that would favour existing or expanded infrastructure. However, the Board recognizes that a variety of commercial circumstances may prompt the development of competing proposals that are equally in the public interest. Unless there appears to be compelling public issues, the Board generally accepts that competitive market forces offer some benefits in rationalizing commercial arrangements. In the case of the ECHO pipeline, the Board notes that ELAN did investigate the possibility of using the existing Husky system extensively, but was unable to obtain acceptable commercial terms. The Board accepts that the existing Husky system could be expanded or modified to transport the ELAN volumes. However, the Board does not believe Elan should be restricted to the Husky option, particularly if a competing alternative is commercially more acceptable and involves little or no adverse public impact. The Board notes that the proposed ECHO pipeline will allow ELAN increased flexibility in its reserves development. The Board is satisfied that the ECHO pipeline has secured adequate supplies and that there is a need for the facility.

Based on the evidence available, the Board is also satisfied there is a need for the line proposed by Husky. Although growth in supply is somewhat uncertain, the Board accepts that aggressive new developments will occur in the area. The Board also accepts that both pipelines will not be full at the outset, but the Board is confident that capacity in the line can be tailored to result in sufficient utilization of the systems. While the actual rate of increased production is in doubt, and Husky's projections may be optimistic, the Board is satisfied that the long term plans for development in the area are reasonable. The Board accepts Husky's position that it is contractually obligated to transport peak production levels which could be greater than the forecasted volumes. In any event, the Board believes that the potential for increased production exists and if projected production levels are met, both the Gibson and Husky lines will be needed to transport the volumes of oil out of the area.

The Board also accepts Husky's position that its proposal will improve the reliability and operating efficiency of the existing system and should allow Husky to minimize its financial risks if forecast volumes do not appear. While the evidence is not conclusive, the Board accepts that Husky may see some benefit to its proposed pipeline versus expanding the existing system. The Board sees no compelling reason to interfere in the business decision when Husky is incurring the risk of the project.

The Board recognizes the Koch concern that the ECHO volumes may impact the Gibson terminal operation, but the Board notes that Gibson has committed not to blend the ECHO volumes with other streams if it would have the effect of diminishing the quality of the stream.

The Board believes that there is widespread market support for the Husky pipeline. Given the rapid development of resources in the area and the fact that Husky has changed its existing

system to a multishipper open access pipeline which is beneficial to the producers in the area, Husky should be able to attract additional shippers to its system. Considering the outlook, the Board is satisfied that both the Husky expansion and the Gibson ECHO line are needed.

3.2 Technical Feasibility

3.2.1 Views of Gibson

Gibson stated that the heated crude oil technology would allow the transportation of raw, heavy crude oil without the necessity to blend the crude with condensate. Gibson indicated that although an insulated heated crude oil pipeline would be new technology to Alberta, it has operated in other jurisdictions in a satisfactory manner. The proposed pipeline would have a maximum operating temperature of 90°C, compared to conventional blended lines that are not insulated and operate at temperatures near 60° to 65°C. Gibson maintained that the heat loss at the warm end of conventional pipelines would be greater than that of the proposed Gibson line. Gibson argued that its insulated line would experience a slow shedding of heat, and therefore there would be negligible impact at ground level.

Gibson stated it had carried out a detailed investigation to ensure that the technology was feasible and appropriate for the transportation of crude oil in Alberta. After a technical review, Gibson concluded that the proposed pipeline should incorporate a shop applied urethane coating, a urethane insulation, a moisture barrier, and a polyethylene mechanical protective layer. Gibson also completed a geotechnical study to review the optimum configurations of pipe based on the thermal characteristics of the design. Gibson stated that it was completing a stress analysis for the pipe which would also be incorporated into the final design. Gibson committed to constructing and operating the proposed pipeline in accordance with all applicable codes and requirements.

Gibson indicated that the proposed design might result in some heating of the adjoining area of soil, but expected this environmental concern to be addressed through insulation and depth of burial. It recognized that the operating characteristics of the pipeline would be different than other pipelines and that the control room operator would have to be trained to recognize the unique operating characteristics. In case of an emergency, where the crude oil would cool and make transportation difficult, Gibson would use the block valve sites to truck product away, inject product, or dilute the crude oil to allow product movement. Gibson stated that there would be condensate storage tanks at the ELAN facilities for use during start-up and emergencies. Gibson also saw some benefit to its system over conventional pipelines in the case of spills. Gibson submitted that if the pipeline did fail the crude oil would be less mobile then oil diluted with condensate and that containment and clean-up might be easier.

Gibson believed adequate public consultation had taken place on its application. Gibson had discussed its original project concept with affected landowners and occupants along the route prior to filing the original application. Gibson did not view the amendment to a heated oil pipeline as having any significant impacts to landowners and occupants. In Gibson's view, there was no need to renotify the landowners and occupants subsequent to the design change as

there was no significant physical change in the project. It indicated that spoil pile required in both cases would be equivalent, whether there were two pipelines in the ditch or merely one deeper pipeline. In the first case, the ditch would be wider. Gibson indicated that it had received no public objection to the pipeline. Notwithstanding, Gibson intended to notify landowners and occupants of the design change at the time it negotiated its easements. In short, Gibson stated that the construction and operation of the proposed pipeline would have no adverse environmental impacts.

Gibson had no comments on the technical aspects of the Husky proposal.

3.2.2 Views of Husky

Husky noted that its own proposed pipeline was a standard design. Husky stated that it had completed its public consultation and received no public objection to the proposed pipeline.

Husky did not dispute that the proposed Gibson design was technically feasible, but believed that Gibson had not completed sufficient technical analysis to satisfy the Board that it could be constructed as proposed without adverse effects. Husky stated that some of its concerns were related to wall thickness of the pipe and operating temperatures. It was Husky's belief that if the proposed Gibson pipeline were to cool sufficiently, line restart would be impossible. Husky also remarked that in its view Gibson had not apprised affected landowner and occupants sufficiently about the changes made in the application. Husky did not contend that the design should be a concern to landowners and occupants, but noted that the number of valve locations and surface impacts were much greater with the proposed design. Husky considered that landowners and occupants should be advised of the surface impacts.

3.2.3 Views of the Board

The Board is satisfied that Gibson has undertaken a sufficiently detailed investigation and follow up to ensure that the design of its pipeline is appropriate. The Board believes Gibson to be a reputable pipeline operator and accepts that all reasonable technical parameters will be investigated to assure the long term integrity of the pipeline and safety of the public. The Board notes that Gibson has committed to constructing and operating the proposed pipeline in accordance with all applicable codes, as well as to train its operators regarding the unique characteristics of the pipeline. The Board has no reason to consider that the proposed insulated heated crude oil pipeline is not technically feasible, nor that with proper operation it should have any adverse environmental effects.

The Board considers that Husky has proposed a conventional design which is technically feasible and which meets all required standards.

3.3 Capital and Operating Cost of Proposed Pipelines

3.3.1 Views of Gibson

The ECHO system begins at the metering stations at the ELAN batteries and ends at the metering station at the Hardisty terminal. The capital cost estimates provided include meter stations, heating stations, valves, coatings, pump stations, pipe, design, construction, and start-up of the pipeline. Gibson stated that no capital costs were allocated to allow third party volumes access to the existing system, but it submitted that this capital cost would not be large.

Gibson stated that economic justification for the project was satisfied by the ELAN volumes alone, which have been dedicated to backstop the pipeline for a ten-year term. Accordingly, Gibson did not seek out additional firm commitments for the proposed system.

Gibson also stated that the capital cost for the 3200 m^3/d start-up scenario was estimated to be $31.2 million plus or minus 10 per cent, while operating costs were estimated to be $1.6 million. Gibson indicated that its estimate was of AFE quality and based on firm commitments for the major equipment. Gibson noted that it would be necessary to install an additional pump at the mid-point booster station to increase the capacity to 8600 m^3/d. In 1996 dollars, the incremental capital cost to install the additional pumping and associated equipment was estimated to be $300 000, while annual operating costs for an 8600 m^3/d scenario would be approximately $1.8 million. Gibson also noted the capital costs were based on fall construction and the incremental costs for winter construction would be in the range of $2.2 and $3.0 million.

Gibson and ELAN stated that they were prepared to accept any economic risk associated with the pipeline, and the chance that third party volumes would not be moved on the system. They submitted that the Board did not have to protect them from their own business decisions.

3.3.2 Views of Husky

The initial capacity of the proposed Husky Lindbergh to Hardisty blended heavy crude oil pipeline was proposed to be 5690 m^3/d. Husky stated that the capital costs expressed in terms of mid 1996 dollars, for the pipeline and the required station modifications, was estimated to be $26.0 million, much less than for the proposed Gibson project. Husky stated that to increase the capacity to 8740 m^3/d, a mid-point booster station would be required at a cost of $3.4 million. Husky estimated the annual operating costs at start-up to be $580 000, with an increase to $1 089 000 per year for the design incorporating a mid-point booster station.

Husky tabled three scenarios for expanding its existing system, which would include additional pump stations and looping from Wainwright to Hardisty. All three of the alternatives had a greater capital and operating cost then the proposed pipeline. The cost of two of the alternatives was within the range of the proposed pipeline project. The alternative of looping the existing system would produce a more circuitous route, with a greater distance, and would incur greater operating costs. The proposed pipeline would bypass the existing operationally

complex system, and would provide the best operating and capital cost profile over time. Husky stated that it would be at economic risk for the pipeline and not its shippers.

Given the timing and significant design change at a late stage of the regulatory review, Husky questioned Gibson's estimate of capital costs. Husky agreed that Gibson could realize a small saving in moving from a dual line to a single insulated line. Husky believed, however, that Gibson had understated the cost of its project because Gibson had not considered critical design parameters, such as the lower limit for temperature or viscosity which the system could tolerate during prolonged shutdown, pipe wall thickness, and the reduced operation life of screw type pumps.

3.3.3 Views of the Board

The Board accepts that the actual cost of the ECHO pipeline may be greater than $31 million, and cost more than the Husky alternative. However, the differences are unlikely to render the project uneconomic. The Board notes that the economic justification for the Gibson project is provided by the ELAN volumes alone at a production level that ELAN anticipates to be at by the end of 1996. The Board also notes that Gibson and ELAN are prepared to accept any economic risk associated with the ECHO pipeline. Considering that both pipelines will be operating in the same market, it is likely that market considerations will dictate the commercial terms and cost of service. The Board believes that competitive transportation service in the area will increase market efficiency and provide competitive rates for shippers.

3.4 Tariffs

3.4.1 Views of Gibson

Gibson stated that the initial tariff at a flow of 3200 m^3/d would be $8.50 and if the pipeline were to operate at full capacity of 8600 m^3/d the tariff would be reduced to $3.80 plus a terminal fee of $1.00. Gibson noted that with third party volumes being transported on its proposed pipeline, the tariff payable on the ECHO pipeline system quickly falls below that payable to Husky, even under Husky's most recent offer to ELAN. Gibson also noted that Husky's contracted rates with its shippers were minimum rates subject to escalation, as contrasted with Gibson's pipeline rates which could be expected to decrease significantly as throughput grew. Gibson argued that the Board did not need to second guess ELAN's assessment of the benefits it was to receive from this project.

3.4.2 Views of Husky

Husky stated that the evidence provided showed that the tariff differential between the Husky and Gibson proposal was significantly in favour of the Husky project. Husky indicated that under all of the ELAN volume forecasts there was a substantial tariff saving with the Husky tariff offer. Husky indicated that the reason its tariff analysis might show the Gibson alternative

was inferior because Husky's analysis did not take into account crude oil price differentials for the different IPL streams and did not include third party volumes.

3.4.3 Views of the Board

The Board notes that the tariffs initially proposed by Gibson are higher than those offered by Husky but, with the likely addition of third party volumes on the ECHO pipeline, the tariff falls below that of Husky. The Board accepts ELAN'S assessment that there are other benefits it derives from this project which are not accounted for in the tariff structure. The Board notes that none of the existing Husky shippers were opposed to the application and the majority supported the Husky application. Overall, the Board believes competing pipelines offer some economic efficiency for the producers and it does not find that there are any significant economic impacts from the Gibson or Husky proposal which would adversely affect the public. The Board believes both proposals are in the public interest and should be approved.

4 AEC PROPOSAL

The AEC pipeline application was originally submitted as a possible alternative to supply diluent to the Gibson/ELAN pipeline. With the Gibson change to a heated pipeline concept the possible direct need for that market has been eliminated.

4.1 Views of AEC

The AEC pipeline is designed to transport up to 2900 m^3/d of condensate for use in the general Lindbergh/Elk Point area. AEC was of the view there would ultimately be a need for additional condensate in the area regardless of the Gibson situation, based on its own forecast of heavy crude oil production for six companies in the area, including ELAN. The forecast showed heavy crude volumes increasing from 7000 m^3/d for 1996 to more than 11 200 m^3/d sometime in the future. This would represent an incremental need for some 1050 m^3/d of condensate. AEC submitted that its proposed pipeline would compete with the existing Husky condensate pipeline, whereas the Husky proposed alternative would not introduce a competitive alternative. AEC indicated that introducing competition into the Husky domain could produce benefits and toll savings for shippers. AEC indicated that it did not review alternatives to the proposed application prior to making the application.

While AEC suggested that there was presently unused capacity on its Cold Lake diluent pipeline, which the Lindbergh lateral would tie into, it indicated that the current shippers on its condensate system expected the pipeline to be fully utilized by 1997. AEC stated that it anticipated an expansion of its existing system next year to meet current shipper demand. AEC could not comment on whether the tariff would be a single tariff from Edmonton to Lindbergh or separate tariffs from Edmonton to LaCorey and from LaCorey to Lindbergh. It stated that existing shippers on the Cold Lake pipeline would not be negatively impacted by the Lindbergh addition.

AEC stated that it would not build the pipeline unless in the view of AEC's management it was

an economic venture. At the time of the hearing, AEC had no contracts in place to ship condensate. While it indicated that it received verbal support for the pipeline, there was no documented evidence for that support. AEC believed it was unrealistic to expect it to come forward with signed shipper contracts, because a Board approval was a prerequisite to ensure its customers that AEC would be able to meet their transportation needs. AEC believed that producers were not in a position to make their business decisions in advance of the regulatory process.

AEC stated that if the Board considered that there was sufficient existing capacity to meet current or possible future condensate needs, then no new pipeline was required. AEC submitted that if the Board conferred a monopoly status on the existing supplier, it would be inconsistent with the philosophy for deregulation. AEC stated that proof of whether the pipeline was needed would be determined by whether the pipeline was successful in securing the commitments from shippers.

4.2 Views of Others

Gibson had no comment as to whether the AEC application was needed. It did state that if Gibson needed condensate it would investigate using the AEC pipeline if it were built, but at the time of the hearing Gibson did not foresee a need for significant volumes of condensate.

Husky stated that it did not object to the AEC application, but it was not certain the AEC proposal passed the minimum threshold to establish need in that AEC had no signed shippers or contracts. Husky believed there were sufficient volumes of condensate entering the area and that there was sufficient capacity to meet the needs as forecast. Husky noted that the size of the pipeline AEC was applying for matched the existing Husky Lindbergh to Cold Lake condensate line. It believed that an alternative to the AEC proposal would be for AEC to construct a 168.3 mm pipeline between Cold Lake and LaCorey terminals, a distance of 16-km, and tie into the existing Husky system. If condensate was needed in the Lindbergh area Husky would reverse the flow direction of its pipeline to flow north to south. Husky believed this proposal would create the minimum amount of environmental and land disturbance and maximize utilization of existing infrastructure. Husky indicated that discussions would continue concerning the 16 km AEC alternative, even if AEC's is application was approved.

Imperial, a shipper on the existing AEC condensate pipeline from Edmonton to Cold Lake, was opposed to the AEC application because "it failed to demonstrate that the proposed pipeline is economic, orderly, efficient, and in the public interest; that there is a need for the pipeline". Imperial understood that AEC's only commitment to the proposed line was the AEC Frog Lake facility which would require 50 to 100 m^3/d of condensate. Imperial believed this commitment did not justify a 2900 m^3/d pipeline. Imperial noted that AEC did not submit any evidence as to tariff rates or whether the applied-for pipeline was an economic and efficient development. Imperial believed that there was potential for cross-subsidization by the shippers on the existing AEC mainline system. Imperial believed that subsidization of one facility by another might distort the competition and economics in the marketplace. Imperial submitted that AEC had not demonstrated that there would not be subsidization of the Lindbergh line.

4.3 Views of the Board

The Board accepts AEC's submission that the AEC application does not raise associated environmental, social, or safety issues. However, the Board is also charged with a mandate to assure facilities are needed and are only developed if they are economic, orderly, and efficient in the public interest.

The primary test to determine the need for a pipeline is whether it is reasonable to expect that a sufficient market will be available to support the development. In the Board's view, AEC has not met that expectation. The need for new market demand for diluent is poorly defined, unsubstantiated and the Board has no evidence to indicate that current or expanded facilities for diluent in the area could not meet all market expectations or that current transportation tariffs suggest market inefficiencies. The evidence suggests little or no producer support for the AEC project. Rather, some reservations were expressed about the need for the pipeline.

In specifically addressing the question of need, the Board notes that the forecast submitted by AEC to justify its condensate pipeline was not disputed by either Gibson or Husky. However, the Board notes that AEC included the ELAN volumes which would be moving on the Gibson pipeline and which would not require condensate. The Board accepts that with the increased production forecast, additional volumes of condensate may be needed in the area. However, it is plausible that some of that production will move on the Gibson system without the further need for diluent. It is also reasonable to expect that as field developments occur, the critical demand for diluent may prompt alternative alignments for the pipeline. However, given the lack of market definition, it is difficult for the Board and affected parties to evaluate possible alternatives or to identify the long term implications for the project. The Board is not prepared to licence facilities only on speculation that there may ultimately be a need for those facilities.

The Board disagrees with AEC that a regulatory approval is a prerequisite for customers to be able to determine their transportation needs. The Gibson/ELAN application is a prime example of producers/operators making a decision well in advance of the regulatory process. The Board also rejects the argument that denial of the application will lead to a transportation monopoly for diluent in the area. The Board believes that adequate regulatory instruments exist to prevent undue market power by a single company and that existing regulatory policy allows for competitive developments where they are found to be in the public interest.

The Board agrees with Imperial that AEC does not appear to have fully investigated and documented the impact of its application on its existing shippers, given that AEC was unable to comment on the tariffs for its proposed pipeline. Given the lack of information, affected parties are not in a position to respond. While the Board agrees with Imperial that the cross-subsidization by existing AEC shippers would not likely be appropriate, the Board would expect this matter to be resolved in advance of a future application.

Competition was cited by certain parties as a factor for the Board's consideration in reviewing the application of AEC as well as those of Gibson and Husky. The Board agrees that

competition amongst the suppliers of services may well be in the public interest. However, the Board does not accept that a pipeline approval should be issued unconditionally, purely to promote competition. In the Board's view, it must be satisfied that there is the need for more facilities and that it has heard from affected parties. Only then will the Board consider whether a certain application has the benefit of introducing increased market competition in an area. Ultimately the Board is obliged to assure that all new facilities are economic, orderly, and efficient developments in the public interest.

5. DECISION

The Board concluded that the Gibson and Husky pipelines were in the public interest, and would meet all applicable regulations and requirements. The Board therefore approved Application No. 960345 and Application No. 960495. The Board does not believe the evidence shows there is a need for AEC's proposed pipeline at this time, and therefore the Board denies Application No. 960643 without prejudice.

DATED at Calgary, Alberta, on 11 April 1997.

ALBERTA ENERGY AND UTILITIES BOARD

F. J. Mink, P.Eng.
Presiding Member

A. C. Barfett
Board Member

B. T. McManus, Q.C.
Board Member

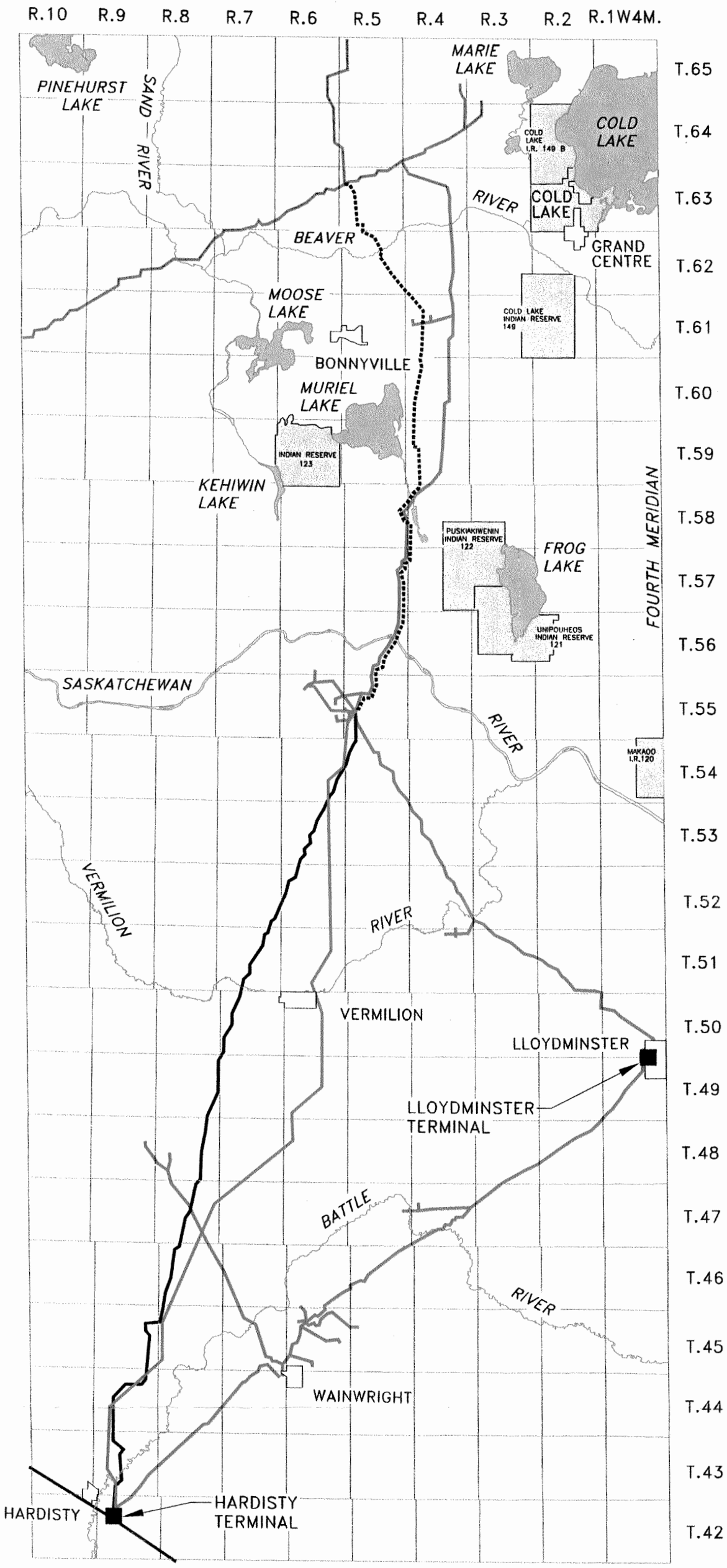

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FIGURE 1
COLD LAKE TO HARDISTY
Application No. 960354, 960495, 960643

GIBSON PETROLEUM COMPANY LTD, HUSKY OIL OPERATION LTD, ALBERTA ENERGY COMPANY LTD

LEGEND

- Existing Husky Heavy Oil Pipeline System
- Interprovincial Pipeline
- Existing AEC Pipeline System
- Proposed AEC Pipeline, Application No. 960645
- Proposed Gibson Pipeline, Application No. 960354
- Proposed Husky Pipeline, Application No. 960495