

December 7, 2017

Mr. Jason Walsh State Pipeline Coordinator's Office 3651 Penland Parkway Anchorage, AK 99503

RE: Supplemental Information for the Donlin Gold Natural Gas Pipeline State Pipeline Right-of-Way Lease Application (ADL 231908)

Dear Mr. Walsh:

Donlin Gold submitted its application for a state pipeline right-of-way lease under AS 38.35 in 2014. Since our submittal we have made several modifications to the Donlin Gold Natural Gas Pipeline, Plan of Development (PoD). The purpose of this letter is to make you aware and provide information regarding three such modifications to the PoD to assist you in continuing to process our application. The current Plan of Development (PoD Revision 1) that we provided to you previously would be revised following completion of the federal issuance of the Environmental Impact Statement EIS Records of Decision. In the meantime, Donlin Gold's intent is to work with your office to ensure that you have the information you need at this point in your adjudication process to proceed with our ROW lease application.

The following three proposed modifications to the Donlin Gold PoD for the Proposed Natural Gas Pipeline Project are addressed:

- 1. Electric Power Transmission Line from Beluga to Compressor Station no longer required
- 2. Modification of the Compressor Station to include electric power generation
- 3. Rerouting the proposed pipeline to include the North Route Alignment of approximately 27.2 miles (43.8 km) from MP 84.8 to MP 112.

Although there are or may be additional modifications or refinements in length of specific construction sections within Spreads 1 and 2, camp movement sequence, construction seasons, and other changes, these more detailed items will be addressed in the Pipeline Construction Execution Plan and in the PoD Revision 2 when completed.

The information provided in this letter is based on current information that is being reevaluated and refined. All locations remain approximate as actual requirements and locations will be more accurately determined as the project progresses to final design.

If any additional information is needed, please do not hesitate to contact me.

Sincerely,

Dan Graham

Permitting and Environmental Manager

CC: Cathe Heroy, SPCO

Proposed Modifications to the Donlin Gold PoD for Proposed Natural Gas Pipeline Project

1.0 Electric Power Transmission Line from Beluga to Compressor Station no Longer Required

Donlin Gold proposed in its PoD Revision 1, Section 8.5.4: Electric Transmission Line, to construct a medium voltage (MV) aboveground transmission line between the Beluga Power Plant substation and the Compressor Station at MP 0.4 to meet the operational needs of the Metering Station and Compressor Station. The distance of the proposed electric transmission line under that initial proposal was 8.1 miles (13 km). Following additional review and evaluation of the proposed construction, use of the transmission line, and the alternative to utilize the compressor station facility after installation of additional equipment to generate power to both operate the compressor station as well as the metering station, Donlin now proposes to eliminate the proposed overhead transmission line and instead generate power at the compressor station. Donlin Gold proposes to run a short-buried transmission line approximately 0.4 miles (0.6 km) from the compressor station to the metering station. The buried line would be in a separate right-of-way (ROW) adjacent to or co-located with the pipeline ROW, in compliance with applicable regulatory requirements.

Refer to Attachment 1: Electric Transmission line and Fiber Optic Cable, Figure 8-4 from PoD Rev. 1. This figure depicts the location of the electric transmission line that would no longer be required.

2.0 Modification of the Compressor Station to include Electric Power Generation

Donlin Gold proposed a Compressor Station (described in the PoD Rev. 1, Section 8.5.3), to supply electric power to the compressor station by constructing an 8.1 mile (13 km) overhead transmission line from the Beluga Power Plant substation to the Compressor Station. Following additional review and evaluation of the proposed construction, use of the transmission line, and the alternative to utilize the compressor station facility after installation of additional equipment to generate power to both operate the compressor station as well as the metering station, Donlin Gold now proposes to instead generate electric power at the compressor station and run a buried electric transmission line the approximately 0.4 miles (0.6 km) to the metering station.

The estimate of acreage identified in Table 4-1, Calculation of Estimated ROW Acreage (PoD Rev. 1, page 4-3) for the transmission line would be reduced to reflect only the 0.4 miles (0.6 km) for the buried electric transmission line from the compressor station at MP 0.4 to the metering station at MP 0.

The compressor station will have two main components: natural gas compression machinery with after-coolers to reduce gas temperature following the compression process; and electrical generation machinery.

Two microturbines would be used for electrical power generation (a 100% unit with a 100% backup) for the compressor station and metering station operations, station yard lighting, emergency lighting, and provide for emergency uninterrupted power.

Please refer to Attachment 1 for the location of the compressor station and metering station which would remain located at MP 0.4 and MP 0 as depicted in Figure 8-4.

Donlin Gold 1 December 2017

3.0 Rerouting the Proposed Pipeline to include the North Route Alignment from Approximately Happy River to Threemile Creek Valley

The North Route departs the PoD Rev. 1 proposed alignment at approximately MP 84.8 and rejoins at approximately MP 112. The length of the North Route is approximately 27.2 miles (43.8 km) and traverses only state lands although the North Route does cross the Happy River Remote Recreational Cabin Staking Area and proposed Happy River Remote Recreational Cabin Staking Area. The North Route also crosses an area of state mining claims held by Geoinformatics Alaska Exploration, Inc. and, at one location, the Iditarod Trail Public Access Easement and the Iditarod National Historical Trail easement (INHT), see Attachment 2.

From approximately MP 84.8 east of the Happy River, the North Route veers northwesterly and passes beneath an unnamed tributary of the Happy River at approximately MP 86.0 (flowing from the west side of McDoel Peak) utilizing a 3,220-foot (981 m) horizontal directional drill (HDD). The North Route continues northwesterly, running roughly parallel to Happy River on the river's northeast side.

Near approximately MP 91.0 the pipeline would pass beneath another unnamed tributary to the Happy River (flowing from the southeast side of Distin Peak) as a 3,094-foot (943 m) HDD. The North Route then continues northwesterly along the northeast side of Happy River, crossing Glacier Creek and Moose Creek then continues northwesterly again to rejoin the PoD Rev. 1 proposed alignment at approximately MP 112.0

The North Route is unique in that it maintains close proximity to the Happy River (approximately 0.2 - 0.5 miles (0.3 - 0.8 km) and holds to elevations within 200 ft (61 m) of the Happy River canyon rim. The route typically traverses relic alluvial terraces associated with the Happy River. Consequently, the North Route includes very little significant elevation gain or loss. The route does cross numerous minor drainages and three significant streams that would involve open-cut pipeline installation. The two tributary drainages that include steep-walled canyons with depths of 150 and 200 ft (46 and 61 m) would both require an HDD crossing method and special effort to develop shoofly roads in and out of the canyons.

In general, the soils that would be encountered along this route are likely very favorable for pipeline ROW development and trenching. The near absence of permafrost and poor soils precludes concerns with thaw consolidation and associated requirements for "strain-based design". The North Route appears to minimize or avoid wetlands and thaw-unstable permafrost.

In shifting to the North Route, Donlin would eliminate any crossing of the Happy River, and reduce impacts to wetlands and permafrost conditions, and would also have the potential for summer season construction. Wildlife impacts would vary but would not be significantly different from the PoD Rev. 1 proposed alignment, although future survey studies would be necessary to confirm.

The North Route crosses 15 streams, 2 of which are listed as anadromous in the Anadromous Water Catalog (AWC). Cut-and-fill stream crossing construction methods over fish spawning habitat would be used. The anadromous streams crossed are Moose Creek and Threemile Creek, both of which have documented sockeye salmon spawning habitat and would be crossed by cut-and-fill methods. The North Route is the only alternative of those considered in this region that eliminates crossings of all documented Chinook spawning habitats. However, thirteen of the streams crossed by the North Route have not been sampled and some may provide for resident and anadromous fish. Spawning habitat appears unlikely in any of the thirteen. None of the shoofly access routes for the North Route would cross documented anadromous fish habitat.

Although the North Route has not been surveyed to identify potential additional cultural resource sites, of the 13 cultural sites currently noted in the region by the Alaska Heritage Resources Survey (AHRS), all the sites are farther away from the North Route than from the PoD Rev. 1 proposed alignment. Aside from the INHT crossing, no site is within a half-mile of the North Route, and five are more than a mile away.

Attachment 2: North Route Footprint and Land Details also identifies the approximate locations of the shoofly access routes, temporary construction camps, material sites, airstrips, water extraction sites, pipe storage yards, and HDD Crossing locations. It also identifies that segment of the PoD Rev. 1 proposed alignment that would be eliminated by the proposed reroute to the North Route segment. Table 4-1, Calculation of Estimated ROW Acreage (PoD Rev. 1, page 4-3) would not change significantly for the estimated acreage for the pipeline, because of using the North Route.

The following modified PoD Rev. 1 tables show the changes that are the result of utilizing the North Route alignment for that segment of the proposed gas pipeline from approximately Happy River (MP 84.8) to Threemile Creek Valley (MP 112).

Location and Description of Mainline Block Valves- The mainline valve location at approximately MP 101.8 shown in the PoD Rev. 1 would be relocated to the North Route at approximately MP 100.1. Refer to the PoD Rev. 1 Section 6.10 Location and Description of Mainline Block Valves, pages 6-8, and Table 6-1 below for the repositioning of MLV-07 to the North Route.

PoD Rev. 1, Table 6-1: Mainline Valve Location Summary

No.	TAG	Approximate Milepost (MP)
1	MLV-01	MP 0.0
2	MLV-02	MP 0.4
2A	MLV-02A	MP 11.8
3	MLV-03	MP 26.7
4	MLV-04	MP 45.7
5	MLV-05	MP 64.8
6	MLV-06	MP 84.8
7	MLV-07	MP 101.80
(No longer required)		
7	MLV-07	MP 100.13
(New-North Route)		
8	MLV-08	MP 120.8
9	MLV-09	MP 137.0
10	MLV-10	MP 155.9
11	MLV-11	MP 175.3
12	MLV-12	MP 195.0
13	MLV-13	MP 214.3
14	MLV-14	MP 231.3
15	MLV15	MP 251.3
16	MLV-16	MP 271.3
17	MLV-17	MP 291.3
18	MLV-18	MP 303.3
19	MLV-19	MP 315.1

Iditarod Trail- The Iditarod National Historic Trail (INHT) corridor includes the original Iditarod Trail and Iditarod Race Trail (IRT) are treated as one linear cultural site. The INHT crosses the North Route only once, just east of the INHT's Happy River crossing. The INHT and North Route run along opposite sides of the Happy River, and the average distance between the pipeline and INHT is approximately 1.0 mile (1.6 km). Less than 0.1-mile (0.16 km) of the pipeline would fall within the 400-foot (122 m) easement for the INHT. Visibility of the pipeline from the INHT is expected to be relatively low. The North Route passes through heavily timbered areas and would be typically located on low benches above the Happy River canyon rim, and therefore likely to be below the horizon from much of the INHT. Refer to the current PoD Rev. 1 Section 8.1.1 Iditarod Trail, pages 8-1 through 8-4. The overall number pipeline crossings of the INHT corridor is substantially reduced as shown in the table below by use of the North Route. The crossings no longer required and the one crossing of the INHT are identified in PoD Rev. 1, Table 8-1 below.

PoD Rev. 1, Table 8-1: Pipeline Crossings of INHT, State of Alaska Public Access Easements for the Iditarod Trail and non-section line RS2477 Rights-of-Way

MP From	MP To	Description	Case ID	Map ID
50.5	50.6	Iditarod National Historic Trail		MAP-05
50.5	50.6	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass	ADL 222930	MAP-05
51.6	51.7	Iditarod National Historic Trail		MAP-05
51.6	51.7	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass	ADL 222930	MAP-05
57.8		Susitna-Rainy Pass Trail	RST 199	MAP-06
62.7		Susitna-Rainy Pass Trail	RST 199	MAP-06
66.9		Susitna-Rainy Pass Trail	RST 199	MAP-06
75.4		Susitna-Rainy Pass Trail	RST 199	MAP-07
78.8		Susitna-Rainy Pass Trail	RST 199	MAP-07
81.1		Susitna-Rainy Pass Trail	RST 199	MAP-07
81.8		Susitna-Rainy Pass Trail	RST 199	MAP-07
<u>85.2</u>	<u>85.6</u>	Iditarod National Historic Trail (New- North Route)		TBD
0F F	05.0	State Public Access Easement for Iditarod Trail, 400 ft wide	ADI 222020	TDD
<u>85.5</u>	<u>85.6</u>	(New- North Route)	ADL 222930	<u>TBD</u>
85.8	86.0	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass (No longer required)	ADL 222930	MAP-08
86.2	86.2	Susitna-Rainy Pass Trail (No longer required)	RST 199	MAP-08
86.4	86.9	Iditarod National Historic Trail (No longer required)		MAP-08
86.4	86.9	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass (No longer required)	ADL 222930	MAP-08
86.7	86.7	Susitna-Rainy Pass Trail (No longer required)	RST 199	MAP-08
87.1	87.2	Iditarod National Historic Trail (No longer required)		MAP-08
87.1	87.2	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass (No longer required)	ADL 222930	MAP-08
90.4	90.6	Iditarod National Historic Trail (No longer required)		MAP-08

		State Public Access Easement for Iditarod Trail, 400 ft wide,		
90.4	90.6	Susitna to Rainy Pass	ADL 222930	MAP-08
		(No longer required)		
90.9	90.9	Susitna-Rainy Pass Trail	RST 199	MAP-08
30.3	30.3	(No longer required)	101 199	WAI -00
90.9	91.1	Iditarod National Historic Trail		MAP-08
		(No longer required) State Public Access Easement for Iditarod Trail, 400 ft wide,		
90.9	91.1	Susitna to Rainy Pass	ADL 222930	MAP-08
	•	(No longer required)		
91.2	93.3	Iditarod National Historic Trail		MAP-08
31.2	33.3	(No longer required)		
91.2	93.3	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass	ADL 222930	MAP-08
91.2	93.3	(No longer required)	ADL 222930	IVIAP-UO
04.0	24.2	Susitna-Rainy Pass Trail	507.400	
91.3	91.3	(No longer required)	RST 199	MAP-08
91.5	91.5	Susitna-Rainy Pass Trail	RST 199	MAP-08
0.70	0.110	(No longer required)	1107 700	
93.7	93.7	Susitna-Rainy Pass Trail (No longer required)	RST 199	MAP-08
		Iditarod National Historic Trail		
95.1	95.2	(No longer required)		MAP-08
		State Public Access Easement for Iditarod Trail, 400 ft wide,		
95.1	95.2	Susitna to Rainy Pass	ADL 222930	MAP-08
		(No longer required) Iditarod National Historic Trail		
96.0	96.1	(No longer required)		MAP-08
		State Public Access Easement for Iditarod Trail, 400 ft wide,		
96.0	96.0 96.1	Susitna to Rainy Pass	ADL 222930	MAP-08
		(No longer required)		
97.0	97.1	Iditarod National Historic Trail (No longer required)		MAP-08
		State Public Access Easement for Iditarod Trail, 400 ft wide,		
97.0	97.1	Susitna to Rainy Pass	ADL 222930	MAP-08
		(No longer required)		
97.0	97.0	Susitna-Rainy Pass Trail	RST 199	MAP-08
		(No longer required) State Public Access Easement for Iditarod Trail, 400 ft wide,		
100.8	100.9	Susitna to Rainy Pass	ADL 222930	MAP-09
100.0	100.0	(No longer required)	ADL LLLOOD	111741 00
101.0	101.4	Iditarod National Historic Trail		MAP-09
101.0	101.4	(No longer required)		IVIAT-UJ
101.0	101.4	State Public Access Easement for Iditarod Trail, 400 ft wide, Susitna to Rainy Pass	ADL 222930	MAP-09
101.0	101.4	(No longer required)	ADL 222930	MAP-09
404.4	404.4	Susitna-Rainy Pass Trail	DCT 400	MADOO
101.1	101.1	(No longer required)	RST 199	MAP-09
104.8	105.7	Iditarod National Historic Trail		MAP-09
		(No longer required) State Public Access Easement for Iditarod Trail, 400 ft wide,		
104.8	105.7	Rainy Pass to Rohn	ADL 230122	MAP-09
.00		(No longer required)		00
146.7	146.7	Iditarod National Historic Trail over State-Owned navigable water		MAP-12
147.3	147.3	Iditarod National Historic Trail		MAP-12
147.34	147.34	Rainy Pass-Big River Trail	RST 174	MAP-12
147.34	147.34		NOT 1/4	IVIAC-12
148.21	148.29	State Public Access Easement for Iditarod Trail, 400 ft wide, Rohn to Takotna	ADL 230363	MAP-12
		INOTHE TO LANGUIA		

Mainline Camps and Camp Locations- One additional mainline camp, Glacier Creek Camp, would be constructed and utilized. The camp would be located at approximately MP 98.5. Refer to the PoD Rev. 1 Section 8.4.1 Mainline Camps and Camp Locations, page 8-32 through 8-35 and the revised table shown below that identifies the additional camp requirement.

PoD Rev. 1, Table 8-2: Mainline Pipeline Campsite Locations

Spread	Campsite	Approximate	Type of Camp/ Site Area	Seasor	of Use
		Location		Summer	Winter
1	Donlin Gold Camp	Mine Site	TBD	х	Х
	Kuskokwim West Camp	MP 247	300 Person Camp/ 16.3 acres (6.6 ha)	Х	х
	Kuskokwim East Camp	MP 234.8	300 Person Camp/ 21.8 acres (8.8 ha)	х	Х
	Big River Camp	MP 192	300 Person Camp/ 12.4 acres (5 ha)		х
	Jones Camp	MP 145	300 Person Camp/ 30.4 acres (12.3 ha)	Х	х
	Bear Paw Camp	MP 133.4	100 Person Camp/ 25.1 acres (10.2 ha)	Х	
2	Threemile Camp	MP 111.7	300 Person Camp/ 59.6 acres (24.1 ha)	Х	х
	Glacier Creek Camp (New- North Route)	MP 98.5	300 Person Camp/ Acres TBD	x	
	Happy River Camp	MP 85	300 Person Camp/ 16.8 acres (6.8 ha)		х
	Shell Camp	MP 53	300 Person Camp/ 42 acres (17 ha)		х
	Deep Creek Camp	MP 42	100 Person Camp/ 8.1 acres (3.3 ha)		х
	Beluga Camp	Beluga	TBD	Х	х

HDD Camps and Camp Locations and Work Pads- In utilizing the North Route, the HDD crossing described in the PoD Rev. 1 for the Happy River is no longer required. However, the North Route would require using HDD to cross two unnamed tributaries of the Happy River. Refer to the PoD Rev. 1 Section 8.4.2 HDD Camps and Camp Locations and Work Pads, pages 8-37 and 8-38 and the table below which shows the HDD site no longer required and the HDD sites required by the North Route.

PoD Rev. 1, Table 8-3: HDD Camps and Campsite Locations

			Sea	son o	f Use
Spread	Campsite/ Workspace Area	Approximate Milepost Location (MP)	Summe	Winter	All Season
1	North Fork George HDD Site				
	North Fork George (HDD Entry) 1.4 acres (0.6 ha)	MP 297.5	х		
	North Fork George (HDD Exit) 1.4 acres (0.6 ha)	MP 298.1	Х		
	George River HDD Site				
	George River (HDD Entry) 1.4 acres (0.6 ha)	MP 290.5	Х		
	George River (HDD Exit) 1.4 acres (0.6 ha)	MP 291.1	х		
	East Fork George HDD Site				
	East Fork George (HDD Entry) 1.4 acres (0.6 ha)	MP 282.9	Х		
	East Fork George (HDD Exit) 1.4 acres (0.6 ha)	MP 283.8	Х		
	Kuskokwim River HDD Site	1	ı		
	Kuskokwim River (HDD Entry) 1.4 acres (0.6 ha)	MP 240.1	Х	Х	Х
	Kuskokwim River (HDD Exit) 1.4 acres (0.6 ha)	MP 241.5	Х	Х	Х
	Kusko West Landing	MP 240.7	Х		
	Kusko East Landing	MP 240.4	Х		
2	Unnamed Tributary #1 of Happy River HDD Site (New- North Route) (McDoel)				
	<u>Unnamed Tributary #1 HDD Entry</u> (New- North Route)	MP 86.1	х		
	Unnamed Tributary #1 HDD Exit (New- North Route)	MP 86.7	Х		
	Unnamed Tributary #2 of Happy River HDD Site (New- North Route) (Distin)				
	Unnamed Tributary #2 HDD Entry (New- North Route)	MP 91.4	х		
	Unnamed Tributary #2 HDD Exit (New- North Route)	MP 92.0	Х		
	Geohazard Avoidance- Pipe Pass #1, #2, #3*		Χ		
	Pipe Pass #3 HDD Entry (1.27 mi)	MP 118.3	Х		
	Pipe Pass #3 HDD Exit	MP 119.5	Х		
	Pipe Pass #2 HDD Entry (1.15 mi)	MP 117.4	Х		
	Pipe Pass #2 HDD Exit	MP 118.2	Х		
	Pipe Pass #1 HDD Entry (0.80 mi)	MP 115.4	Х		
	Pipe Pass #1 HDD Exit	MP 116.6	Х		
	Happy River HDD Site (No longer required)				
	Happy River (HDD Entry) 1.4 acres (0.6 ha) (No longer required)	MP 85.7		X	

Happy River (HDD Exit) 1.4 acres (0.6 ha) (No longer required)	MP 86.4	x	
Skwentna River HDD Site			
Skwentna River (HDD Entry) 1.4 acres (0.6 ha)	MP 49.9	Х	
Skwentna River (HDD Exit) 1.4 acres (0.6 ha)	MP 50.5	Х	
Beluga Landing	MP -10.0		

^{*}HDD used for geohazard area avoidance in area located approximately between MP 116 to 119.6

Airstrips- One new airstrip would be constructed and used at approximately MP 98.74 in support of construction activities for the North Route. Refer to the PoD Rev. 1 Section 8.4.3 Airstrips, pages 8-37 through 8-39, the table below supplements that information with the additional airstrip needed for the North Route construction.

PoD Rev. 1, Table 8-4: Airstrip Locations and Construction

1 E	Name			Construction/Area	Season of Use		
		Milepost Location	(ft/m)		Summer	Winter	All Season
2	Beluga Airstrip	Beluga	5,000 ft (1,524 m)	Existing-No work	х	х	х
2 Be De Sh Ha Gla Air (No Ro Th 1 Be Joi Fa Big Ku Air	Deep Creek Airstrip	MP 42.1	3,500 ft (1,067 m)	New- Grade, cut/ fill 19.4 acres (7.9 ha)		х	
	Shell Airstrip*	MP 54.0	5,000 ft (1,524 m)	New- Grade, cut/ fill 103.7 acres (42 ha)		х	
G A (U R	Happy River Airstrip	MP 85.1	5,000 ft (1,524 m)	New- Grade, cut/ fill 86.7 acres (35.1 ha)		х	
	Glacier Creek Airstrip (New- North Route)	MP 98.7	4,000 ft (1,219 m)	New- grade cut/fill 14.7 acres (5.9 ha)			x
	Threemile Airstrip	MP 111.8	3,500 ft (1,067)	New- Grade, cut/ fill 27.9 acres (11.3 ha)	х	х	Х
1	Bear Paw Airstrip	MP133.8	4,000 ft (1,219 m)	New- Grade, cut/ fill 26.8 acres (10.8 ha)	х		
2 Be De Sh Ha Gli Air (No Ro Th 1 Be Joi Fa Big Ku Air Ku Air	Jones Airstrip	MP 144.9	5,000 ft (1,524 m)	New- Grade only, flood plain 84.3 acres (34.1 ha)	х	х	х
	Farewell Airstrip	MP 158.2	5,000 ft (1,524 m)	Existing- Grade only, surface course 139.9 acres (56.6 ha)	х	х	х
	Big River Airstrip	MP 191.6	5,000 ft (1,524 m)	New- Grade, cut/fill 62.3 acres (25.2 ha)		х	
	Kuskokwim East Airstrip	MP 235.7	5,000 ft (1,524 m)	New- Grade only 59.3 acres (24 ha)	х	х	х
	Kuskokwim West Airstrip	MP 246.2	5,000 ft (1,524 m)	New- Grade only 63 acres (25.5 ha)	х	х	х
	Donlin Gold Airstrip	Donlin Gold Camp	5,000 ft (1,524 m)	Existing- No work	х	х	х

Roads- Access to water extraction sites, material sites and shoofly roads are needed for the North Route. Refer to the PoD Rev. 1 Section 8.4.4 Roads, pages 8-39 through 8-46, and the revised table below which includes the addition of roads needed for the North Route.

PoD Rev. 1, Table 8-5: Temporary Site Access Roads

						ason of l	Jse
Name	Milepost (MP)	Length (m)	Length (km)	Type Description	Summer	Winter	All Season
Public Road Easement				Existing access from Beluga airstrip to MP 0	х	х	х
Public Road Easement				Existing Pretty Creek Road	х	х	х
AWES-0030	MP 10	0.43	0.69	Water Extraction Site Access		х	
AWES-0031	MP 10	0.23	0.37	Water Extraction Site Access		х	
AWES-0080	MP 21	0.82	1.32	Water Extraction Site Access		х	
AWES-0085	MP 22	0.46	0.74	Water Extraction Site Access		х	
AWES-0115	MP 35	1.52	2.45	Water Extraction Site Access		х	
AWES-0140	MP 39	0.85	1.37	Water Extraction Site Access		х	
AWES-0165	MP 47	0.1	0.16	Water Extraction Site Access		х	
AWES-0170	MP 48	0.33	0.53	Water Extraction Site Access		х	
AWES-0190	MP 53	0.11	0.18	Water Extraction Site Access		х	
AWES-0210	MP 56	0.05	0.08	Water Extraction Site Access		х	
AWES-0220	MP 56	0.32	0.51	Water Extraction Site Access		х	
AMS-11	MP 56	0.87	1.40	Material Site Access		х	
AWES-0245	MP 64	0.08	0.13	Water Extraction Site Access		х	
AWES-270	MP 73	0.16	0.26	Water Extraction Site Access		х	
AWES-0300	MP 84	0.12	0.19	Water Extraction Site Access		х	
AWES-0310 (No longer required)	MP 86	0.09	0.14	Water Extraction Site Access		х	
AWES-0320 (No longer required)	MP 88	0.1	0.16	Water Extraction Site Access		x	
AWES-0330 (No longer required)	MP 90	0.13	0.21			х	
AWES-0350 (No longer required)	MP 99	0.06	0.10	Water Extraction Site Access Water Extraction Site Access		х	
AWES-0380 (No longer required)	MP 106	0.26	0.42	Water Extraction Site Access		x	
AWES-0390 (New- North Route)	MP 100	0.26	0.42	Water Extraction Site Access	<u>x</u>		
AWES-0410 (New- North Route)	MP 108	0.04	0.06	Water Extraction Site Access	<u>x</u>		
AWES-0418	MP 112	0.06	0.10	Water Extraction Site Access	х	х	х
AMS-17C	MP 114	0.25	0.40	Material Site Access	х		
AWES-0460	MP 130	0.05	0.08	Water Extraction Site Access	х		
AWES-0462	MP 131	0.05	0.08	Water Extraction Site Access	х		
AWES-0490	MP 145	0.34	0.55	Water Extraction Site Access	х	х	х
AWES-0520	MP 156	0.6	0.10	Water Extraction Site Access		х	

AAS-Farewell	MP 156	2.98	4.80	Airstrip Access	х	х	х
Name	Milepost (MP)	Length (m)	Length (km)	Type Description	Se	eason of	Use
AWES-0545	MP 167	0.07	0.11	Water Extraction Site Access		х	
AWES-0615	MP 186	0.19	0.31	Water Extraction Site Access		х	
AWES-0620	MP 188	0.14	0.23	Water Extraction Site Access		х	
AWES-0625	MP 189	0.1	0.16	Water Extraction Site Access		х	
AWES-0640	MP 193	0.4	0.64	Water Extraction Site Access		х	
AWES-0650	MP 197	0.06	0.10	Water Extraction Site Access		х	
AWES-0660	MP 198	0.42	0.68	Water Extraction Site Access		х	
AMS-42	MP 213	0.24	0.39	Material Site Access		х	
AMS-44	MP 223	0.47	0.76	Material Site Access		х	
AWES-0730	MP 224	0.45	0.72	Water Extraction Site Access		х	
AWES-0750	MP 227	1.17	1.88	Water Extraction Site Access		х	
AWES-0770	MP 239	0.1	0.16	Water Extraction Site Access	х	х	х
AMS-50	MP 239	0.08	0.13	Material Site Access	х	х	х
AWP-Kusko NE	MP 240	0.7	0.11	Work Pad	х	х	х
AWES-0790	MP 241	0.14	0.23	Water Extraction Site Access	х	х	х
AWES-0810	MP 245	0.1	0.16	Water Extraction Site Access	х	х	х

Refer to the PoD Rev. 1 Section 8.4.4 Roads, pages 8-39 through 8-46. Shoofly access route additions and deletions for the north route are included in the table below.

PoD Rev. 1, Table 8-6: Shoofly Access Routes

				Sea	ason of l	Jse
Name	Approximate Milepost (MP)	Length (m)	Length (km)	Summe	Winter	All Season
SHOO-0005	MP 4.7	0.71	1.14	х	х	х
SHOO-0010	MP 11.4	0.84	1.35		х	
SHOO-0020	MP 14.3	0.48	0.77		х	
SHOO-0030	MP 16.8	0.26	0.42		х	
SHOO-0040	MP 19.8	1.06	1.71		х	
SHOO-0050	MP 45	0.31	0.50		Х	
SHOO-0060	MP 49.5	0.63	1.01		х	
SHOO-0070	MP 50.6	0.24	0.39		Х	
SHOO-0080	MP 51	0.85	1.37		х	
SHOO-0090	MP 59.3	0.15	0.24		Х	
SHOO-0100	MP 68	0.11	0.18		Х	
SHOO-0110	MP 70.5	0.09	0.14		х	
SHOO-0120	MP 75.2	0.3	0.48		Х	
SHOO-125 (New- North Route)	MP 86.5	1.09	<u>1.75</u>	<u>x</u>		
SHOO-0130 (No longer required)	MP 85.8	1.64	2.64		x	
SHOO-130 (New- North Route)	MP 87.4	0.25	0.40	<u>x</u>		
SHOO-0140 (No longer required)	MP 87	1.19	1.92		x	
SHOO-0140 (New- North Route)	MP 88.0	<u>0.21</u>	<u>0.34</u>	<u>x</u>		
SHOO-0150 (No longer required)	MP 88.1	0.33	0.53		х	
SHOO-0150 (New- North Route)	MP 90.4	<u>0.18</u>	<u>0.29</u>	<u>x</u>		
SHOO-0160 (No longer required)	MP 98.2	0.2	0.32		x	
SHOO-0160 (New- North Route)	MP 91.7	0.94	<u>1.51</u>	<u>x</u>		
SHOO-0170 (No longer required)	MP 102.6	0.63	1.01		x	
SHOO-0170 (New- North Route)	MP 92.6	<u>0.15</u>	0.24	<u>x</u>		
SHOO-0180 (No longer required)	MP 108.3	0.64	1.03		x	
SHOO-0180 (New- North Route)	MP 98.2	0.44	0.71	<u>x</u>		
SHOO-0190 (No longer required)	MP 108.7	0.37	0.60		x	

				Sea	ason of l	Jse
Name	Approximate Milepost (MP)	Length (m)	Length (km)	Summer	Winter	All
SHOO-0190 (New- North Route)	MP 100.6	0.27	0.44	<u>x</u>		
SHOO-0195 (New- North Route)	MP 102.4	<u>0.48</u>	<u>0.77</u>	<u>x</u>		
SHOO-0200	MP 115.9	0.68	1.09	х		
SHOO-0210	MP 116.6	0.78	1.26	х		
SHOO-0220	MP 119.7	0.30	0.48	х		
SHOO-0230	MP 120.1	0.36	0.58	х		
SHOO-0240	MP 124.9	0.39	0.63	х		
SHOO-0250	MP 126.3	0.21	0.34	х		
SHOO-0260	MP 126.7	0.86	1.38	х		
SHOO-0270	MP 127.5	1.22	1.96	х		
SHOO-0280	MP 128.5	0.64	1.03	х		
SHOO-0290	MP 137.1	0.14	0.23	х		
SHOO-0300	MP 137.7	0.74	1.19	х		
SHOO-0310	MP 139.8	0.59	0.95	х		
SHOO-0320	MP 141	0.17	0.27	х		
SHOO-0330	MP 142	0.13	0.21	х		
SHOO-0340	MP 142.9	1.6	2.57	х		
SHOO-0350	MP 149	0.49	0.79		х	
SHOO-0360	MP 149.6	1.27	2.04		х	
SHOO-0370	MP 167.8	0.17	0.27		х	
SHOO-0380	MP 168.2	1.03	1.66		х	
SHOO-0390	MP 182.4	0.19	0.31		х	
SHOO-0400	MP 182.9	0.67	1.08		х	
SHOO-0410	MP 186	0.24	0.39		х	
SHOO-0420	MP 191.9	0.63	1.01		х	
SHOO-0430	MP 197.1	1.06	1.71		х	
SHOO-0440	MP 234.9	3.12	5.02	х	х	х
SHOO-0450	MP 236	4.8	7.72	х	х	х
SHOO-0460	MP 240.9	6.91	11.12	х	х	х
SHOO-0470	MP 246.9	0.36	0.58	х	х	х
SHOO-0480	MP 248.5.	1.92	3.09	х		
SHOO-0490	MP 255.9	1.14	1.83	х		
SHOO-0500	MP 258.8	2.99	4.81	х		
SHOO-0510	MP 262.9	2.13	3.43	х		
SHOO-0520	MP 268.8	1.68	2.70	х		

SHOO-0530	MP 270.2	1.46	2.35	х	
SHOO-0540	MP 272.9	0.72	1.16	х	
SHOO-0550	MP 274.3	0.47	0.76	х	
SHOO-0560	MP 275.9	0.38	0.61	Х	
SHOO-0570	MP 276.9	0.46	0.74	х	
SHOO-0580	MP 277.6	0.35	0.56	х	
SHOO-0590	MP 278.6	0.59	0.95	Х	
SHOO-0600	MP 279.4	0.41	0.66	х	
SHOO-0610	MP 280.8	0.73	1.17	х	
SHOO-0620	MP 281.6	0.85	1.37	х	
SHOO-0630	MP 282.9	1	1.6	х	
SHOO-0640	MP 283.9	1.95	3.14	х	
SHOO-0650	MP 285.9	2.71	4.36	х	
SHOO-0660	MP 288	0.88	1.42	х	
SHOO-0670	MP 288.9	0.66	1.06	х	
SHOO-0680	MP 290	1.18	1.90	х	
SHOO-0690	MP 291.4	0.37	0.60	х	
SHOO-0700	MP 295.9	2.32	3.73	х	
SHOO-0710	MP 298.1	1.47	2.37	х	
SHOO-0720	MP 299.3	0.59	0.95	х	
SHOO-0730	MP 307.7	0.65	1.05	х	
SHOO-0740	MP 312.8	6.37	10.25	х	

Potential Material Sites- New material sites are proposed along the North Route and some of those proposed in the PoD Rev. 1 identified below in the table would no longer be required. Refer to the PoD Rev. 1 Section 8.4.5 Material Sites, pages 8-47 through 8-50, and the table below for material site locations, including additions and deletions.

PoD Rev. 1, Table 7-9: Potential Material Sites

				Fatimated		S	eason o	f Use
Material Site Name	Nearest Milepost (MP)	Area in Acres (ha)	Material Type	Estimated Available Volume (yd³)	Estimated Expected Usage (yd³)	Summer	Winter	All Season
MS-00	MP 0.5	13.3 acres (5.4 ha)	Gravel	50,000	30,000		х	
MS-01	MP 5.1	14.7 acres (5.9 ha)	Gravel	75,000	75,000		х	
MS-02	MP 10.2	6.2 acres (2.5 ha)	Bedrock	20,000	20,000		х	
MS-03	MP 16.6	5.6 acres (2.3 ha)	Bedrock	20,000	20,000		х	
MS-04	MP 20.1	4.7 acres (1.9 ha)	Bedrock	20,000	20,000		х	
MS-05	MP 26.1	16.5 acres (6.7 ha)	Gravel	50,000	20,000		х	
MS-06	MP 32.5	4.7 acres (1.9 ha)	Gravel	20,000	20,000		х	
MS-07	MP 36.2	3.7 acres (1.5 ha)	Gravel	20,000	20,000		х	
MS-08	MP 42.3	7 acres (2.8 ha)	Gravel	150,000	150,000		х	
MS-09	MP 45	16.1 acres (6.5 ha)	Gravel	100,000	50,000		х	
MS-10	MP 50.5	17.1 acres (6.9 ha)	Gravel	20,000	20,000		Х	
MS-11	MP 55.8	36.3 acres (14.7 ha)	Alluvial Gravel	250,000	250,000		Х	
MS-12	MP 68.3	3.6 acres (1.4 ha)	Gravel	20,000	20,000		Х	
MS-13	MP 85.3	15.9 acres (6.4 ha)	Alluvial Gravel	100,000	100,000		х	
MS-14 (No longer required)	MP 88	5.2 acres (2.1 ha)	Alluvial Gravel	20,000	20,000		x	
MS-16 (No longer required)	MP 102.9	9.1 acres (3.7 ha)	Alluvial Gravel	20,000	20,000		x	
MS-17A (No longer required)	MP 108.4	31.6 acres (12.8 ha)	Alluvial Gravel	250,000	20,000		х	
MS-14A (New-North Route)	MP 86.6	5.32 acres (2.2 ha)	<u>Gravel</u>	<u>75.000</u>	50.000	х		
MS-15A (New-North Route)	MP 98.4	11.19 acres (4.5 ha)	<u>Gravel</u>	200,000	<u>75,000</u>	x		

MS-16A	MP 108.3	4.92 acres	Gravel	80,000	40,000			
(New-North Route)		(1.99 ha)		_		X		
MS-17B (New-North Route)	MP 111.4	23.63 acres (9.56 ha)	<u>Gravel</u>	<u>150,000</u>	80,000	x		
MS-17C	MP 114.4	19.7 acres (8 ha)	Alluvial Gravel	20,000	20,000	х		
MS-18A	MP 119.9	5.3 acres (2.1 ha)	Course Colluvial	15,000	10,000	х		
MS-18B	MP 120.3	3.6 acres (1.4 ha)	Alluvial Gravel	15,000	10,000	х		
MS-18C	MP 121.3	4.6 acres (1.9 ha)	Alluvial Gravel	15,000	10,000	х		
MS-19A	MP 123.3	1.8 acres (0.7 ha)	Alluvial Gravel	15,000	10,000	х		
MS-19B	MP 124.8	13.4 acres (5.4 ha)	Coarse Colluvial	25,000	25,000	х		
MS-20	MP 127	18.5 acres (7.5 ha)	Alluvial Outwash Gravel	100,000	50,000	х		
MS-21	MP 130.3	26.5 acres (10.7 ha)	Bedrock & Alluvial Gravel	100,000	50,000	х		
MS-22	MP 133.7	21.5 acres (8.7 ha)	Alluvial Gravel	100,000	100,000	Х		
MS-23	MP 138.5	14.6 acres (5.9 ha)	Glacial/ Alluvial Gravel	50,000	20,000	Х		
MS-24	MP 144.9	20.6 acres (8.3 ha)	Alluvial Gravel	250,000	150,000	х	х	х
MS-25	MP 147.5	42.9 acres (17.4 ha)	Alluvial Gravel	1,000,000	15,000		х	
MS-26	MP 152	44.1 acres (17.8 ha)	Alluvial Gravel	1,000,000	150,000		х	
MS-27	MP 156.5	11 acres (4.4 ha)	Gravel	250,000	200,000		х	
MS-27A	MP 159.6	3.3 acres (1.3 ha)	Alluvial Gravel	100,000	100,000		х	
MS-28	MP 160.6	7.4 acres (3 ha)	Gravel	200,000	30,000		х	
MS-28A	MP 162.7	8.9 acres (3.6 ha)	Alluvial Gravel	200,000	75,000		х	
MS-29	MP 164.2	7.4 acres (3 ha)	Gravel	200,000	45,000		х	
MS-30	MP 168.2	14 acres (5.7 ha)	Gravel	250,000	125,000		х	
MS-31	MP 170.8	7.5 acres (3 ha)	Gravel	200,000	80,000		х	
MS-32	MP 174.2	11.1 acres (4.5 ha)	Gravel	250,000	100,000		х	
MS-33	MP 176.7	6 acres (2.4 ha)	Gravel	100,000	60,000		х	
MS-34	MP 178.9	5 acres (2 ha)	Gravel	75,000	50,000		х	

MS-35	MP 182.9	13.5 acres	Gravel	300,000	110,000		х	
		(5.4 ha)					^	
MS-36	MP 184.9	6.9 acres (2.8 ha)	Gravel	100,000	100,000		х	
MS-38	MP 190.9	5.2 acres (2.1 ha)	Gravel	150,000	150,000		х	
MS-39	MP 191.8	7.4 acres (3 ha)	Gravel	150,000	150,000		х	
MS-40	MP 198	18.7 acres (7.6 ha)	Gravel	150,000	135,000		х	
MS-41	MP 204.8	11.6 acres (4.7 ha)	Gravel	100,000	90,000		х	
MS-42	MP 213.2	39.5 acres (16 ha)	Bedrock	1,000,000	350,000		х	
MS-43	MP 216.8	7.8 acres (3.2 ha)	Bedrock	75,000	75,000		х	
MS-44	MP 222.4	43.5 acres (17.6 ha)	Bedrock	1,000,000	150,000		х	
MS-45	MP 225.9	24 acres (9.7 ha)	Bedrock	500,000	240,000		х	
MS-46	MP 229.9	19.6 acres (7.9 ha)	Bedrock	250,000	120,000		х	
MS-47	MP 231.9	18.5 acres (7.5 ha)	Bedrock	150,000	60,000		х	
MS-48	MP 234.9	61.8 acres (25 ha)	Bedrock	250,000	100,000	х	х	х
MS-49	MP 235.6	15.5 acres (6.3 ha)	Bedrock	150,000	150,000	х	х	х
MS-50	MP 239.4	25.6 acres (10.3 ha)	Bedrock	200,000	200,000	х	х	х
MS-52	MP 241	48.6 acres (19.7 ha)	Bedrock & Gravel	1,000,000	250,000	х	х	х
MS-53	MP 243.4	23.5 acres (9.5 ha)	Bedrock	150,000	120,000	х	х	х
MS-54	MP 247	32.9 acres (13.3 ha)	Bedrock	500,000	300,000	х	х	х
MS-55	MP 254.7	3.7 acres (1.5 ha)	Bedrock	50,000	25,000	х		
MS-56	MP 256.8	3.3 acres (1.3 ha)	Bedrock	50,000	25,000	х		
MS-57	MP 264.2	3.7 acres (1.5 ha)	Bedrock	50,000	25,000	х		
MS-58	MP 269.2	3.7 acres (1.5 ha)	Bedrock	50,000	25,000	х		
MS-59	MP 281.5	13 acres (5.3 ha)	Bedrock	200,000	50,000	х		
MS-60	MP 284.7	15 acres (6.1 ha)	Bedrock	200,000	50,000	х		
MS-60A	MP 284	9.9 acres (4 ha)	Bedrock	200,000	50,000	х		
MS-61	MP 290.4	11.6 acres (4.7 ha)	Bedrock	200,000	50,000	х		
MS-61A	MP 2914	4.7 acres (1.9 ha)	Bedrock	50,000	50,000	х		

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MS-62	MP 293.9	21.3 acres (8.6 ha)	Bedrock	300,000	100,000	х	
MS-63	MP 298.8	10 acres (4 ha)	Bedrock	200,000	100,000	х	

Pipe Storage Yards- New potential pipe storage yards are proposed along the North Route and five proposed in the PoD Rev. 1 identified below in the table that would no longer be required. Refer to the PoD Rev. 1 Section 8.4.6 Pipe Storage Yards, pages 8-51 through 8-53 (Table 8-11).

PoD Rev. 1, Table 8-11: Pipe Storage Yards

				eason of	Use	
Name	Approximate Milepost (MP)	Area (acres/ hectares)	Summer	Winter	All Season	Planned Pipe Source
	Beluga Yard*					Beluga
PSY-01	MP 6.8	1.5 acres (0.6 ha)		х		Beluga
PSY-02	MP 12.8	1.5 acres (0.6 ha)		х		Beluga
PSY-03	MP 15.4	1.5 acres (0.6 ha)		х		Beluga
PSY-04	MP 21.8	1.5 acres (0.6 ha)		х		Beluga
PSY-05	MP 28.2	1.5 acres (0.6 ha)		х		Beluga
PSY-06	MP 32.5	1.5 acres (0.6 ha)		х		Beluga
PSY-07	MP 37.5	1.5 acres (0.6 ha)		х		Beluga
PSY-08	MP 42.3	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-09	MP 46.7	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-10	MP 50.8	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-11	MP 54.2	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-12	MP 69.8	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-13	MP 63.2	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-14	MP 68.5	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-15	MP 70.8	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-16	MP 75.7	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-17	MP 79.1	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-18 (No longer required)	MP 87	1.5 acres (0.6 ha)		x		Road system than via ice road **
PSY-19 (No longer required)	MP 90.7	1.5 acres (0.6 ha)		x		Road system than via ice road **
PSY-20 (No longer required)	MP 96.8	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-21 (No longer required)	MP 101.9	1.5 acres (0.6 ha)		X		Road system than via ice road **
PSY-22 (No longer required)	MP 106.4	1.5 acres (0.6 ha)		х		Road system than via ice road **
PSY-18 (New-North Route)	MP 86.0	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-18A (New-North Route)	MP 91.2	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-19 (New-North Route)	MP 94.3	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-20 (New-North Route)	MP 98.6	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-20A (New-North Route)	MP 101.9	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-21 (New-North Route)	MP 104.5	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **

PSY-22 (New-North Route)	MP 106.0	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-22A						
(New-North Route)	MP 107.4	1.5 acres (0.6 ha)			<u>X</u>	Road system than via ice road **
PSY-23 (New-North Route)	MP 111.2	1.5 acres (0.6 ha)			<u>x</u>	Road system than via ice road **
PSY-24					v	
(New-North Route)	MP 113.8	1.5 acres (0.6 ha)			<u>X</u>	Road system than via ice road **
PSY-23	MP 112.2	1.5 acres (0.6 ha)	Х	Х	Х	Road system than via ice road **
PSY-24	MP 114.4	1.5 acres (0.6 ha)	Х			Road system than via ice road **
PSY-25	MP 120.6	1.5 acres (0.6 ha)	Х			Road system than via ice road **
PSY-26	MP 125.2	1.5 acres (0.6 ha)	Х			Road system than via ice road **
PSY-27	MP 132.3	1.5 acres (0.6 ha)	Х			Kusko East
PSY-28	MP 138.4	1.5 acres (0.6 ha)	Х			Kusko East
PSY-29	MP 142.7	1.5 acres (0.6 ha)	Х			Kusko East
PSY-30	MP 148	1.5 acres (0.6 ha)		Х		Kusko East
PSY-31	MP 154	1.5 acres (0.6 ha)		Х		Kusko East
PSY-32	MP 159.6	1.5 acres (0.6 ha)		Х		Kusko East
PSY-33	MP 162.7	1.5 acres (0.6 ha)		Х		Kusko East
PSY-34	MP 167.8	1.5 acres (0.6 ha)		Х		Kusko East
PSY-35	MP 174.3	1.5 acres (0.6 ha)		Х		Kusko East
PSY-36	MP 178.5	1.5 acres (0.6 ha)		х		Kusko East
PSY-37	MP 184.9	1.5 acres (0.6 ha)		х		Kusko East
PSY-38	MP 191.9	1.5 acres (0.6 ha)		х		Kusko East
PSY-39	MP 197.7	1.5 acres (0.6 ha)		х		Kusko East
PSY-40	MP 204.3	1.5 acres (0.6 ha)		х		Kusko East
PSY-41	MP 210.4	1.5 acres (0.6 ha)		х		Kusko East
PSY-42	MP 215.9	1.5 acres (0.6 ha)		х		Kusko East
PSY-43	MP 220.9	1.5 acres (0.6 ha)		х		Kusko East
PSY-44	MP 226.8	1.5 acres (0.6 ha)		х		Kusko West
PSY-45	MP 231.9	1.5 acres (0.6 ha)		х		Kusko West
PSY-46	MP 250.4	1.5 acres (0.6 ha)	Х			Kusko West
PSY-47	MP 254.3	1.5 acres (0.6 ha)	Х			Kusko West
PSY-48	MP 261.3	1.5 acres (0.6 ha)	х			Donlin Mine
PSY-49	MP 267.9	1.5 acres (0.6 ha)	х			Donlin Mine
PSY-50	MP 271.8	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-51	MP 276.7	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-52	MP 281.6	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-53	MP 284.9	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-54	MP 289.4	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-55	MP 295.4	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-56	MP 302.9	1.5 acres (0.6 ha)	Х			Donlin Mine
PSY-57	MP 308.5	1.5 acres (0.6 ha)	Х			Donlin Mine
	1		I			

Notes: *This yard is not laid out; it is assumed there is adequate room at Beluga. Start pipe haul from Beluga.

^{**} Actual winter access route options (Oilwell Road Route or Willow Landing Route) are still being evaluated and are discussed in Section 8.4.4.

Potential Water Extraction Sites- New potential water extraction sites are proposed along the North Route and those proposed in the PoD Rev. 1 identified below in the table would no longer be required. Refer to the PoD Rev. 1 Section 8.4.7 Water Use and Potential Water Extraction Sites, pages 8-53 through 8-58 and the table below.

PoD Rev. 1, Table 8-12: Potential Water Extraction Sites

		S	Season of Use		Waterbody	Years	Extr	action
Water Extraction Site Name	Nearest Milepost (MP)	Summer	Winter	All Season	Туре	of Use	Rate (gpm)	Annual Volume (gal)
WES-0010	MP 0		х		River	1	500	3,430,000
WES-0020	MP 5		х		River	1	500	3,860,000
WES-0030	MP 10		Х		Pond	1	500	500,000
WES-0031	MP 9		Х		Pond	1	500	500,000
WES-0040	MP 12		Х		Tributary	1	100	50,000
WES-0050	MP 14		Х		Tributary	1	100	50,000
WES-0060	MP 17		Х		Creek	1	500	1,200,000
WES-0070	MP 19		Х		Tributary	1	500	1,200,000
WES-0080	MP 21		х		Tributary	1	500	1,200,000
WES-0085	MP 23		х		Creek	1	100	500,000
WES-0090	MP 26		Х		Creek	1	250	1,200,000
WES-0095	MP 27		Х		Creek	1	250	1,600,000
WES-0096	MP 29		Х		Creek	1	500	1,200,000
WES-0100	MP 30		Х		Tributary	1	100	1,200,000
WES-0110	MP 33		Х		Creek	1	500	1,800,000
WES-0115	MP 35		Х		Creek	1	500	1,200,000
WES-0120	MP 37		Х		Creek	1	500	1,200,000
WES-0130	MP 39		Х		Tributary	1	500	1,200,000
WES-0140	MP 39		Х		Creek	1	500	1,200,000
WES-0145	MP 41		Х		Creek	1	500	1,200,000
WES-146	MP 42		Х		Creek	1	500	1,930,000
WES-0150	MP 43		Х		Creek	1	500	1,200,000
WES-0160	MP 45		Х		Creek	1	250	1,200,000
WES-165	MP 47		Х		Pond	1	500	600,000
WES-0170	MP 48		Х		Pond	1	500	1,200,000
WES-0180	MP 50		Х		River	2	600	5,265,000
WES-0190	MP 53		Х		Creek	2	500	900,000
WES-0200	MP 53		Х		Creek	2	500	1,200,000
WES-0210	MP 56		Х		River	2	500	1,200,000
WES-0220	MP 56		Х		Pond	2	500	1,200,000
WES-0230	MP 59		Х		Stream	2	500	1,200,000
WES-235	MP 62		Х		Stream	2	500	1,200,000
WES-0240	MP 63		Х		Stream	2	500	1,200,000
WES-0245	MP 64		Х		Stream	2	500	1,200,000
WES-0255	MP 66		Х		Stream	2	500	1,200,000
WES-0260	MP 68		Х		Stream	2	100	100,000
WES-0265	MP 72		Х		Stream	2	250	1,200,000
WES-0270	MP 73		Х		Pond	2	500	1,200,000
WES-0275	MP 75		Х		Stream	2	500	1,200,000

WES-0276	MP 75		х	Stream	2	500	1,200,000
WES-0270	MP 79		X	Creek	2	500	1,200,000
WES-0290	MP 81		X	Creek	2	500	1,200,000
WES-0300	MP 84		X	Pond	2	500	1,200,000
WES-0310	MP 86		x	River	2	600	5,475,000
WES-0320				Lake	2	500	2,000,000
(No longer				Lano	_	000	2,000,000
required)	MP 88		X				
WES-0330				Lake	2	500	3,000,000
(No longer required)	MP 90		x				
WES-0340				Creek	2	500	2,400,000
(No longer				0.00	_		_,,,,,,,,
required)	MP 95		X				
WES-0350				Creek	2	250	1,200,000
(No longer required)	MP 99		x				
WES-0360				Creek	2	500	1,200,000
(No longer				J. 301.	_		,,_10,000
required)	MP 101		X				
WES-0370				Creek	2	500	3,000,000
(No longer required)	MP 103		x				
WES-0380				Creek	2	500	1,200,000
(No longer				Orcen	_	000	1,200,000
required)	MP 106		X				
WES-0410				River	2	600	1,425,000
(No longer required)	MP 108		x				
WES-310	IIII 100		^				
(New- North				Creek	TBD	<u>TBD</u>	TBD
Route)	MP 86.4	<u>X</u>					
WES-0320				•			
(New- North Route)	MP 86.7	<u>x</u>		<u>Creek</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
WES-0330	<u>IIII 00.7</u>						
(New- North				Creek	TBD	<u>TBD</u>	TBD
Route)	MP 87.4	<u>X</u>					
WES-0340							
(New- North Route)	MP 89.3	<u>X</u>		<u>Creek</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
WES-0350	WII 09.3						
(New- North				Creek	TBD	TBD	<u>TBD</u>
Route)	MP 90.5	<u>X</u>					
WES-0360							
(New- North Route)	MP 91.8	<u>X</u>		Creek	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
WES-0370	WIF 31.0						
(New- North				Creek	TBD	<u>TBD</u>	<u>TBD</u>
Route)	MP 92.6	<u>X</u>					
WES-0380							
(New- North	MD Q9 2	V		<u>Creek</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
Route)	MP 98.2	<u>X</u>					
WES-0390 (New- North				Creek	TBD	TBD	TBD
Route)	MP 100.7	<u>X</u>					
WES-0400				Creek	TBD	TBD	TBD
(New- North Route)	MP 104.2	<u>x</u>		<u> </u>			

WES-0410								
(New- North Route)	MP 108.6	<u>x</u>			<u>Creek</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
WES-0418	MP 111.37	х	х	х	Stream	2	500	2,210,000
WES-0419	MP 111.43	х	Х	Х	Creek	1	500	100,000
WES-0420	MP 114	х			Tributary	1	500	100,000
WES-0425	MP 116	х			Tributary	1	500	100,000
WES-0430	MP 120	х			Tributary	1	500	100,000
WES-0435	MP 120	х			Tributary	1	500	100,000
WES-0438	MP 121	х			Tributary	1	500	100,000
WES-0440	MP 123	х			Creek	1	500	100,000
WES-0445	MP 125	х			Tributary	1	500	100,000
WES-0447	MP 126	х			Tributary	1	500	100,000
WES-0450	MP 127	х			River	1	500	3,000,000
WES-0460	MP 130	х			Pond	1	500	150,000
WES-0462	MP 131	х			River	1	500	150,000
WES-0464	MP 132	х			Tributary	1	500	600,000
WES-0466	MP 133	х			Tributary	1	500	150,000
WES-0468	MP 134	х			Spring	1	500	150,000
WES-0470	MP 137	х			River	1	500	150,000
WES-0475	MP 137	х			River	1	500	150,000
WES-0480	MP 140	х			Tributary	1	500	150,000
WES-0490	MP 145	х	х	Х	Tributary	2	500	1,355,000
WES-0500	MP 146		Х		River	2	500	4,075,000
WES-0505	MP 148		Х		Tributary	2	500	1,800,000
WES-0510	MP 150		х		Creek	2	500	1,200,000
WES-0520	MP 156		Х		Creek	2	500	2,400,000
WES-0530	MP 161		Х		Creek	2	500	1,800,000
WES-0540	MP 164		Х		Creek	2	500	1,800,000
WES-0545	MP 167		Х		Pond	2	500	1,800,000
WES-0550	MP 168		Х		River	2	500	4,290,000
WES-0560	MP 171		Х		Creek	2	100	100,000
WES-0570	MP 174		Х		Creek	2	100	100,000
WES-0575	MP 174		Х		Creek	2	500	2,400,000
WES-0580	MP 177		Х		Creek	2	100	100,000
WES-0590	MP 179		Х		Creek	2	100	100,000
WES-0595	MP 180		Х		Creek	2	500	2,400,000
WES-0600	MP 183		Х		River	2	500	4,290,000
WES-0610	MP 185		Х		Creek	2	500	4,290,000
WES-0615	MP 186		Х		Pond	2	500	1,200,000
WES-0620	MP 188		Х		Pond	2	500	1,200,000
WES-0625	MP 189		Х		Pond	2	500	1,200,000
WES-0630	MP 191		Х		River	2	500	5,290,000
WES-0640	MP 193		Х		Pond	2	500	3,000,000
WES-0650	MP 197		Х		Pond	2	500	3,000,000
WES-0660	MP 198		Х		Pond	2	500	3,000,000
WES-0670	MP 205		х		Creek	2	250	250,000
WES-0680	MP 208		Х		Creek	2	100	250,000
WES-0690	MP 211		Х		Creek	2	250	250,000

WES-0710	MP 217		Х		River	2	500	4,675,000
WES-0715	MP 219		Х		Creek	2	500	1,200,000
WES-0720	MP 221		Х		Creek	2	500	1,200,000
WES-0730	MP 224		Х		Creek	2	500	1,800,000
WES-0740	MP 227		Х		Creek	2	100	100,000
WES-0750	MP 227		Х		Creek	2	500	1,800,000
WES-0760	MP 232		Х		Creek	2	500	3,750,000
WES-0770	MP 239	х	Х	Х	Creek	2	500	5,490,000
WES-0780	MP 245	х	Х	Х	Tributary	2	500	50,000
WES-0790	MP 241	х	Х	Х	Creek	1	600	975,000
WES-0800	MP 243	х	Х	х	Creek	1	500	50,000
WES-0810	MP 245	х	Х	Х	Creek	1	250	500,000
WES-0815	MP 249	х			Creek	1	500	200,000
WES-0816	MP 256	х			Creek	1	500	1,790,000
WES-0820	MP 270	х			Creek	1	500	500,000
WES-0830	MP 283	х			River	1	600	2,745,000
WES-0835	MP 286	х			Creek	1	500	350,000
WES-0836	MP 288	х			Creek	1	500	100,000
WES-0840	MP 291	Х			River	1	600	850,000
WES-0850	MP 298	Х			River	1	600	2,925,000

PoD Rev. 1, Table 8-8: HDD Estimated Water Use

HDD Crossing Name	Length (ft/m)	Estimated Total Water Requirement (gal)	Estimated Total Volume Solids/Cuttings Needing Disposal (cyd)	Estimated Total Volume of Drilling Mud for Disposal (gal)
Skwentna River	2,981 ft 909 m	350,000- 375,000	250-260	180,000-200,000
Happy River (No longer required)	3,453 ft 1,053 m	450,000- 500,000	280-290	240,000-260,000
Unnamed Tributary #1 to Happy River- McDoel (New- North Route)	3,220.8 ft 981.7 m	<u>450,000-</u> <u>500,000</u>	<u>280-290</u>	240,000-260,000
Unnamed Tributary #2 to Happy River- Distin (New- North Route)	3,094.4 ft 943.2 m	<u>450,000-</u> <u>500,000</u>	<u>280-290</u>	240,000-260,000
Kuskokwim River	7,101 ft 2,164 m	900,000- 925,000	590-600	440,000-460,000
East Fork George River	4,532 ft 1,381 m	500,000- 525,000	375-385	250,000-270,000
George River	2,957 ft 901 m	325,000- 350,000	245-255	160,000-180,000
North Fork George River	3,281 ft 1,000 m	425,000- 450,000	270-280	220,000-240,000

Note: Estimated volume ranges rely on assumptions regarding drilling methods and ground conditions to be encountered, therefore actual volumes can vary significantly and operations would be planned accordingly. Estimates would be refined during final design.

Pipeline Construction Fuel Estimate- With the establishment on one additional airstrip in the North Route the estimated fuel required would be modified as shown in the table below. Refer to the PoD Rev. 1 Section 8.4.8 Fuel, pages 8-58 and 8-59.

PoD Rev. 1, Table 8-14: Pipeline Construction Fuel Estimate

Pipeline Construction Fuel Estimate (Gallons)	Airstrips					
1,000,000	Beluga Airstrip					
500,000	Deep Creek Airstrip					
500,000	Shell Airstrip					
250,000	Happy River Airstrip					
<u>TBD</u>	Glacier Creek Airstrip					
(New- North Route)						
500,000	Threemile Airstrip					
500,000	Bear Paw Airstrip					
500,000	Jones Airstrip					
750,000	Farewell Airstrip					
500,000	Big River Airstrip					
500,000	Kuskokwim East Airstrip					
500,000	Kuskokwim West Airstrip					
500,000	Donlin Airstrip					
Total Gallons: 6,500,000 (plus Glacier Creek Estimate TBD)						







