



Ken Donajkowski
Vice President

Health, Safety & Environment
P.O. Box 100360
Anchorage, AK 99510-0360
Phone 907.263.4682
Fax 907.265.6335

May 3, 2007

Mr. Tom Chapple
Director of Air Quality
Alaska Department of Environmental Conservation
Division of Air and Water Quality
555 Cordova Street
Anchorage, Alaska 99501

RECEIVED
MAY 03 2007
DEC
Division of Air Quality
Director's Office

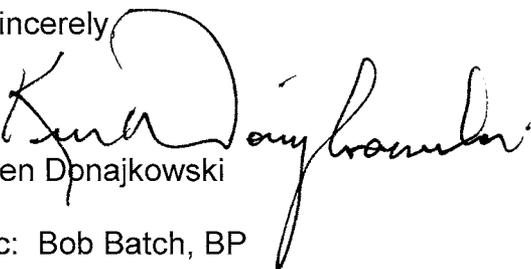
Dear Mr. Chapple:

In response to your request of April 13, ConocoPhillips has prepared a brief white paper on the feasibility of transporting ultra-low sulfur diesel to the North Slope. The paper addresses ULSD supply sources, North Slope user demand, infrastructure capacities, transportation logistics and potential risks. While specific costs per gallon are not addressed, economic modeling of importing ULSD versus manufacturing ULSD on the North Slope currently incentivizes North Slope industry to construct its own facility on the North Slope.

As a separate attachment, the current project schedule for the Kuparuk ULSD facility is provided. The table shows up to a one-year delay in commissioning and start-up from the previous schedule.

If you require additional data on any of the information provided herein, do not hesitate to contact myself or Steve deAlbuquerque.

Sincerely


Ken Donajkowski

cc: Bob Batch, BP

Introduction

Alaska Department of Environmental Conservation (ADEC) has requested ConocoPhillips prepare a white paper on the feasibility of delivering ultra-low sulfur diesel (ULSD) to the North Slope on a short-term basis. North Slope users of ULSD are predominantly within the oil & gas industry, including field operators, explorers and their contractors. This paper presents ConocoPhillips' understanding of ULSD supply sources, logistics and potential risks, given the demand of North Slope industry.

North Slope Demand

Demand for North Slope (regular) diesel is currently and primarily satisfied by production from two North Slope topping plants; one at Prudhoe Bay field and the other at Kuparuk field. Future North Slope ULSD requirements will be met by upgrading the Kuparuk field's topping plant to produce up to 2,700 barrels per day (bpd) on an annual average basis.

Table 1 below shows the estimated annual average volumes of ULSD that would be required on the North Slope under the EPA "urban" guidelines as referenced in the Transition Agreement, amended November 2006.

Table: 1 ULSD Volumes – EPA "Urban"

EPA ULSD Volumes (BPD)	2007	2008 & 2009
Kuparuk River Unit	259	378
Prudhoe Bay Unit	207	311
Alpine	0	0
CPAI Exploration	0	0
Other BP Operated Units	77	113
Third Party	0	0
Total	542	803

In Table 1, the volumes assume that industry would only import sufficient ULSD volumes to enable EPA specifications to be met. For example, in 2007 industry would blend imported ULSD with the existing North Slope diesel to meet the less than 500ppm (Low Sulfur Diesel (LSD)) "Off Road" requirements. Field operators would need to ensure that multiple fuel systems were available at all locations to enable the appropriate fuel to be used in the appropriate equipment.

In reality, it would not be practical to install multiple fuel systems across the North Slope. Industry would therefore import ULSD to cover both LSD needs and, where applicable, external combustion source needs. Table 2 shows the estimated annual average ULSD volumes associated with a practical fuel infrastructure scenario.

Table: 2 ULSD Practical Demand Import Volumes

ULSD "Urban" Volumes (BPD)	2007	2008 & 2009
Kuparuk River Unit	378	827
Prudhoe Bay Unit	325	848
Alpine	0	0
CPAI Exploration	0	0
Other BP Operated Units	109	237
Third Party	118	184
Total North Slope	930	2096

As stated, the volumes shown in Tables 1 and 2 are annual average demands. Actual consumption is seasonal, with peak demand (March/April) being almost double the annual average.

ULSD Supply Sources

From January 2009 until the start-up of the Kuparuk plant, ULSD could be transported to the North Slope from other providers. ULSD provided to North Slope industry under this scenario is termed "imported". There are only limited, practical sourcing options for importing ULSD.

Tesoro's Kenai Refinery is Alaska's only current producer of ULSD. Tesoro built a 10,000 bpd diesel desulfurizer unit, which was substantially complete in the first part of 2007. According to one public source, Flint Hills co-invested with Tesoro to build the desulfurizer unit. In return, Flint Hills was allotted a minimum in-state supply of 6,000 bpd under a five year agreement. Given the timeline of Tesoro's desulfurizer project relative to announcement of North Slope industry's plans to build a separate desulfurizer, it is assumed that Tesoro sized their 10,000 bpd desulfurizer to meet Alaska ULSD demand less North Slope ULSD demand.

ULSD sourcing is also available from the US West Coast and Canada. Non-state supplies of ULSD do not, however, meet unique arctic fuel specifications. Diesel fuels used in arctic conditions are formulated differently than diesel manufactured throughout most of the Lower 48 and Canada, including different cloud and pour point specifications. Thus, producing arctic diesel would be a custom manufacturing run for a Lower 48 refinery, requiring larger volumes to be produced and shipped at one time. The associated cost of importing from non-Alaska sources would need to compete against the pricing, and availability, of in-state supply.

Between Tesoro and Flint Hills distribution activities, ULSD will be available in some quantity at various locations throughout the State. Neither Flint Hills nor Tesoro has publicly commented on where their respective volumes of ULSD will be transported for sale. However, it is expected that in the short term we would be able to source a large percentage of the North Slope's average ULSD demand from Fairbanks and/or Kenai. During peak demand periods, it is unlikely that in-State suppliers will be able to meet all of the North Slope's ULSD requirements. It is expected, therefore, that some out-of-state supply would be required.

Transportation - Infrastructure

Importation of ULSD to the North Slope requires infrastructure to move, terminal, store and distribute the petroleum product (see Figure 1). Movement is achieved via the use of pipelines, railroads and/or tractor-trailers. Terminals utilize tank car loading/unloading and/or truck loading/unloading infrastructure. Storage is achieved via use of tanks approved and permitted for petroleum products. Distribution activities utilize trucks to deliver the fuel to the end-use equipment.

Pipelines

Tesoro operates a common-carrier product pipeline which runs from the refinery in Nikiski to Tesoro's terminal facility located at the Port of Anchorage. The pipeline has a capacity of approximately 40,000 barrels of petroleum products per day. Information regarding the excess capacity or expansion viability of this pipeline to handle additional ULSD shipments has not been verified.

Terminals

The Nikiski Terminal facility, operated by Tesoro, consists of a tank truck loading rack and six storage tanks providing a total storage capacity of approximately 200,000 barrels. There is also a marine dock at this facility.

The Port of Anchorage is a marine terminal providing facilities that handle most of Alaska's refined petroleum products. Existing petroleum tankage is currently under lease by other companies, which limits options for ULSD import storage. Additional tankage is called for under the Port's Expansion Plan. While this new tankage could be used for ULSD storage, the timeline for the Port Expansion would put construction of new tanks several years away.

Several oil companies, not including ConocoPhillips, utilize the Port and nearby area as a petroleum terminal, including Tesoro and Flint Hills. Flint Hills annually offloads about 35,000 rail cars at this location.

Flint Hills also has loading and unloading facilities at their Fairbanks refinery as well as some tankage; all of which is currently utilized. As Fairbanks is a key logistical location for importing ULSD, if adequate storage is not currently available, then additional storage would have to be built.

Railroad

In addition to the 35,000 rail cars hauled annually for Flint Hills, the Alaska railroad operates fuel trains from Anchorage to Whittier and Seward. It is assumed that additional ULSD volume could be handled with existing rail infrastructure from Anchorage to Fairbanks. Alternatively, if new or updated rail cars are needed, production/retrofits could take up to two years.

Tractor Trailers

In discussions with Carriers, existing fleet capacity could not be stretched to meet a short term import scenario. Any import scenario utilizing tractor-trailers would require twelve to twenty-four months of lead time to manufacture and acquire the additional, specialized tankers needed to operate on the Dalton Highway. Tractor manufacture and acquisition would take a shorter four to six months. While Carriers report a shortage of qualified drivers, it is assumed that drivers could be retained and HAZMAT trained within equipment procurement timeframe. Significant capital investment on the Carrier's part and a multi-year contractual commitment on the shipper's part would be needed to recoup the investment.

Tanks

There is currently insufficient tank capacity on the North Slope to handle large bulk shipments of ULSD. To partially meet this ULSD storage need, there are some existing tanks at Prudhoe that

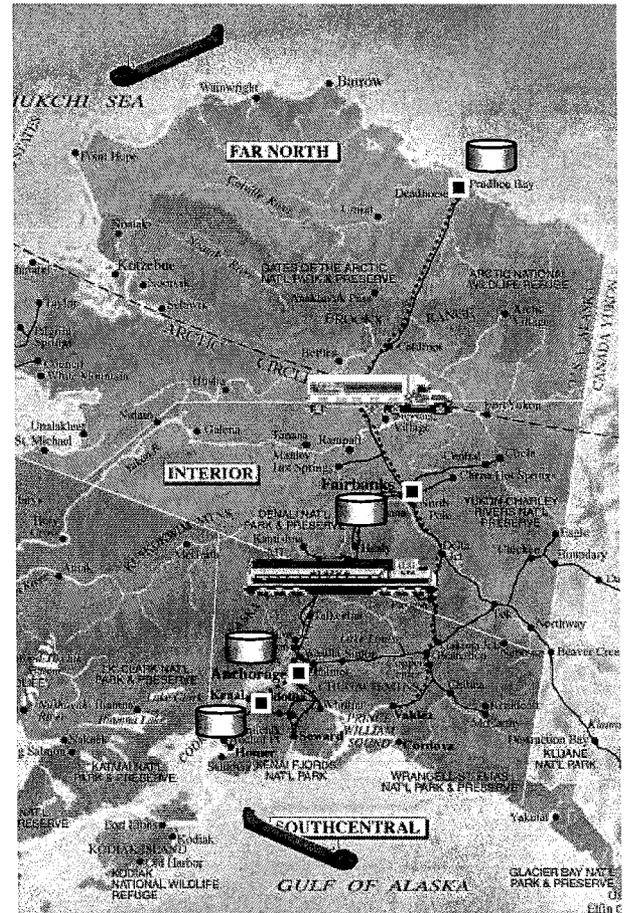


Figure 1: Potential ULSD Import Infrastructure

could possibly be overhauled for ULSD service. Prudhoe's operator would have to confirm any tank availability for ULSD. Other North Slope fields, however, do not have sufficient storage capacity for large volume deliveries and depend on small, frequent fuel deliveries to maintain operations.

North Slope Weather Conditions

The North Slope road system operates under restrictions imposed by the weather. In whiteout conditions (Phase III), road travel is closed; restricted to critical/emergency vehicles. In Phase II conditions (poor visibility), convoy travel is required with radio communications between vehicles. In Phase I conditions (reduced visibility), travel is permitted by individual vehicle only with extreme caution. These restrictions help reduce risks associated with North Slope travel, but will also impact the deliverability of ULSD.

Under spring/summer flooding conditions, the Kuparuk bridge becomes impassable for annual periods averaging about a week. This inability to provide ULSD to the western slope on a continual basis, given low storage capacity, would cause operational upsets.

Kuparuk Desulfurizer Project

Preliminary cost estimates indicate the year delay on Kuparuk's desulfurizer unit startup will add another \$47MM to the total project cost. This additional cost significantly lowers the project's economics.

In conjunction with building the desulfurizer, a storage and distribution (S&D) installation is to be built. This S&D infrastructure will be completed in tandem with the hydrotreater construction. For a short term importation scenario, Kuparuk could try to accelerate the S&D project to offset a portion of the import storage needs.

If this project is not accelerated, existing North Slope storage and distribution contractors will need to be utilized. At this time, we are not certain of their capabilities to handle the level of ULSD storage/distribution required.

While infrastructure does exist to move petroleum products throughout Alaska, additional investment in people, equipment and infrastructure will be required to safely import ULSD to the North Slope, even on a short term basis.

Options for Importation

Given North Slope demand, potential suppliers and transportation infrastructure, two generic options exist for short-term importing of ULSD.

Option One

The first option is based on supply from an in-State refinery. Under short term importation, ULSD would be procured ideally as FOB Fairbanks and then transported via tractor-trailer to North Slope. Alternatively, ULSD would be procured FOB Nikiski and then transported via pipeline to Anchorage, rail to Fairbanks and tractor-trailer to North Slope.

Option Two

The second option is based on out-of-State supply. ULSD would be procured from a West Coast refinery and then transported via barge to Kenai, pipeline to Anchorage, rail to Fairbanks and tractor-trailer to North Slope. As an alternative to barging to Kenai, it may be possible to barge direct to Anchorage or direct to the North Slope. Each of these options has its own constraints. For example, as previously mentioned, out of state suppliers do not routinely manufacture arctic-grade ULSD.

During periods of peak demand, a combination of Options 1 and Option 2 may be required to provide sufficient fuel for uninterrupted North Slope operations.

Risks Associated with Import Options

Contamination

ULSD requires special handling to eliminate the risk of sulfur from other petroleum products contaminating the ULSD. Batch product shipments in pipelines are subject to transmixing. Rail cars loaded with regular diesel on one shipment can not be subsequently loaded with ULSD without sulfur contamination taking place. Tractor Trailers are subjected to the same product contamination issues. Not utilizing a single fuel system increases the risk of exceeding sulfur specifications via product contamination; increasing the number of transfers of product between storage and transportation tankage further increases the risk of off-spec (> 15ppm) ULSD arriving at the North Slope..

Capital Costs

For a very short term importation, North Slope industry would try to minimize capital expenditures by working within existing infrastructure limits. This would not be tenable in a longer term as existing infrastructure can not handle the required volumes. Capital modifications to existing infrastructure, needed for a long term importation scenario, are estimated to range from \$50 million to \$70 million. This capital could reach up to \$200 million if ULSD is transported directly, via barge, to the North Slope. Capital estimates include new storage tank costs and truck rack modifications to expand infrastructure. The risk of installing this infrastructure is, however, its continued use in lieu of North Slope ULSD production.

North Slope Barging

Barging ULSD to the North Slope is not a preferred option due to higher potential risks including: unexpected weather or equipment problems that could result in missing the narrow delivery window in the summer, permitting difficulty/issues, technological challenges in building on the slope and cultural issues (e.g. whaling season). For a short term importation, industry would likely propose using the barges as year-round tanks. The availability of barges that could store fuel and withstand the winter ice flows has not been researched.

Tractor-Trailers

Moving fuel 500 miles from Fairbanks to North Slope via the Dalton highway will require thirteen tractor trailers per day. This equates to a fleet of thirty-three tractor trailers on the Dalton highway on a yearly average basis. With seasonal swings in ULSD demand, additional tractor trailers will be needed during the winter season, less in the summer season. At peak times, more than fifty trucks will be traveling the Dalton Highway.

In addition to potentially inclement weather driving conditions, the majority of the Dalton highway is a gravel surface with infrequent shoulders. Significant grades are found in mountainous areas and roadside/emergency services are sparse. Truck traffic is common to the Dalton highway, but the additional trucking of ULSD through northern Alaska generates further safety and environmental risk.

A review of trucking incident reports indicates a probability of one ULSD spill for every 400 round-trip journeys from Fairbanks to the North Slope. The spill quantity could be small, medium or large, as could the environmental impact of the spill. A small event could be the spill of ULSD from the tractor's saddle tanks onto land. A large event could be the spill of thousands of gallons of ULSD into flowing water. Probabilities around the size of the spill were not conducted, but the impact of any spill has legal, economic, public and environmental consequences.

As a specific example of tractor-trailer risk, during a ten-day diesel outage on the North Slope in 2004, fifty-four truckloads of diesel were imported from Fairbanks to the North Slope. Two tankers were blown off the road while returning to Fairbanks empty. Numerous other near misses were reported during that window.

Relatedly, spill risk comes from rail transport. The last major diesel spill by rail was in 1999 with approximately 100,000 gallons of diesel spilled as a result of a derailment near Talkeetna

(between Fairbanks and Anchorage). Remediation was very difficult due to no road access. The spill was within 1,000 feet of the Susitna River, so speed of remediation was also an issue.

Market Risk

ULSD is an expensive fuel, due in part to high federal and state fuel taxes. The federal tax per gallon for diesel fuel is 24.4 cpg, six cents higher than the federal gasoline tax. According to API for March 2007, Alaska's state tax (including sales taxes, gross receipt taxes, oil inspection fees, underground storage tank fees and/or miscellaneous environmental fees) is an estimated 32.4 cents for diesel, also six cents higher than the State gasoline tax. In taxes alone, the Alaska consumer pays 56.8 cents in taxes for every gallon of ULSD purchased.

ULSD is also an expensive fuel because it costs more to produce. This manufacturing cost is passed along to consumers, estimated at 3-5 cents per gallon (cpg) over LSD.

The balance of ULSD supply and demand represents a price risk to the Alaska consumer. The 10,000 bpd desulfurizer built by Tesoro did not allow for North Slope ULSD volumes. The creation of an ULSD import situation for North Slope users therefore generates a cost risk to the Alaskan consumer under ULSD supply/demand imbalances. Depending on the magnitude of this imbalance, the price urban and rural consumers pay for ULSD in Alaska could be negatively affected.

Conclusion

Importing ULSD to the North Slope for a short period is physically possible. However, given supply availability, new infrastructure requirements (tractors, trailers, storage tanks, et.al.) and associated risks, it would be difficult to achieve without significant upfront planning. Of the risks identified, the environmental concerns associated with forecasted trucking incident rates from Fairbanks to the North Slope are of the most concern.

Lastly, should significant infrastructure be built to temporarily import ULSD, North Slope industry may become financially disincentivized to invest in a North Slope ULSD plant. Adding infrastructure to store and distribute hydrocarbons is an expensive undertaking. Once this capital is spent, a North Slope ULSD facility is unlikely to compete from economic perspective against a long term import solution.

