APPENDIX G:
Stream Crossing, Water Extraction and Flow Reduction Data Tables

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1.0 Summary of Tables in Appendix G

Stream crossing information for two alternative access roads (i.e., the road from Angyaruaq [Jungjuk] Port – Alternative 2, and the road from Birch Tree Crossing Port – Alternative 4) are provided in Tables G-1 and G-2.

Stream crossing information for the proposed pipeline alignment under Alternative 2 (including the North Option) and Alternative 3B (Port MacKenzie Option) is presented in Table G-3. Potential water extraction sites for Alternative 2 (including the North Option) are presented in Table G-4.

An estimate of the reduction in average monthly Crooked Creek streamflow during Years 10 and 20 of mining is presented in Tables G-5 through G-12. A combination of two different streamflow conditions (i.e., Average Flow and 10th Percentile Low Flow) and two different groundwater flow conditions (Base-Case K and High K) are evaluated for both Year 10 and Year 20 of mining. For each condition evaluated, streamflow values for both the undisturbed and the disturbed condition are provided as well as the percent reduction in streamflow resulting from mining.

An estimate of the reduction in average monthly Crooked Creek streamflow during pit closure, after the pit lake has reached capacity, is presented in Tables G-13 and G-14. Table G-13 assumes average flow conditions and Table G-14 assumed a 10th percentile low flow condition.

Table G-1:
Proposed Angyaruaq (Jungjuk) Access Road
Stream Crossing Data

Table G-1: Proposed Angyaruaq (Jungjuk) Access Road Stream Crossing Data

No.	Stream Name or Crossing ID	Road Milepost	Bridge Span (feet)	Abutment Type	Bridge Surface Elev. (feet)	HHW Elev. (feet)	Thaw Pipe	No. of Pipes	Culvert Dia. (inches) Red = fish pass	Culvert Length (feet)	Channel Width (feet)	Channel Depth (feet)	Stream Grade (%)	General Site Conditions	Fish Pass	Flow (cfs)
1	**Crooked Creek Floodway No. 1**	0.06	NA	NA	NA	NA	Y	1	48	78.7	3.3-6.6	2.3	0.2	Overgrown floodway channel with mucky bottom & gravel near surface. Banks are silty topsoil over gravel at 3.3-6.6 feet height. No flow except at flood levels.	N	NA
2	**Crooked Creek Floodway No. 2**	0.13	NA	NA	NA	NA	Y	1	72	95.1	6.6	2.3	0.2	Overgrown floodway channel with mucky bottom & gravel near surface. Banks are silty topsoil over gravel at 3.3-6.6 feet height. Diagonal to CL. No flow except at flood levels.	N	NA
3	**Crooked Creek**	0.18	82	Pad	342.8	331.7	NA	NA	**NA**	Bridge	23-30	0.7-4.9	0.2	Banks show 3.3-4.9 feet silt & organic soil over gravel. HHW to HHW is roughly 72 wide. Large birch & spruce on banks. Gravel & cobble bed. Estimated mean velocity of 56 cubic feet per second (cfs) at mean water level. Estimated flow of 490 cfs at time of survey. **Anadromous**	Y	100
4	**Crooked Creek Floodway No. 3**	0.21	NA	NA	NA	NA	Y	1	72	98.4	6.6	2.3	0.2	Overgrown flood channel with mucky bottom & gravel near surface. Banks are silty topsoil over gravel at 3.3-6.6 feet. Diagonal to CL. No flow except at flood levels.	N	NA
5	**Crooked Creek Floodway No. 4**	0.31	NA	NA	NA	NA	Y	1	48	65.6	3.3	3.3	0.2	Winding brush & timber choked channel with evidence of flood water to top of bank (4.3 feet deep). Gravel shallow below mucky base. Banks are silt & organic material. Typically dry or stagnant except at flood level.	N	NA
5A	**47966**	9.08	NA	NA	NA	NA	Y	1	36	59.1	NA	NA	19.0	Natural drainage path for storm or thaw runoff. Section of road is on sidehill in heavy brush with dense to open timber. Flow in drainage is intermittent. Coarse colluvium with bedrock shallow. Potential for icing.	N	NA
5B	**48917**	9.26	NA	NA	NA	NA	Y	1	36	59.1	NA	NA	24.0	Natural drainage path for storm or thaw runoff. Section of road is on sidehill in heavy brush with dense to open timber. Flow in drainage is intermittent. Coarse colluvium with bedrock shallow. Potential for icing.	N	NA
5C	**50394**	9.54	NA	NA	NA	NA	Y	1	36	59.1	NA	NA	15.0	Natural drainage path for storm or thaw runoff. Section of road is on sidehill in heavy brush with dense to open timber. Flow in drainage is intermittent. Coarse colluvium with bedrock shallow. Potential for icing.	N	NA
6	**69652**	13.19	NA	NA	NA	NA	Y	1	48	59.1	3.3	1.6	3.0	Narrow incised channel in boggy drainage within possible permafrost soils. Bedrock likely very shallow. Evidence of aufeis. Mucky stream bed. Silt & organic material in banks. Water depth at time of survey was <0.7 feet. Very little flow. Drainage empties to expansive marshy area with no defined channel.	N	<1
7	**70965**	13.44	NA	NA	NA	NA	Y	1	36	59.1	3.3	1.6	5.0	Narrow incised channel in boggy drainage within possible permafrost soils. Bedrock likely very shallow. Evidence of aufeis. Mucky stream bed. Silt & organic material in banks. Water depth at time of survey was <0.7 feet. Very little flow. Drainage empties to expansive marshy area with no defined channel.	N	<1
8	**71982**	13.63	NA	NA	NA	NA	Y	1	36	68.9	3.3	1.6	7.0	Incised channel in alder & willow draw. Evidence of aufeis. Silt & rock in stream bed. Bedrock shallow. Silt & organic material in banks. Moderate gradient in well-defined draw. Base soil appears good for culvert installation. Channel is well defined. Very limited watershed with intermittent flows.	N	1
9	**73294**	13.88	NA	NA	NA	NA	Y	1	36	43	3.3	1.0	10.0	Incised channel in alder & willow draw. Evidence of aufeis. Silt & rock in stream bed. Bedrock shallow. Silt & organic material in banks. Moderate gradient in well-defined draw. Base soil appears good for culvert installation. Channel is well defined. Very limited watershed with intermittent flows.	N	<1
10	**Two Bull Creek**	14.53	NA	NA	NA	NA	Y	1	**48**	56	<3.3	1.0	3.1	Narrow channel with cobble/gravel bed in sparsely treed draw with brush on banks. Well-defined channel with 1.0 feet banks. Glaciation evident. Fish not likely.	N	NA
11	**78675**	14.90	NA	NA	NA	NA	Y	1	36	56	2.0	0.7	7.0	Incised channel in brushy draw. Likely dry in winter. Silt & rock in stream bed. Bedrock shallow. Silt & organic material in banks. Moderate gradient in well-defined draw. Base soil appears good for culvert installation. Channel is well defined. Flow likely intermittent.	N	<1

Table G-1: Proposed Angyaruaq (Jungjuk) Access Road Stream Crossing Data

No.	Stream Name or Crossing ID	Road Milepost	Bridge Span (feet)	Abutment Type	Bridge Surface Elev. (feet)	HHW Elev. (feet)	Thaw Pipe	No. of Pipes	Culvert Dia. (inches) Red = fish pass	Culvert Length (feet)	Channel Width (feet)	Channel Depth (feet)	Stream Grade (%)	General Site Conditions	Fish Pass	Flow (cfs)
12	**North Fork Getmuna Creek Floodway No.1**	16.08	NA	NA	NA	NA	Y	1	36	43	3.3	2.3	0.3	Narrow overgrown floodway channel with cobble gravel base. Banks are silty topsoil over gravel at 1.6-3.3 feet height. Typically dry.	N	NA
13	**North Fork Getmuna Creek Floodway No. 2**	16.13	NA	NA	NA	NA	Y	1	60	43	3.3-6.6	2.3	0.3	Well-defined overgrown floodway channel with cobble gravel base. Banks are silty topsoil over gravel at 1.6-3.3 feet height. Typically dry.	N	NA
14	**North Fork Getmuna Creek**	16.14	43	Pad	NA	470.8	NA	NA	NA	Steel Arch Bridge	23	3.9	0.3	Banks show 3.3 feet silt, gravel & organic soil over coarse cobble/boulder gravel. Floodplain is roughly 390 feet wide and to north of crossing. Alder/willow brush with young to mature trees populate floodplain. HHW mark is top of bank. Gravel & cobble bed. Approaches & foundation soils are thawed gravel below approx. 3.3 feet. Water depth varies up to 1.0 feet. **Anadromous**	Y	40
15	**South Fork Getmuna Creek Floodway No. 1**	17.11	NA	NA	NA	NA	Y	1	36	43	3.3	2.3	0.3	Overgrown floodway channel with cobble gravel base. Banks are silty topsoil over gravel at 1.6-3.3 feet height. Typically dry.	N	NA
16	**South Fork Getmuna Creek Floodway No. 2**	17.13	NA	NA	NA	NA	Y	1	60	43	3.3-6.6	2.3	0.3	Overgrown floodway channel with cobble gravel base. Banks are silty topsoil over gravel at 1.6-3.3 feet height. Typically dry.	N	NA
17	**South Fork Getmuna Creek**	17.19	39	Pad	NA	534.4	NA	NA	NA	Steel Arch Bridge	26	3.3	0.6	Banks show 3.3 feet silt & organic soil over coarse cobble/boulder gravel. Floodplain is roughly 620 feet wide and to north of crossing. Alder/willow brush with young to mature trees populate floodplain. HHW mark is top of bank. Gravel & cobble bed. Approaches & foundation soils are thawed gravel below approx. 3.3 feet. Water depth varies up to 1.6 feet. **Anadromous**	Y	65
18	**Getmuna Creek Tributary**	17.54	23	Pad	NA	559.4	NA	NA	**NA**	Steel Arch Bridge	6.6-12	1.0	1.5	Well-defined channel with steep banks & cobble/gravel bed in brushy draw. Good foundation conditions for culvert. Strong flow. Evidence of aufeis. **Anadromous**	Y	10
19	**103025**	19.51	NA	NA	NA	NA	Y	1	36	49	NA	NA	20.0	Crossing at head of steep gradient drainage. Poorly-defined channel in dense brush filled draw on forested hillside. Mucky bed with some rock. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely spring fed. No permafrost.	N	1
20	**103091**	19.53	NA	NA	NA	NA	Y	1	36	49	NA	NA	20.0	Crossing at head of steep gradient drainage. Poorly-defined channel in dense brush-filled draw on forested hillside. Mucky bed with some rock. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely spring fed. No permafrost.	N	1
21	**105164**	19.92	NA	NA	NA	NA	Y	1	30	59	NA	NA	25.0	Crossing at head of steep gradient drainage on forested hillside. Poorly-defined channel in dense brush-filled draw. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow.	N	NA
22	**105919**	20.06	NA	NA	NA	NA	Y	1	24	56	NA	NA	18.0	Crossing at head of steep gradient drainage on forested hillside. Poorly-defined channel in dense brush-filled draw. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow.	N	NA
23	**106473**	20.17	NA	NA	NA	NA	Y	1	24	49	NA	NA	18.0	Crossing at head of steep gradient drainage on forested hillside. Poorly-defined channel in dense brush-filled draw with large trees. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow.	N	NA
24	**107293**	20.32	NA	NA	NA	NA	Y	1	36	56	NA	NA	24.0	Crossing in broad steep drainage on forested hillside. Poorly-defined channel in dense brush-filled shallow swale. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA

Table G-1: Proposed Angyaruaq (Jungjuk) Access Road Stream Crossing Data

No.	Stream Name or Crossing ID	Road Milepost	Bridge Span (feet)	Abutment Type	Bridge Surface Elev. (feet)	HHW Elev. (feet)	Thaw Pipe	No. of Pipes	Culvert Dia. (inches) Red = fish pass	Culvert Length (feet)	Channel Width (feet)	Channel Depth (feet)	Stream Grade (%)	General Site Conditions	Fish Pass	Flow (cfs)
25	**107503**	20.36	NA	NA	NA	NA	Y	1	24	59	NA	NA	20.0	Crossing in broad steep drainage on forested hillside. Poorly-defined channel in dense brush-filled shallow swale. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
26	**107713**	20.40	NA	NA	NA	NA	Y	1	24	59	NA	NA	27.0	Crossing in broad steep drainage on forested hillside. Poorly-defined channel in dense brush-filled shallow swale. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
27	**108396**	20.53	NA	NA	NA	NA	Y	1	36	59	NA	NA	27.0	Crossing in broad steep drainage on forested hillside. Poorly-defined channel in dense brush-filled shallow swale. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
28	**110010**	20.84	NA	NA	NA	NA	Y	1	30	59	NA	NA	33.0	Well-defined channel near head of steep drainage on forested hillside. Brush-filled shallow swale. Mucky bed with rock. No permafrost. Bedrock likely shallow. Very limited watershed with occasional flow.	N	NA
29	**110266**	20.88	NA	NA	NA	NA	Y	1	24	59	NA	NA	27.0	Crossing in steep drainage on forested hillside. 3.3 feet incised channel in forested and brush-filled swale. Mucky bed, no rock evident. No permafrost. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
30	**112201**	21.25	NA	NA	NA	NA	Y	1	36	59	NA	NA	19.0	No defined channel in broad willow-choked draw. Silt & sand bed, no rock evident. No permafrost. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
31	**112963**	21.40	NA	NA	NA	NA	Y	1	36	49	NA	NA	16.0	Well-defined drainage near head of steep drainage on forested hillside. Brush-filled swale. Gravel in stream bed. Bedrock likely shallow. No permafrost. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
32	**113294**	21.46	NA	NA	NA	NA	Y	1	36	49	NA	NA	11.0	Well-defined channel near head of steep drainage on forested hillside. Brush-filled shallow swale. Rocky stream bed. Bedrock likely shallow. No permafrost. Very limited watershed with intermittent flow. Likely springs up gradient.	N	NA
33	**114452**	21.68	NA	NA	NA	NA	Y	1	24	49	NA	NA	18.0	Well-defined draw near head of steep drainage on forested hillside. Rocky stream bed. Bedrock likely shallow. Hornfels & basalt rock clasts in stream bed. No permafrost. Very limited watershed. Intermittent flow.	N	NA
34	**114852**	21.75	NA	NA	NA	NA	Y	1	36	49	NA	NA	16.0	Ill-defined channel near head of steep drainage on forested hillside. Broad willow rush-filled shallow swale. Rocky stream bed. Bedrock likely shallow. No permafrost. Very limited watershed. Intermittent flow.	N	NA
35	**116706**	22.10	NA	NA	NA	NA	Y	1	30	49	NA	NA	27.0	Well-defined drainage swale near head of steep drainage on brushy hillside. Few seeps evident. Mucky bed with rock. Bedrock likely shallow. No permafrost. Very limited watershed with intermittent flow. Extreme headwaters of Jungjuk Creek.	N	NA
36	**118625**	22.47	NA	NA	NA	NA	Y	1	36	49	NA	NA	27.0	Well-defined drainage near head of steep drainage on forested hillside. Brush-filled shallow swale. Mucky bed with rock. Bedrock likely shallow. No permafrost. Very limited watershed with intermittent flow. Extreme headwaters of Jungjuk Creek.	N	NA
37	**121299**	22.97	NA	NA	NA	NA	Y	1	36	59	NA	NA	13.0	Well-defined swale, densely forested hillside. No active flow but likely accumulates spring runoff. Silty soil over colluvium with cobbles. No permafrost. Very limited watershed. Extreme headwaters of Jungjuk Creek.	N	NA
38	**127089**	24.07	30	Pad	NA	483.9	NA	NA	**NA**	Steel Arch Bridge	13-16	3.3-6.6	1.2	Banks show 1.0 feet silt, gravel & organic soil over coarse cobble/boulder gravel. Floodplain is roughly 160 feet wide with active channel 10-16 feet wide near center of floodplain. Alder/willow brush with young to mature trees populate floodplain. HHW mark is top of channel bank. Gravel & cobble bed. Approaches & foundation soils are thawed gravel below approx. 1.0-3.3 feet silty overburden. Water depth varies up to 1.1 feet. **Anadromous**	Y	35

Table G-1: Proposed Angyaruaq (Jungjuk) Access Road Stream Crossing Data

No.	Stream Name or Crossing ID	Road Milepost	Bridge Span (feet)	Abutment Type	Bridge Surface Elev. (feet)	HHW Elev. (feet)	Thaw Pipe	No. of Pipes	Culvert Dia. (inches) Red = fish pass	Culvert Length (feet)	Channel Width (feet)	Channel Depth (feet)	Stream Grade (%)	General Site Conditions	Fish Pass	Flow (cfs)
39	**129432**	24.51	NA	NA	NA	NA	Y	2	36	49	1.6	1.6	3.0	Alder willow flat with intermittent flow in ill-defined brush-choked channels. Gravel base beneath silt & organics to 1.6 feet depth.	N	NA
40	**129544**	24.54	NA	NA	NA	NA	Y	1	36	49	1.6	1.6	3.0	Alder willow flat with intermittent flow in ill-defined brush-choked channels. Gravel base beneath silt & organics to 1.6 feet depth.	N	NA
41	**Jungjuk Creek, Lower Crossing**	24.80	30	Pad	NA	393.0	NA	NA	**NA**	Steel Arch Bridge	13	3.3	1.3	Banks show 1.0 foot silt, gravel & organic soil over coarse cobble/boulder gravel. Floodplain is roughly 20-23 feet wide with active channel 13 feet wide near center of floodplain. Alder/willow brush with young to mature trees populate floodplain. HHW mark is top of channel bank. Gravel & cobble bed. Approaches & foundation soils are thawed gravel below approx. 3.3 feet silty overburden. Water depth varies up to 1.1 feet. **Anadromous**	Y	35
42	**131393**	24.89	NA	NA	NA	NA	Y	1	48	59	NA	NA	2.9	Floodway culvert to be installed primarily for overflow of Jungjuk Creek due to glaciation. No defined channel or flow path exists. Set pipe invert 6 inches below grade.	N	NA
43	**132803**	25.15	NA	NA	NA	NA	Y	1	30	59	<1.6	1.0	2.0	Willow & scrub spruce flat in permafrost area. Thawed at crossing. Ill-defined channel. Silt base will require over-excavation. Glaciation evident. Intermittent flow.	N	NA
44	**136714**	25.89	NA	NA	NA	NA	Y	1	30	59	<1.6	1.0	2.0	Poorly-defined channel in area of intermittent permafrost. Brush-filled shallow swale. Mucky bed. Likely springs up gradient. Glaciation evident. Over-excavation. Intermittent flow.	N	NA
45	**137352**	26.01	NA	NA	NA	NA	Y	1	**72**	59	3.3	1.6	1.0	Well-defined channel in permafrost area. Drainage appears thawed. Silt over gravel base at 4.9-6.6 feet. Glaciation evident. Possible fish pass. Not anadromous.	Y	1-7
46	**138556**	26.24	NA	NA	NA	NA	Y	1	24	59	NA	NA	1.5	No flow observed. Possible spring freshet in limited drainage. Possible permafrost. Over-excavation & backfill for setting pipe.	N	NA
47	**141532**	26.81	NA	NA	NA	NA	Y	1	48	59	NA	NA	3.0	Alder flat with no defined channel. Very limited flow. Thaw stable area. Over-excavation & backfill for setting pipe. Glaciation evident.	N	NA
49	**141864**	26.87	NA	NA	NA	NA	Y	1	48	59	NA	NA	3.0	Sunken grass & tussock flat. Mucky base with silt & sand. Banks 6.6-9.8 feet high. Permafrost area, but drainage thawed. Glaciation evident. Over-excavation & backfill for pipe placement.	N	1

Notes:

HHW elevation is derived from RECON field observations.

Culvert size identified for each crossing is typically oversized for the drainage area served and is determined most appropriate for winter icing conditions and maintenance.

Color Key:

Known or presumed fish-bearing stream

Known anadromous stream

Legend:

cfs = cubic feet per second
CL = Center line
HW = High water
HHW = High high water
NA = Not Available

Source: RECON, LLC 2011a.

Table G-2:
Birch Tree Crossing Port Access Road
Stream Crossing Data

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
1	Crooked Creek floodway No. 1	0+096	NA	NA	NA	48	3 to 6.5	2.3	<1%	Overgrown flood channel with mucky bottom, but gravel shallow. Banks are silty topsoil over gravel @ 3 to 6.5 feet.
2	Crooked Creek floodway No. 2	0+203	NA	NA	NA	72	6.5	2.3	<1%	Overgrown flood channel with mucky bottom, but gravel shallow. Banks are silty topsoil over gravel @ 3 to 6.5 feet. Diagonal to CL.
3	**Crooked Creek (bridge)**	0+290 to 0+315	93	82	Pad or Pile	NA	56	0.65 - 4.9	1	Banks show 3 - 4.9 feet silt and organic soil over gravel. HHW to HHW is roughly 72 feet wide. Large birch and spruce on banks. Gravel & cobble bed. Estimated mean velocity of 5.2 feet per second at mean water level. Est. flow of 490 cfs at time of survey.
4	Crooked Creek floodway No. 3	0+330	NA	NA	NA	72	6.5	2.3	<1%	Overgrown flood channel with mucky bottom but gravel shallow. Banks are silty topsoil over gravel @ 3 to 6.5 feet. Diagonal to CL.
5	Crooked Creek floodway No. 4	0+495	NA	NA	NA	48	3	3	1	Winding brush and timber choked channel with evidence of flood water to top of bank (4.3 feet deep). Gravel shallow below mucky base. Banks are silt and organic material.
6	Skanky Creek	47+330	8.6	NA	NA	96	3 to 6.5	5.0	1	Incised channel in grass and sparse treed drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
7	**Iditarod River (bridge)**	54+292 to 54+309	24.1	49	Pad or Pile	NA	3 to 13	6.5	1	Incised channel in permafrost w/ mild thermal karst terrain. Gravel evident in channel bottom. HHW mark roughly 6.5 feet above incised channel bank and over total width of 49+-. Permafrost possible at abutments. Lots of beaver activity but no survivors. Evidence of aufeis.
8	Unnamed Creek	58+642	1.6	NA	NA	60	3	3	1	Incised channel in thermal karst terrain. Evidence of aufeis. Mucky bottom. Silt and organic material in banks.
9	Unnamed Creek	59+987	1.7	NA	NA	60	3	1.6	1 to 2	Incised channel in thermal karst terrain. Evidence of aufeis. Mucky bottom. Silt and organic material in banks. Silt and silty gravel to 139 feet depth, frozen.
10	Karst Creek	62+114	3.6	NA	NA	96 + 36 for overflow	6.5	6.5	1	Incised channel in grass and sparse treed drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks. Very winding with steep Karst humps on approaches.
11	Cala Poco Creek	64+400	2.3	NA	NA	72	3 to 6.5	3	1	Incised channel in alder& willow flat. Evidence of aufeis. Mucky bottom but rock shallow. Silt and organic material in banks. Very winding with some thermal karst humps on approaches.
12	**Cobalt Creek (bridge)**	65+429 to 65+444	33	49	Pad or Pile	NA	23 to 30	3	1	Banks show 3 feet silt and organic soil over gravel. Floodway is roughly 39 feet wide. Large spruce on N. bank with scrub on south bank. HHW mark is top of bank. Gravel & cobble bed. Approaches and foundation soils are thawed gravel below 3 feet +-. Water depth varies up to 3 feet. Flood culverts on north approach across flood plain (2) 59 inches. Foundation soils are thawed coarse cobble gravel

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
13	Dunamis Creek	67+200	5.4	NA	NA	96 + 36 for secondary channel	6.5 to 13	4.3	1 to 2	Incised channel in grass & alder drainage flat. Evidence of aufeis. Gravel bottom. Silt and organic material in banks. No permafrost. Very winding. Strong flow
14	Unnamed Creek	68+718	0.6	NA	NA	48	3	3	1	Incised channel in alder& willow flat. Evidence of aufeis. Mucky bottom but rock shallow. Silt and organic material in banks. Very winding.
15	Unnamed Creek	69+700	0.9	NA	NA	48	<3	3	1	No defined channel Evidence of aufeis. Mucky bottom. Silt and organic material in banks.
16	Lithos Creek	72+264	5.3	NA	NA	96	6.5 to 10	4.0	1 to 2	Incised channel in blk spruce & alder filled drainage within abandoned alluvial plain. Evidence of aufeis. Cobble gravel stream bed. Silt and organic material in banks. No permafrost. Winding channel.
17	Unnamed Creek	74+174	1.5	NA	NA	48	3	3	2	Narrow & shallow channel. Evidence of aufeis. Gravel Stream bed. Silt and organic material in banks.
18	**Tyrel Creek (bridge)**	75+389 to 75+401	8.5	40	Pad	NA	16.4	4.9	1	Banks show 3 feet silt and organic soil over gravel. Floodway is roughly 39 feet wide. Large spruce on N. bank with scrub on south bank. HHW mark is top of bank. Gravel & cobble bed. Approaches and foundation soils are thawed cobble/boulder gravel below 3 feet +-. Water depth varies up to 3 feet. Flood culverts on north And south approach across flood plain (2) 59 inches.
19	Unnamed Creek	76+350	3.2	NA	NA	48	3	1.6	2	One of several ill-defined channels in drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks.

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
20	Unnamed Creek	77+950 & 77+980	1.5	NA	NA	48 X 2	3	1.0	2	Narrow & shallow channels in alder & willow flat 360 feet wide. Very limited watershed. Evidence of aufeis. Rocky bed. One culvert each side of flat.
21	Unnamed Creek	79+915 & 79+960	0.5	NA	NA	48 X 2	3	1.0	2	Narrow & shallow channels in alder & willow flat 525 feet wide. Very limited watershed. Evidence of aufeis. Rocky bed. One culvert each side of flat
22	Unnamed Creek	80+588	0.8	NA	NA	48	3	3	1 to 2	One of several ill-defined channels in drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks.
23	Unnamed Creek	80+861	0.5	NA	NA	48	3	3	2 to 3	One of several ill-defined channels in drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks.
24	**Jubil Creek (bridge)**	81+944 to 81+954	6.3	33	Pad	NA	13	3	2	Banks show 3 feet silt and organic soil over coarse cobble/boulder gravel. Floodplain is roughly 164 feet wide and to south of crossing. Alder/willow brush and old beaver dams and channels. HHW mark is top of bank. Gravel & cobble bed. Approaches and foundation soils are thawed gravel below 3.2 feet +-. Water depth varies up to 1.6 feet. Flood culvert on south approach across flood plain (1) 59 inches.
25	Random Creek	84+190	5.7	NA	NA	96	6.5	3	1 to 2	Shallow and variable channel in alder & willow choked drainage. Evidence of aufeis. Cobble gravel stream bed. Silt and organic material in banks. No permafrost. Winding channel. Old beaver workings have created confused network of channels. Base channel must be reestablished.

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
26	Unnamed Creek	85+460	0.4	NA	NA	48	3	0.7	2	Ill-defined channel in drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks. Gravel assumed to be shallow.
27	Unnamed Creek	85+790	1.3	NA	NA	48	3	0.7	2	Ill-defined channel in drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks. Gravel assumed to be shallow.
28	**Owhat River (bridge)**	87+036 to 87+054	109.8	82	Pad or Pile	NA	59	0.65 - 4.9	1 to 2	Banks show 3 - 4.9 feet silt and organic soil over gravel. Flood way is roughly 131 feet wide. Large Birch and Spruce on banks. HHW mark is top of bank. Gravel & cobble bed. Mean velocity of 5 feet per second at mean water level. Est. flow of 776 cfs. Foundation soils are thawed cobble gravel to highly fractured sedimentary bedrock at 16 - 20 feet.
29	Owhat River floodway No.1	87+086	NA	NA	NA	84 x 2	19.6	dry	1	Alder choked channel with evidence of flood water to top of bank (4.9 feet deep). Gravel base.
30	Owhat River floodway No.2	87+174	NA	NA	NA	84	19.6	dry	1	Alder choked channel with evidence of flood water to top of bank (4.9 feet deep). Gravel base.
31	Unnamed Creek	88+512	1.8	NA	NA	72	3	1.0	2	One of several ill-defined channels in narrow drainage flat. Evidence of aufeis. Mucky bottom. Silt and organic material in banks.
31	**Kaina Creek (bridge)**	91+780.8 to 91+792.8	17.9	39	Pad or Pile	NA	19.6	3	1	Thawed silt and fine sand over gravel at 6.5 feet. 19.6 feet wide incised 3 feet with 16.4 feet channel uniform width. HHW mark is top of bank. Silt, sand and gravel bed. Large spruce on banks.

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
32	Tor Creek	96+161	3.4	NA	NA	84	6.5	3	1	Incised channel in blk willow & alder filled drainage within hummocky permafrost terrain. Evidence of aufeis. Mucky stream bed. Silt and organic material in banks. Permafrost likely. Winding channel can be aligned.
34	Unnamed Creek	100+011 & 100+081	0.7	NA	NA	48 on east side of flat and 36 on west side	3	1.0	2	Narrow & shallow ill-defined channels in alder & willow flat 361 feet wide. Very limited watershed. Evidence of aufeis. Mucky bed. One culvert each side of flat.
35	Unnamed Creek	100+790	0.8	NA	NA	60	3	0.7	2	Narrow & shallow ill-defined channels in alder & willow flat 361 feet wide. Very limited watershed. Evidence of aufeis. Mucky bed. One culvert each side of flat.
36	Unnamed Creek	106+087	1.3	NA	NA	60	3	1.0	1	Incised channel in boggy drainage within hummocky permafrost terrain. Evidence of aufeis. Mucky stream bed. Silt and organic material in banks. Permafrost likely. Old beaver dams.
37	Aurum Creek	106+346	0.8	NA	NA	60	0	1.0	1	Incised channel in boggy drainage within hummocky permafrost terrain. Evidence of aufeis. Mucky stream bed. Silt and organic material in banks. Permafrost intermittent. Old beaver dams.
38	Ploutos Creek	114+289	7.4	NA	NA	84	6.5 - 9.8	1.6 - 3	3	Incised channel in spruce, willow & alder filled drainage within permafrost tundra terrain. Evidence of aufeis. Mucky stream bed. Silt and organic material in banks. Permafrost likely. Old beaver dams.

Table G-2: Birch Tree Crossing Port Access Road Stream Crossing Data

No.	Stream Name	Road Sta.	Drainage Area Above Crossing (square miles)	Bridge Span (feet)	Abutment Type	Culvert Dia. (inches)	Channel width (feet)	Channel Depth (feet)	Grade (%)	Site Conditions
39	**Ones Creek (bridge)**	115+398 to 115+416	101.6	49 - 59	Pile	NA	33	6.5 - 9.8	<1	Permafrost silt and fine sand to 19.7 - 23 feet over thawed gravelly soil. 18m wide incised gully with uniform width channel in bottom. HHW mark is 8.2 feet below top of bank. Normal water level is 15.7 to 16.4 below top of bank. Silt, sand and gravel bed. Water depth approx. 4.3 feet.
40	BTC Creek	118+508	2.4	NA	NA	96	6.5 - 9.8	1.6 - 3	5	Permafrost silt and fine sand. 32.8 - 98 feet wide deeply incised gully with channel winding in bottom. Old beaver workings evident.

Notes:
NA = Not Applicable

Source: Recon, 2007a. Data collected during route field surveys May/June 2007.

Table G-3:
Proposed Pipeline Stream Crossings

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg (feet)	Burial Length (feet)
Theodore River Watershed												
cTHT4_sh	5	(c)Theodore t1 Shoofly	Area > 0.5 and <= 1 sq mi	1.0	14	45	66	77	17.5	4		
cTH_sh	5	(c)Theodore Shoofly	Area > 10 sq mi	102.9	1,014	2,252	2,944	3,306	101	8		
cTHT5_sh	6	(c)Theodore t2 Shoofly	Small Undefined Area									
Lewis River Watershed												
cLET10	7	(c)Lewis t10	Area <= 0.5 sq mi	0.2	2	8	11	13			4	
cLET13	8	(c)Lewis t13	Area <= 0.5 sq mi	0.1	1	5	7	8			4	
cLET12	8	(c)Lewis t12	Area <= 0.5 sq mi	0.2	3	12	19	22			4	
cLET11	8	(c)Lewis t11	Area > 0.5 and <= 1 sq mi	1.0	14	45	66	78	10	1.3	4	65
DR25	8	drainage 25	Area <= 0.5 sq mi	0.1	2	8	12	14			4	
cLET16	9	(c)Lewis t16	Area <= 0.5 sq mi	0.5	6	21	31	37			4	
DR24	9	drainage 24	Area <= 0.5 sq mi	0.1	2	8	12	14			4	
cLET15	9	(c)Lewis t15	Area <= 0.5 sq mi	0.1	1	5	9	10			4	
cLET14	9	(c)Lewis t14	Area <= 0.5 sq mi	0.0	0	2	3	4			4	
cLET17	10	(c)Lewis t17	Small Undefined Area									
DR27	11	drainage 27	Area <= 0.5 sq mi	0.0	1	4	6	7			4	
SP3	11	spring 3	Small Undefined Area									
cLET18	11	(c)Lewis t18	Area <= 0.5 sq mi	0.4	7	27	40	48	10	2.75	4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR28	11	drainage 28	Small Undefined Area									
DR29	11	drainage 29	Small Undefined Area									
SP11	12	spring 11	Small Undefined Area									
SP12	12	spring 12	Small Undefined Area									
cLET19	12	(c)Lewis t19	Small Undefined Area								4	
cLET1	12	(c)Lewis t1	Area > 1 and <= 5 sq mi	1.2	17	54	78	92	20	2.5	4	150
SP4	13	spring 4	Small Undefined Area									
DR30	13	drainage 30	Small Undefined Area									
DR31	13	drainage 31	Area <= 0.5 sq mi	0.2	5	17	26	31			4	
DR32	13	drainage 32	Area <= 0.5 sq mi	0.1	2	7	11	13			4	
DR33	14	drainage 33	Area <= 0.5 sq mi	0.0	1	4	6	7			4	
cLET2_sh	14	(c)Lewis t2 Shoofly	Shoofly	2.3	29	87	124	145	30	3		
cLET2	14	(c)Lewis t2	Area > 1 and <= 5 sq mi	2.3	29	87	124	145	37	3.1	4	200
DR63	14	drainage 63	Area <= 0.5 sq mi	0.2	4	15	23	28			4	
cLET3	15	(c)Lewis t3	Area > 1 and <= 5 sq mi	1.1	20	68	100	118	55	2.5	4	100
DR58	15	drainage 58	Small Undefined Area									
DR59	15	drainage 59	Area <= 0.5 sq mi	0.0	1	2	4	5			4	
DR60	15	drainage 60	Small Undefined Area									

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR61	15	drainage 61	Area <= 0.5 sq mi	0.1	2	10	15	18			4	
DR64	15	drainage 64	Area <= 0.5 sq mi	0.0	1	3	5	6			4	
DR65	15	drainage 65	Area <= 0.5 sq mi	0.2	3	13	20	23			4	
DR66	15	drainage 66	Small Undefined Area									
cLET4	16	(c)Lewis t4	Area > 1 and <= 5 sq mi	1.1	21	69	101	119	41	3	4	130
DR62	16	drainage 62	Area <= 0.5 sq mi	0.1	2	8	13	15			4	
Alexander Creek Watershed												
cWO1	17	(c)Wolverine 1	Area > 1 and <= 5 sq mi	1.5	20	64	92	108	20	2.5	4	125
DR51	17	drainage 51	Small Undefined Area									
DR52	18	drainage 52	Area <= 0.5 sq mi	0.4	8	28	42	50			4	
DR53	18	drainage 53	Small Undefined Area									
DR54	18	drainage 54	Small Undefined Area									
DR55	18	drainage 55	Area <= 0.5 sq mi	0.2	5	18	28	33			4	
DR56	18	drainage 56	Area <= 0.5 sq mi	0.1	2	7	10	12			4	
cWOT1	19	(c)Wolverine t1	Area > 1 and <= 5 sq mi	3.6	52	155	221	256	21	4	4	100
DR57	19	drainage 57	Area <= 0.5 sq mi	0.2	4	15	23	28			4	
cWOT2	20	(c)Wolverine t2	Area <= 0.5 sq mi	0.1	2	9	14	17			4	
SP6	20	spring 6	Small Undefined Area									

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR44	20	drainage 44	Small Undefined Area									
cWOT3	20	(c)Wolverine t3	Area <= 0.5 sq mi	0.2	4	15	23	28			4	
DR45	20	drainage 45	Area <= 0.5 sq mi	0.1	2	8	12	15			4	
DR46	20	drainage 46	Area <= 0.5 sq mi	0.4	8	27	41	49			4	
DR47	20	drainage 47	Small Undefined Area									
DR43	21	drainage 43	Area <= 0.5 sq mi	0.1	3	12	18	21			4	
SP5	21	spring 5	Small Undefined Area									
cWOT5	21	(c)Wolverine t3	Area > 0.5 and <= 1 sq mi	0.7	14	47	70	83			4	
cWOT4	21	(c)Wolverine t3	Area <= 0.5 sq mi	0.1	2	6	10	12			4	
SP7	21	spring 7	Area <= 0.5 sq mi	0.0	1	4	7	8			4	
DR48	21	drainage 48	Area <= 0.5 sq mi	0.2	5	18	27	33			4	
SP8	21	spring 8	Small Undefined Area									
DR49	21	drainage 49	Small Undefined Area									
cWOT8	22	(c)Wolverine t3	Area <= 0.5 sq mi	0.2	4	16	24	29			4	
DR40	22	drainage 40	Area <= 0.5 sq mi	0.1	1	6	9	11			4	
DR41	22	drainage 41	Small Undefined Area									
DR42	22	drainage 42	Area <= 0.5 sq mi	0.1	2	7	10	12			4	
cWOT7	22	(c)Wolverine t3	Area <= 0.5 sq mi	0.3	6	22	34	40	7	2	4	130
cWOT6	22	(c)Wolverine t3	Area <= 0.5 sq mi	0.4	7	25	37	45			4	
cWOT9	23	(c)Wolverine t3	Area <= 0.5 sq mi	0.3	6	23	34	41			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR34	23	drainage 34	Area <= 0.5 sq mi	0.1	3	11	17	20			4	
DR35	23	drainage 35	Small Undefined Area									
cWOT10	23	(c)Wolverine t3	Area <= 0.5 sq mi	0.3	6	23	35	42			4	
DR36	23	drainage 36	Small Undefined Area									
DR37	24	drainage 37	Small Undefined Area									
DR38	24	drainage 38	Area <= 0.5 sq mi	0.0	1	3	5	6			4	
DR39	24	drainage 39	Small Undefined Area									
cWOT11	24	(c)Wolverine t3	Area <= 0.5 sq mi	0.1	3	10	15	19			4	
cWOT12	24	(c)Wolverine t3	Area <= 0.5 sq mi	0.4	7	26	39	47			4	
cUS1	26	(c)U. Sucker 1	Area > 5 and <= 10 sq mi	7.3	96	266	371	428	21	2.5	3.3	550
cUST1	27	(c)U. Sucker t1	Area > 1 and <= 5 sq mi	1.5	22	69	100	118	19	3.5	4	100
cUST2	27	(c)U. Sucker t2	Area > 0.5 and <= 1 sq mi	0.9	12	40	59	69	8	4	4	100
cUST3	28	(c)U. Sucker t3	Area > 1 and <= 5 sq mi	1.1	16	53	77	90	9	3.5	4	100
cUST4	28	(c)U. Sucker t4	Area <= 0.5 sq mi	0.1	1	5	7	9			4	
cSUT1	29	(c)Sucker Lake t1	Area > 1 and <= 5 sq mi	2.3	28	85	121	141	14	3.5	4	100
cLST2	30	(c)L. Sucker t2	Area > 1 and <= 5 sq mi	1.3	23	76	111	130	7	4.5	6.1	420
cTOT1	31	(c)Tom's t1	Area > 1 and <= 5 sq	3.2	47	141	201	234	20.5	2.7	4	320

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
			mi									
cTOT2	31	(c)Tom's t2	Area > 1 and <= 5 sq mi	2.6	34	101	144	167	23	2.5	4	450
cTOT3	32	(c)Tom's t3	Area > 0.5 and <= 1 sq mi	0.9	17	58	86	101			4	
cBE1	33	(c)Bear 1	Area > 10 sq mi	17.2	211	548	750	858	40	3.5	4.4	1,420
cTET1	34	(c)Texas t1	Area <= 0.5 sq mi	0.0	1	4	7	8			4	
DR69	34	drainage 69	Area <= 0.5 sq mi	0.4	8	30	44	53			4	
cTET4	34	(c)Texas t4	Area > 0.5 and <= 1 sq mi	0.5	7	22	32	38			4	
cTET2	36	(c)Texas t2	Area > 0.5 and <= 1 sq mi	0.5	7	23	34	40	12	1.8	4	100
cTET3	36	(c)Texas t3	Area > 0.5 and <= 1 sq mi	0.7	12	42	62	74	6.5	1.5	4	100
DR70	36	drainage 70	Area <= 0.5 sq mi	0.1	2	6	9	10			4	
cTET5	36	(c)Texas t5	Area <= 0.5 sq mi	0.2	5	18	27	32			4	
DR71	36	drainage 71	Small Undefined Area									
cTE1	37	(c)Texas 1	Area > 1 and <= 5 sq mi	2.9	38	113	161	187	32	5	4	1,235
cTET6	37	(c)Texas t6	Area <= 0.5 sq mi	0.1	2	10	15	18			4	
DR74	37	drainage 74	Area <= 0.5 sq mi	0.1	2	6	10	12			4	
DR75	37	drainage 75	Area <= 0.5 sq mi	0.0	1	3	4	5			4	
cCLT2	38	(c)Clear t2	Area <= 0.5 sq mi	0.2	4	14	22	27	6.5	1.5	4	80

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
cCLT1	38	(c)Clear t1	Area <= 0.5 sq mi	0.4	8	28	42	50	7	2	4	100
cCLT8	38	(c)Clear t8	Area <= 0.5 sq mi	0.2	4	16	25	30			4	
DR73	38	drainage 73	Area <= 0.5 sq mi	0.1	3	11	16	20			4	
cCL2	39	(c)Clear 2	Area > 1 and <= 5 sq mi	4.6	62	180	255	295	18	4.2	4	60
DR72	39	drainage 72	Small Undefined Area									
DR76	39	drainage 76	Small Undefined Area									
cCLT3	39	(c)Clear t3	Area <= 0.5 sq mi	0.2	3	12	18	22	5.5	1	4	100
DR77	40	drainage 77	Area <= 0.5 sq mi	0.2	4	17	25	30			4	
cCLT4	40	(c)Clear t4	Area <= 0.5 sq mi	0.3	6	22	33	40	16	2.5	4	80
cCLT5	40	(c)Clear t5	Area > 0.5 and <= 1 sq mi	0.9	17	57	83	99	14	2.8	4	100
cCLT6	40	(c)Clear t6	Area <= 0.5 sq mi	0.2	4	15	22	27			4	
cCLT9	40	(c)Clear t9	Area <= 0.5 sq mi	0.3	5	20	31	37			4	
cCL1	41	(c)Clear 1	Area > 1 and <= 5 sq mi	2.5	33	98	140	163	31	1.9	4	1,090
cCLT7	41	(c)Clear t7	Area > 0.5 and <= 1 sq mi	0.5	10	36	54	64			4	
cCLT10	41	(c)Clear t10	Area <= 0.5 sq mi	0.0	0	2	3	4			4	
cCLT11	41	(c)Clear t11	Area <= 0.5 sq mi	0.3	5	19	29	34			4	
DR78	41	drainage 78	Area <= 0.5 sq mi	0.2	3	13	20	23			4	
DR79	41	drainage 79	Area <= 0.5 sq mi	0.2	3	12	18	21			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
cDE1	42	(c)Deep 1	Area > 1 and <= 5 sq mi	1.0	14	44	63	74	12	2.8	4	160
cDE2	43	(c)Deep 2	Area > 1 and <= 5 sq mi	3.9	40	111	156	180	25	3.2	4	570
Skwentna River Watershed												
sEIT1	44	(s)Skwentna t1	Area > 1 and <= 5 sq mi	2.8	35	103	146	170	20	3.25	4	400
sEIT2	44	(s)Skwentna t2	Area <= 0.5 sq mi	0.2	3	13	19	23			4	
sEIT3	44	(s)Skwentna t3	Area <= 0.5 sq mi	0.3	5	20	30	36			4	
DR83	44	drainage 83	Small Undefined Area									
sEI1	45	(s)Skwentna 1	Area > 5 and <= 10 sq mi	6.6	76	209	291	335	28	5	4.8	1,818
sEI1_sh	45	(s)Eightmile 1 Shoofly	Shoofly	6.6	76	209	291	335				
DR80	46	drainage 80	Area <= 0.5 sq mi	0.2	3	13	19	23			4	
sSKT29	48	(s)Skwentna t29	Small Undefined Area						2	2.7		
sSKT31	48	(s)Skwentna t31	Small Undefined Area									
sSKT32	49	(s)Skwentna t32	Area <= 0.5 sq mi	0.4	5	17	26	30			4	
DR81	49	drainage 81	Area <= 0.5 sq mi	0.5	6	19	28	34			4	
sSKT33	49	(s)Skwentna t33	Area <= 0.5 sq mi	0.2	4	13	19	22			4	
DR82	49	drainage 82	Small Undefined Area									
sSK1	50	(s)Skwentna 1	Area > 10 sq mi	2,223.9	33,200	55,600	68,500	75,400	1,165	8	HDD	2,981
sSKT34	51	(s)Skwentna t34	Area <= 0.5 sq mi	0.2	4	13	20	24			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
sSKT35	51	(s)Skwentna t35	Area <= 0.5 sq mi	0.3	4	14	22	26			4	
DR67	52	drainage 67	Small Undefined Area									
sSLT1	53	(s)Skwentna t1	Braid/Branch	2.4	32	94	134	156	16	2.4		
sSL1	53	(s)Skwentna 1	Area > 10 sq mi	40.2	543	1,240	1,635	1,842	46	4	8	960
SP9	53	spring 9	Small Undefined Area									
DR68	53	drainage 68	Small Undefined Area									
SP10	53	spring 10	Small Undefined Area									
sSKT8	59	(s)Skwentna t8	Area > 1 and <= 5 sq mi	3.3	53	146	203	234	20	3.5	4	300
DR7	61	drainage 7	Small Undefined Area									
DR8	61	drainage 8	Area <= 0.5 sq mi	0.1	3	11	17	21			4	
DR9	62	drainage 9	Small Undefined Area									
DR10	62	drainage 10	Small Undefined Area									
DR11	62	drainage 11	Area <= 0.5 sq mi	0.2	4	15	22	26			4	
sSKT36	62	(s)Skwentna t36	Area > 1 and <= 5 sq mi	3.0	49	138	193	223	10	2	5.2	150
sSKT30	63	(s)Skwentna t30	Area > 5 and <= 10 sq mi	6.2	99	262	361	415	26	2.3	5	280
DR23	63	drainage 23	Small Undefined Area									
sSKT39_sh	63	(s)Skwentna t39 Shoofly	Shoofly	6.2	99	262	361	415				
sSLT37_s	63	(s)Skwentna t37	Shoofly	6.2	99	262	361	415				

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
h		Shoofly										
sSLT38_sh	63	(s)Skwentna t38 Shoofly	Shoofly	6.2	99	262	361	415				
sSKT30_sh	63	(s)Skwentna t30 Shoofly	Shoofly	6.2	99	262	361	415				
sSKT40	64	(s)Skwentna t40	Area > 1 and <= 5 sq mi	1.9	34	99	140	163	10	4	4	500
DR15	64	drainage 15	Small Undefined Area									
sSKT41	65	(s)Skwentna t41	Area > 1 and <= 5 sq mi	1.3	23	70	100	117	8	2.6	4.2	395
DR14	65	drainage 14	Area <= 0.5 sq mi	0.2	3	12	17	21			4	
sSKT13	66	(s)Skwentna t13	Area > 1 and <= 5 sq mi	3.6	56	154	214	247	20	1.5	4	240
DR6	66	drainage 6	Area <= 0.5 sq mi	0.1	3	10	16	19			4	
sSKT14_sh	67	(s)Skwentna t14 Shoofly	Shoofly	2.0	34	98	139	161				
sSKT14	67	(s)Skwentna t14	Area > 1 and <= 5 sq mi	2.0	34	98	139	161	19	1.3	4	70
DR16	67	drainage 16	Area <= 0.5 sq mi	0.1	2	8	13	15			4	
DR17	67	drainage 17	Area <= 0.5 sq mi	0.1	3	9	14	17			4	
DR18	67	drainage 18	Area <= 0.5 sq mi	0.0	1	6	9	11			4	
DR19	67	drainage 19	Small Undefined Area									
SP1	67	spring 1	Small Undefined Area									

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR20	67	drainage 20	Area <= 0.5 sq mi	0.2	4	15	22	26			4	
DR21	67	drainage 21	Small Undefined Area									
sSKT15	68	(s)Skwentna t15	Area > 1 and <= 5 sq mi	1.7	29	84	119	138	22	2.1	4	315
sSKT43	68	(s)Skwentna t43	Area <= 0.5 sq mi	0.2	5	17	26	31			4	
SP2	68	spring 2	Small Undefined Area									
sSKT44	68	(s)Skwentna t44	Braid/Branch	1.7	29	83	118	137				
sSKT15_sh	68	(s)Skwentna t15 Shoofly	Shoofly	1.7	29	84	119	138				
sSKT17	71	(s)Skwentna t17	Area > 1 and <= 5 sq mi	1.4	23	68	97	113	4	2.8	6.8	120
sSKT17_sh	71	(s)Skwentna t17 Shoofly	Shoofly	1.4	23	68	97	113	5	2.8		
sSKT28	72	(s)Skwentna t28	Area > 1 and <= 5 sq mi	1.1	17	49	70	82	20	2.5	4	470
sSKT19	73	(s)Skwentna t19	Area <= 0.5 sq mi	0.1	3	10	15	19			4	
sSKT20	74	(s)Skwentna t20	Area <= 0.5 sq mi	0.4	8	25	36	42			4	
sSKT21	75	(s)Skwentna t21	Area > 1 and <= 5 sq mi	4.1	87	228	313	359	12	2.3	6.2	165
DR12	75	drainage 12	Small Undefined Area									
DR13	75	drainage 13	Small Undefined Area									
sSKT45	75	(s)Skwentna t45	Area <= 0.5 sq mi	0.4	9	29	43	50			4	
DR5	77	drainage 5	Area <= 0.5 sq mi	0.4	8	26	38	44			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR84	78	drainage 84	Small Undefined Area									
Yentna River Watershed												
yRET1	79	(y)Red Lake t1	Area > 0.5 and <= 1 sq mi	0.7	24	78	113	133	18	3.5	4	690
yRET1_sh	79	(y)Red Lake Creek Shoofly 1	Shoofly	0.2	8	28	41	49			4	
yRET2	79	(y)Red Lake t2	Area <= 0.5 sq mi	0.2	8	28	41	49			4	
yRET3	79	(y)Red Lake t3	Area <= 0.5 sq mi	0.2	8	28	41	49			4	
yRET2_sh	79	(y)Red Lake Creek Shoofly 2	Shoofly	0.2	8	28	41	49				
Skwentna River Watershed												
sSKT24	81	(s)Skwentna t24	Area > 5 and <= 10 sq mi	8.6	242	628	859	982	31	4.5	4.1	280
sSKT46	82	(s)Skwentna t46	Area <= 0.5 sq mi	0.4	13	42	61	72			4	
sSKT26	83	(s)Skwentna t26	Area > 0.5 and <= 1 sq mi	0.5	18	58	85	99	15	2.7	4	420
sSKT25	83	(s)Skwentna t25	Area > 0.5 and <= 1 sq mi	0.6	20	63	92	108	13	1.8	4	100
sSKT47	83	(s)Skwentna t47	Area > 0.5 and <= 1 sq mi	0.8	28	87	126	147			4	
sSKT27	84	(s)Skwentna t27	Area > 1 and <= 5 sq mi	4.5	136	373	518	596	50	4.5	4	290
sHA1	86	(s)Happy 1	Area > 10 sq mi	337.9	7,776	15,202	19,110	21,104	168	8	HDD	3,453

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
sHAT11	91	(s)Happy t11	Area <= 0.5 sq mi	0.4	19	64	95	112			4	
sHAT1	92	(s)Happy t1	Area > 0.5 and <= 1 sq mi	0.7	29	94	138	162	25	1.7	4	170
DR22	92	drainage 22	Area > 0.5 and <= 1 sq mi	0.6	26	87	127	150			4	
sHAT2	94	(s)Happy t2	Area > 1 and <= 5 sq mi	3.0	88	245	343	396	49	2.25	4	405
sHAT10	94	(s)Happy t10	Area <= 0.5 sq mi	0.3	11	38	57	67	5	1.5	5	150
sCA1	95	(s)Canyon 1	Area > 10 sq mi	25.1	719	1,737	2,323	2,632	33	2.5	9.2	210
DR103	98	drainage 103	Area <= 0.5 sq mi	0.2	9	32	48	57			4	
DR104	98	drainage 104	Area <= 0.5 sq mi	0.1	4	16	25	30			4	
DR105	98	drainage 105	Small Undefined Area									
DR106	98	drainage 106	Small Undefined Area									
sCCt1	99	(s)Canyon Creek t1	Area <= 0.5 sq mi	0.2	11	37	56	67			4	
DR101	99	drainage 101	Small Undefined Area									
DR107	99	drainage 107	Small Undefined Area									
DR108	99	drainage 108	Area <= 0.5 sq mi	0.0	1	4	7	8			4	
SP15	100	spring 15	Small Undefined Area									
sHAT3	101	(s)Happy t3	Area <= 0.5 sq mi	0.5	14	46	68	79	2	1	9.4	150
sSQ2	101	(s)Squaw 2	Area > 10 sq mi	13.4	376	946	1,282	1,459	17.5	2.5	9.4	870
DR109	101	drainage 109	Area > 0.5 and <= 1 sq mi	0.6	23	74	109	128			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
DR102	101	drainage 102	Area <= 0.5 sq mi	0.1	4	16	25	30			4	
sIN1	103	(s)Indian 1	Area > 10 sq mi	18.5	502	1,230	1,652	1,875	23	1.333	9.9	290
sHAT6	107	(s)Happy t6	Area <= 0.5 sq mi	0.4	11	35	51	60	2	1	8	1,165
sHA3	108	Happy River	Area > 10 sq mi	112.0	3,180		8,980		98.1	1.6	5.1	230
sTMT13	114	Threemile Creek Tributary	Area > 5 and <= 10 sq mi	6.2	210		810		132.5	0.3	4	250
sTMT7	116	Threemile Creek Tributary	Area <= 0.5 sq mi	0.4	15		80		14.1	0.3	4	65
Kuskokwim River Watershed												
kTAT26	120	So Long Creek Tributary	Area > 1 and <= 5 sq mi	1.5	50		240		21.7	0.3	4	450
kTAT29	120	So Long Creek Tributary	Area > 1 and <= 5 sq mi	1.3	70		270		23	0.3	4	45
kTAT21	121	So Long Creek Tributary	Area > 1 and <= 5 sq mi	1.3	40		200		11.8	0.7	5.2	1,350
kTAT25	121	So Long Creek Tributary	Area > 1 and <= 5 sq mi	2.1	70		290		39.4	0.3	4	75
kTAT15	123	So Long Creek Tributary	Area <= 0.5 sq mi	0.5	20		100		9.8	0.3	4	80
kTAT16	123	So Long Creek	Area > 10 sq mi	18.0	430		1,480		211.3	0.7	4	750
kTAT12	125	So Long Creek Tributary	Area > 5 and <= 10 sq mi	5.9	180		700		23.3	1	4	30
kTAT11	126	So Long Creek Tributary	Area > 1 and <= 5 sq mi	1.5	40		200		15.7	0.3	4	30

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kTA2	127	Tatina River	Area > 10 sq mi	106.0	1,600		4,800		392.7	1.3	5.9	610
kJNT26	133	Jones Creek Tributary	Area > 5 and <= 10 sq mi	8.3	300		1,030		111.5	0.7	4.3	6,150
kJNT29	133	Jones Creek Tributary	Area > 1 and <= 5 sq mi	3.2	110		450		143.4	0.3	4	3,000
kJNT15	136	Jones Creek Tributary	Area > 1 and <= 5 sq mi	3.4	120		490		35.4	0.7	5.4	4,000
kJN2	137	Jones Creek	Area > 10 sq mi	64.0	1,140		3,660		368.8	1	5.9	1,900
kJNT14	137	Jones Creek Tributary	Area > 5 and <= 10 sq mi	6.5	140		590		131.6	0.3	4	4,000
kJN3	137	Jones Creek	Area > 10 sq mi	57.0	1,050		3,380		311.7	1	5.8	800
kJNT10	140	Jones Creek Tributary	Area > 1 and <= 5 sq mi	2.2	50		260		46.4	0.3	4.3	200
kSF3	146	South Fork Kuskokwim	Area > 10 sq mi	1,696.0	15,160		35,560		9,000	1.3	6.5	13,000
kTI2	150	Tin Creek	Area > 10 sq mi	23.0	280		1,170		101	1	4	650
kSFT23	153	(k)SF Kusko t23	Area > 1 and <= 5 sq mi	1.3	31	98	142	166	2	1.5	6	350
kSFT24	153	(k)SF Kusko t24	Area > 1 and <= 5 sq mi	1.4	71	201	284	329	2	1.5	6	155
kSFT43	154	(k)SF Kusko t43	Area <= 0.5 sq mi	0.3	19	63	92	109			4	
kSFT29	155	(k)SF Kusko t29	Area > 1 and <= 5 sq mi	2.1	33	113	167	196	2	1.5	4.8	570
kSFT28	155	(k)SF Kusko t28	Area <= 0.5 sq mi	0.4	23	72	105	124			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kSFT27	155	(k)SF Kusko t27	Area <= 0.5 sq mi	0.1	5	18	27	32			4	
kSFT26	155	(k)SF Kusko t26	Area <= 0.5 sq mi	0.2	12	40	59	70			4	
kSH1	156	(k)Sheep 1	Area > 10 sq mi	87.7	1,464	3,212	4,172	4,666	290	5	4	2,800
kSHT14	157	(k)Sheep t14	Area <= 0.5 sq mi	0.1	6	23	35	42			4	
kSHT16	158	(k)Sheep t16	Area <= 0.5 sq mi	0.5	27	84	122	143			4	
kSHT15	158	(k)Sheep t15	Area <= 0.5 sq mi	0.3	12	41	60	70			4	
kSHT17	159	(k)Sheep t17	Area > 0.5 and <= 1 sq mi	0.9	44	131	188	219			4	
kSHT18	159	(k)Sheep t18	Area > 1 and <= 5 sq mi	1.4	35	108	154	180	3	1.5	6	290
kSHT19	159	(k)Sheep t19	Area > 1 and <= 5 sq mi	1.3	26	96	146	174	3	1.5	6	150
kSHT20	160	(k)Sheep t20	Area > 0.5 and <= 1 sq mi	0.5	25	82	121	142			4	
kSHT21	160	(k)Sheep t21	Area <= 0.5 sq mi	0.3	8	32	49	60			4	
kSHT2	161	(k)Sheep t2	Area > 5 and <= 10 sq mi	6.5	133	380	532	614	17	2	5.8	445
kSHT6	161	(k)Sheep t6	Area <= 0.5 sq mi	0.4	23	72	105	123			4	100
kSHT22	162	(k)Sheep t22	Area > 1 and <= 5 sq mi	1.8	34	115	168	198	3	1.5	6	150
kSHT4	163	(k)Sheep t4	Area > 0.5 and <= 1 sq mi	0.7	13	53	83	100			4	100
kSHT5	164	(k)Sheep t5	Area > 1 and <= 5 sq	2.8	44	149	220	259	10	1.5	5.6	500

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
			mi									
DR94	166	drainage 94	Small Undefined Area									
kPI1	166	(k)Pitka Fk 1	Area > 1 and <= 5 sq mi	2.7	29	109	164	195	4	2.7	6	80
kWI1	168	(k)Windy Fk 1	Area > 10 sq mi	289.9	2,261	5,111	6,653	7,442	1,200	4	4	4,860
kWIT1	169	(k)Windy Fk t1	Area > 0.5 and <= 1 sq mi	0.7	10	44	70	85	8	2	4	50
kKHT1	170	(k)Khuchaynik t1	Braid/Branch	1.5	16	62	94	113	5	2	4	
kKHT2	170	(k)Khuchaynik t2	Braid/Branch	0.9	12	48	75	90				
kKHT3	170	(k)Khuchaynik t3	Braid/Branch	0.1	1	5	9	11				
kKH1	171	(k)Khuchaynik 1	Area > 10 sq mi	23.5	352	935	1,282	1,466	448	1.5	4	24,500
kMFT12	172	(k)MF Kusko t12	Area <= 0.5 sq mi	0.2	3	14	24	30			4	
kMFT1	173	(k)MF Kusko t1	Area > 1 and <= 5 sq mi	3.1	40	140	208	246	6.5	2.8	6	150
kMFT13	173	(k)MF Kusko t13	Area > 1 and <= 5 sq mi	4.4	85	268	388	454	6.5	2.8	4	150
kMFT2	174	(k)MF Kusko t2	Braid/Branch						27	4.7		
kMFT14	174	(k)MF Kusko t14	Area > 10 sq mi	16.7	208	601	842	971	45	2.3	4.4	5,230
kMFT15	174	(k)MF Kusko t15	Area > 1 and <= 5 sq mi	1.9	53	171	250	293	13	3.2	6.8	300
kMFT16	176	(k)MF Kusko t16	Area <= 0.5 sq mi	0.5	27	86	124	146	9	2.7	5.6	150
kMFT17	176	(k)MF Kusko t17	Area <= 0.5 sq mi	0.1	8	27	41	49			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kMFT3	177	(k)MF Kusko t3	Area > 10 sq mi	18.8	276	767	1,067	1,227	60	3.5	4.3	3,850
kMFT4	177	(k)MF Kusko t4	Braid/Branch	1.4	22	81	123	146	5	3		
kMFT9	178	(k)MF Kusko t9	Area <= 0.5 sq mi	0.4	22	69	102	119	3	0.75	7.2	100
kMFT5	179	(k)MF Kusko t5	Area > 5 and <= 10 sq mi	7.9	149	419	584	673	105	3.5	4	1,020
kMFT18	179	(k)MF Kusko t18	Area > 0.5 and <= 1 sq mi	0.8	17	67	102	122			4	
kMFT19	179	(k)MF Kusko t19	Area > 5 and <= 10 sq mi	6.4	84	262	376	437	32	4	4	
kMFT6	180	(k)MF Kusko t6	Area > 5 and <= 10 sq mi	5.7	80	254	367	429	11	3	7.1	810
kMFT20	181	(k)MF Kusko t20	Area <= 0.5 sq mi	0.4	15	53	79	94			4	
kMFT7	181	(k)MF Kusko t7	Area <= 0.5 sq mi	0.4	8	34	54	65	9	0.75	4	100
kMF1	183	(k)MF Kusko 1	Area > 10 sq mi	84.0	908	2,193	2,916	3,291	1,050	3.5	4	2,580
kMFT11	184	(k)MF Kusko t11	Area > 0.5 and <= 1 sq mi	0.6	8	31	46	55			4	
kMFT10	184	(k)MF Kusko t10	Area > 1 and <= 5 sq mi	4.4	55	184	270	316	15	6.5	4	500
kMFT8	185	(k)MF Kusko t8	Area > 10 sq mi	44.2	876	1,967	2,572	2,885	70	4.5	9.3	1,805
kBIT9	186	(k)Big t9	Area <= 0.5 sq mi	0.1	6	22	34	40			4	
kBIT12	187	(k)Big t12	Area <= 0.5 sq mi	0.4	14	46	66	78	6	1.7	4	320
kBIT14	188	(k)Big t14	Area > 0.5 and <= 1 sq mi	0.8	23	73	105	122			4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kBIT15	188	(k)Big t15	Area <= 0.5 sq mi	0.4	4	17	28	33	6	2.7	4	150
kBIT1	189	(k)Big t1	Area > 1 and <= 5 sq mi	1.5	23	86	130	154	5	1.5	6	200
kBIT2	189	(k)Big t2	Area > 1 and <= 5 sq mi	3.3	40	147	221	263	4	2	6	80
kBI1	191	(k)Big 1	Area > 10 sq mi	660.5	3,975	8,463	10,794	11,967	1,145	5	4	6,775
kBIT11	191	(k)Big t11	Braid/Branch	1.6	15	62	95	114	21	2.3		
kBIT16	191	(k)Big t16	Braid/Branch									
kBI2	191	(k)Big 2	Braid/Branch						46	2		
kBIT17	192	(k)Big t17	Braid/Branch	0.2	2	8	12	15			4	
kBIT3	192	(k)Big t3	Braid/Branch	1.5	30	110	165	197				
kBIT4	193	(k)Big t4	Area <= 0.5 sq mi	0.3	1	6	9	12	3.6	2	6	270
DR85	194	drainage 85	Small Undefined Area									
kBIT5	194	(k)Big t5	Area > 1 and <= 5 sq mi	2.2	29	111	171	204	4	1.5	6	150
kBIT18	194	(k)Big t18	Area > 0.5 and <= 1 sq mi	0.9	15	62	96	116			4	
kBIT6	195	(k)Big t6	Area <= 0.5 sq mi	0.4	4	20	33	40			4	
kBIT13	196	(k)Big t13	Area <= 0.5 sq mi	0.3	4	16	26	31			4	
kBIT10	198	(k)Big t10	Area <= 0.5 sq mi	0.3	3	12	20	24			4	
kBIT7	201	(k)Big t7	Area > 1 and <= 5 sq mi	2.7	21	82	125	148	2	1.5	6	140

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kBIT8	203	(k)Big t8	Area <= 0.5 sq mi	0.1	0	2	3	4	1		4	
kTLT1	204	(k)Tatlawiksuk t1	Area > 10 sq mi	18.6	139	452	653	763	26	3	7.9	530
kTLT2	205	(k)Tatlawiksuk t2	Area > 10 sq mi	39.3	300	903	1,279	1,481	43	5	7.6	1,260
kTLT3	206	(k)Tatlawiksuk t3	Area > 0.5 and <= 1 sq mi	0.8	12	51	80	97	1	1.5	4	370
kTLT4	207	(k)Tatlawiksuk t4	Area > 1 and <= 5 sq mi	1.6	20	83	129	156	8	5	6.1	480
DR86	207	drainage 86	Small Undefined Area									
kTLT5	208	(k)Tatlawiksuk t5	Area > 10 sq mi	10.0	93	313	458	537	22	3.3	4.6	1,290
kTLT34	209	(k)Tatlawiksuk t34	Area > 0.5 and <= 1 sq mi	0.5	7	33	53	64			4	
kTLT35	210	(k)Tatlawiksuk t35	Area > 1 and <= 5 sq mi	1.9	19	77	118	142	3	5	6	100
kTLT7	211	(k)Tatlawiksuk t7	Area > 10 sq mi	12.5	125	405	587	686	12	4.5		
DR88	211	drainage 88	Small Undefined Area									
DR93	211	drainage 93	Small Undefined Area									
kTLT6	211	(k)Tatlawiksuk t6	Area > 10 sq mi	12.5	125	405	587	686	7	3.3	9.9	2,380
kTLT8	212	(k)Tatlawiksuk t8	Area > 1 and <= 5 sq mi	2.6	26	99	151	180	10	5	5.9	690
kTLT36	213	(k)Tatlawiksuk t36	Area > 0.5 and <= 1 sq mi	0.9	12	52	82	100			4	
kTLT9	214	(k)Tatlawiksuk t9	Area > 5 and <= 10 sq mi	6.7	65	225	332	391	15	1.25	5.6	410

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kTLT10	216	(k)Tatlawiksuk t10	Area > 5 and <= 10 sq mi	7.6	72	251	371	438	12	5.5	8.9	120
kTL1	217	(k)Tatlawiksuk 1	Area > 10 sq mi	257.9	1,446	3,699	4,986	5,657	152	5	7	5,860
kTLT37	217	(k)Tatlawiksuk t37	Braid/Branch	0.2	2	12	20	24	8	2.5	4	
kTLT11	217	(k)Tatlawiksuk t11	Braid/Branch						17	1		
kTLT14	219	(k)Tatlawiksuk t13	Area > 10 sq mi	12.2	98	327	476	558	22	4.5	5.1	775
kTLT29	219	(k)Tatkawiksuk t29	Area > 1 and <= 5 sq mi	1.8	17	70	107	128	12	4.5	4	400
kTLT15	220	(k)Tatlawiksuk t14	Area > 0.5 and <= 1 sq mi	0.7	7	30	48	57	5	4	4.6	150
kTLT16	221	(k)Tatlawiksuk t15	Area > 10 sq mi	17.7	158	507	733	856	34	4	5.6	760
kTLT17	222	(k)Tatlawiksuk t16	Area > 1 and <= 5 sq mi	2.7	23	89	135	161	3	5	6	1,240
kTLT18	223	(k)Tatlawiksuk t17	Area > 1 and <= 5 sq mi	2.4	25	97	148	176	3	1.5	6	250
kTLT19	224	(k)Tatlawiksuk t18	Area > 0.5 and <= 1 sq mi	0.9	7	31	49	59			4	
kTLT20	225	(k)Tatlawiksuk t20	Area > 1 and <= 5 sq mi	3.9	39	145	218	258	8	4	5.3	420
kTLT38	225	(k)Tatlawiksuk t38	Area > 0.5 and <= 1 sq mi	0.5	8	36	58	70	2	2.5	4	260
DR87	226	drainage 87	Small Undefined Area									
kTLT30	226	(k)Tatlawiksuk t30	Area > 0.5 and <= 1 sq mi	0.6	8	37	58	71	2	1.5	4	350

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kTLT21	227	(k)Tatlawiksuk t21	Area <= 0.5 sq mi	0.2	0	3	4	6	8	6	6	460
kTLT31	227	(k)Tatlawiksuk t31	Area <= 0.5 sq mi	0.1	2	12	19	24	2	1	4.6	530
kTLT32	228	(k)Tatlawiksuk t32	Area > 0.5 and <= 1 sq mi	0.5	7	29	46	56	1	0.75	4	460
kTLT22	229	(k)Tatlawiksuk t22	Area > 1 and <= 5 sq mi	1.1	14	60	94	113	4	1.5	7.6	180
kTLT33	229	(k)Tatlawiksuk t33	Area <= 0.5 sq mi	0.2	2	11	17	21	0.5	0.5	9.5	1,170
kTLT24	232	(k)Tatlawiksuk t24	Area > 1 and <= 5 sq mi	1.5	19	77	120	145	2	1	6	400
kTLT23	232	(k)Tatlawiksuk t23	Area > 10 sq mi	103.7	698	1,924	2,653	3,040	66	2.5	7.9	3,930
kTLT25	233	(k)Tatlawiksuk t25	Area > 0.5 and <= 1 sq mi	0.6	8	37	58	71	2	1	4	335
kTLT26	234	(k)Tatlawiksuk t26	Area > 1 and <= 5 sq mi	1.4	16	66	102	123	6	2.2	6.3	240
kTLT27	235	(k)Tatlawiksuk t27	Area > 0.5 and <= 1 sq mi	0.9	9	40	63	76	6	3	4	210
kKUT1	238	(k)Kuskokwim t1	Area > 1 and <= 5 sq mi	4.1	38	143	215	256	4	2.33	6	900
kKUT2	238	(k)Kuskokwim t2	Area > 0.5 and <= 1 sq mi	0.6	9	40	64	78	3	3.8	4	330
kKU1b	240	(k)Kuskokwim 1	Braid/Branch	15,165.3	80,075	142,957	171,450	185,205	454	8	HDD	7,101
DR89	240	drainage 89	Small Undefined Area									
kKUT4	240	(k)Kuskokwim t4	Braid/Branch									

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kKUT11	240	(k)Kuskokwim t11	Braid/Branch									
kKUT12	240	(k)Kuskokwim t12	Braid/Branch									
kKUT3	240	(k)Kuskokwim t3	Braid/Branch	3.6	40	151	229	273	8	3.8		
DR99	241	drainage 99	Small Undefined Area									
kKU1	241	(k)Kuskokwim 1	Area > 10 sq mi	15,165.3	80,075	142,957	171,450	185,205	984	10		
DR95	242	drainage 95	Area <= 0.5 sq mi	0.3	3	16	25	31			4	
DR100	242	drainage 100	Small Undefined Area									
kKUT13	242	(k)Kuskokwim t13	Area > 0.5 and <= 1 sq mi	0.6	9	39	62	75			4	
DR92	243	drainage 92	Area <= 0.5 sq mi	0.1	1	7	11	14			4	
kKUT9	243	(k)Kuskokwim t9	Area <= 0.5 sq mi	0.5	8	35	55	67			4	
kKUT8	243	(k)Kuskokwim t8	Area > 10 sq mi	30.1	235	725	1,033	1,200	50	6	5.4	1,245
kKUT14	244	(k)Kuskokwim t14	Area > 1 and <= 5 sq mi	1.0	15	60	94	114	2	1	6	100
kKUT6	245	(k)Kuskokwim t6	Area > 1 and <= 5 sq mi	1.4	18	75	117	141	2	3	6	270
kKUT15b	245	(k)Kuskokwim t15	Area <= 0.5 sq mi	0.1	2	9	15	19	3	1	4	
kKUT7	246	(k)Kuskokwim t7	Area <= 0.5 sq mi	0.2	4	18	29	36			4	90
kNUT1	248	(k)Nunsatuk t1	Area > 0.5 and <= 1 sq mi	0.6	9	40	63	77	4	1	4	200
kNUT2_sh	249	(k)Nunsatuk t2 Shoofly	Shoofly	0.4	7	31	49	59	6	2.5	4	

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kNUT2	249	(k)Nunsatuk t2	Area > 1 and <= 5 sq mi	1.2	14	57	89	107	5	3.5	5	170
kMO1	256	(k)Moose 1	Area > 5 and <= 10 sq mi	5.6	50	183	273	323	10	5	5.4	260
DR90	260	drainage 90	Small Undefined Area									
DR91	260	drainage 91	Small Undefined Area									
kLFT1	260	(k)Little South Fork	Area > 1 and <= 5 sq mi	1.7	18	73	113	135	3	2.8	7.6	200
DR97	263	drainage 97	Small Undefined Area									
DR98	263	drainage 98	Area <= 0.5 sq mi	0.4	7	29	47	57			4	
DR96	264	drainage 96	Area <= 0.5 sq mi	0.3	5	21	35	42			4	
kMOT1	266	(k)Moose t1	Area > 1 and <= 5 sq mi	1.2	12	49	76	91	6	2	5.4	310
kEFT1	270	(k)EF George t1	Area > 1 and <= 5 sq mi	4.8	49	177	265	313	18	4	4.5	200
kEF2	283	(k) EF George 2	Area > 10 sq mi	407.4	2,285	5,583	7,433	8,390	175	5.5	HDD	4,532
kEFT7	285	(k) EF George t7	Area > 1 and <= 5 sq mi	1.6	23	90	138	166	4	1.75	6	380
kEFT8	287	(k) EF George t8	Area > 1 and <= 5 sq mi	1.1	12	50	77	93	3		6	400
kEFT8_sh	287	(k)E Fork George t8 Shoofly	Shoofly	1.1	12	50	77	93				
kGET2	288	(k) George t2	Area > 0.5 and <= 1 sq mi	0.9	13	54	84	102	3		4	200

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kGET2_sh	288	(k)George t2 Shoofly	Shoofly	0.9	13	54	84	102				
kGET3	289	(k) George t3	Area > 0.5 and <= 1 sq mi	0.6	8	35	55	67	3		4	200
kGE2	291	(k) George 2	Area > 10 sq mi	496.2	2,827	6,730	8,894	10,011	155	7.5	HDD	2,957
kGET4	291	(k) George t4	Braid/Branch	7.0	62	218	322	379				
kGET5	291	(k) George t5	Braid/Branch									
kNF1	298	(k) NF George 1	Area > 10 sq mi	108.2	778	2,107	2,895	3,311	76	5	HDD	3,281
kNFT1	298	(k) NF George t1	Braid/Branch	0.4	6	28	44	54				
kAM2_sh	314	(k)American 2 Shoofly	Shoofly	0.3	8	34	53	65			4	
kAM3_sh	315	(k)American3 Shoofly	Shoofly	0.6	10	43	67	81			4	
North Option												
NR_SC1	86	Happy River Tributary #1	Area > 1 and < 10 sq mi						60	2	4	260
NR_SC2	87	Happy River Tributary #2	Area > 1 and < 10 sq mi						10		4	60
NR_SC3	88	Happy River Tributary #3a	Area > 1 and < 10 sq mi						12	3	4	100
NR_SC4	88	Happy River Tributary #3	Area > 1 and < 10 sq mi						10	3	4	100
NR_SC5	89	Happy River Tributary #4a	Area > 1 and < 10 sq mi						20	2.5	4	640

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
NR_SC6	89	Happy River Tributary #4	Area > 1 and < 10 sq mi						8	3	4	30
NR_SC7	90	Happy River Tributary #4b	Area > 1 and < 10 sq mi						3	2	4	30
NR_SC8	90	Happy River Tributary #5	Area > 1 and < 10 sq mi						4	1	4	30
NR_SC9	91	Happy River Tributary #6	Area > 1 and < 10 sq mi						5	1.5	4	30
NR_SC10	92	Happy River Tributary #7	Area > 1 and < 10 sq mi						40	5	7.2	200
NR_SC11	93	Happy River Tributary #8	Area > 1 and < 10 sq mi						15		4.2	60
NR_SC12	94	Happy River Tributary #9	Area > 1 and < 10 sq mi						3	0.3	4	30
NR_SC13	94	Happy River Tributary #10	Area > 1 and < 10 sq mi						15	2	4	60
NR_SC14	94	Happy River Tributary #11	Area > 1 and < 10 sq mi						4		4	30
NR_SC15	95	Happy River Tributary #12	Area > 1 and < 10 sq mi						4	0.8	4	30
NR_SC16	95	Happy River Tributary #13	Area > 1 and < 10 sq mi						4	1	4	30
NR_SC17	96	Happy River Tributary #14	Area > 1 and < 10 sq mi						4	1.5	4	30
NR_SC18	96	Happy River Tributary	Area > 1 and < 10 sq						5	2	4	30

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
		#15	mi									
NR_SC19	97	Happy River Tributary #16	Area > 1 and < 10 sq mi						8	2	4	60
NR_SC20	98	Glacier Creek	Area > 10 sq mi	16	485	1262	1724	1970	55	3 – 4.5	7.2	400
NR_SC21	100	Happy River Tributary #17	Area > 1 and < 10 sq mi						4	1.5	4	30
NR_SC22	100	Happy River Tributary #17a	Area > 1 and < 10 sq mi						1	1	4	30
NR_SC23	101	Happy River Tributary #18	Area > 1 and < 10 sq mi						3	0.3 - 2	4	30
NR_SC24	102	Happy River Tributary #19	Area > 1 and < 10 sq mi						8	1	4	30
NR_SC25	104	Happy River Tributary #20	Area > 1 and < 10 sq mi						3		4	30
NR_SC26	104	Moose Creek	Area > 10 sq mi	38	1084	2642	3538	4011	60	2.5	4.8	300
NR_SC27	106	Happy River Tributary #21	Area > 1 and < 10 sq mi						3	1.2	4	30
NR_SC28	106	Happy River Tributary #22	Area > 1 and < 10 sq mi						10	2	4	60
NR_SC29	107	Happy River Tributary #23	Area > 1 and < 10 sq mi						10		4	60
NR_SC30	107	Threemile Creek Tributary #1	Area > 1 and < 10 sq mi						10		4	60
NR_SC31	107	Threemile Creek	Area > 1 and < 10 sq						6	0.5	4	30

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg (feet)	Burial Length (feet)
		Tributary #2	mi									
NR_SC32	107	Threemile Creek Tributary #3	Area > 1 and < 10 sq mi						3	0.5	4	20
NR_SC33	108	Threemile Creek Tributary #4	Area > 1 and < 10 sq mi						4	0.5	4	30
NR_SC34	108	Threemile Creek Tributary #5	Area > 1 and < 10 sq mi						6	0.8	4	30
NR_SC35	108	Threemile Creek Tributary #6	Area > 1 and < 10 sq mi						3	0.3	4	30
NR_SC36	108	Threemile Creek Tributary #7	Area > 1 and < 10 sq mi						1.5	0.25	4	30
NR_SC37	109	Threemile Creek Tributary #8	Area > 1 and < 10 sq mi						5	0.5	4	30
NR_SC38	109	Threemile Creek Tributary #9	Area > 1 and < 10 sq mi						3	0.5	4	30
NR_SC39	109	Threemile Creek Tributary #10	Area > 1 and < 10 sq mi						3	1	4	30
NR_SC40	109	Threemile Creek Tributary #11	Area > 1 and < 10 sq mi						60	1.5 - 3	6	320
NR_SC41	111	Threemile Creek	Area > 10 sq mi	46	1299	3117	4157	4704	68	3	6	450
NR_SC42	112	Threemile Creek Tributary #12	Area > 1 and < 10 sq mi						13		4	130
Alternative 3B - Port MacKenzie Option												
			Twin Island Lake Outlet	Area > 1 and <= 5 sq mi	5	20	55	78	90				

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
		Little Susitna River	Area > 10 sq mi	290	3259	6453	8156	9032				
		Fish Creek	Area > 10 sq mi	56	200	458	607	685				
		Unnamed Fish Creek Tributary	Area > 1 and <= 5 sq mi	3	14	41	58	67				
		Unnamed Fish Creek Tributary	Area > 0.5 and <= 1 sq mi	1	5	15	22	26				
		Unnamed Flat Horn Lake Tributary	Area > 10 sq mi	15	57	147	200	229				
		Unnamed Flat Horn Lake Tributary	Area > 10 sq mi	12	48	125	172	197				
		Susitna River	Area > 10 sq mi	19,360	166,017	250,795	292,330	313,191				
		Unnamed Susitna River Tributary	Area > 0.5 and <= 1 sq mi	1	4	14	21	25				
		Unnamed Susitna River Tributary	Area > 10 sq mi	7	68	188	262	302				
		Alexander Creek	Area > 10 sq mi	275	1,769	3444	4340	4801				
		Wolverine Creek	Area > 10 sq mi	34	415	1024	1380	1569				
		Unnamed Lower Sucker Creek Tributary	Area <= 0.5 sq mi	0.1								
		Upper Sucker Creek	Area > 5 and <= 10 sq mi	9	178	497	693	799				
Alternative 6A – Dalzell Gorge Route												
sHA2	110	Happy River (upper)	Area > 10 sq mi	97.5	2,360	5,084	6,577	7,349	240	4		

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
sHAT7	110	Unnamed Happy River tributary	Braid/branch	97.5	2,360	5,084	6,577	7,349	13	4		
sHAT8	110	Unnamed Happy River tributary	Braid/branch	97.5	2,360	5,084	6,577	7,349	13	4		
sHAT9	110	Unnamed Happy River tributary	Braid/branch	97.5	2,360	5,084	6,577	7,349	13	4		
sPA1	115	Pass Creek	Area > 5 and <= 10 sq mi	8.4	231	595	812	928	26	3		
sPA2	116	Pass Creek	Area > 5 and <= 10 sq mi	5.0	184	469	639	729	25	2		
sPA4	116	Pass Creek	Area > 1 and <= 5 sq mi	4.4	165	425	582	665	50	6		
sPA3	117	Pass Creek	Area > 1 and <= 5 sq mi	3.2	121	322	445	510	30	3		
kPF2	119	Pass Fork	Area > 0.5 and <= 1 sq mi	0.6	30	93	134	156	14	2		
kPFT2	120	Pass Fork tributary	Area > 1 and <= 5 sq mi	1.1	36	120	177	208	10	2		
kPFT3	120	Pass Fork tributary	Area > 1 and <= 5 sq mi	1.0	45	139	200	234	20	1		
kPF3	122	Pass Fork	Area > 10 sq mi	11.4	217	589	813	932	25	2		
kPF4	122	Pass Fork	Area > 10 sq mi	11.7	220	596	823	944	25	2		
kPF5	123	Pass Fork	Area > 10 sq mi	11.9	220	599	827	949	20	2		
kPF6	123	Pass Fork	Area > 10 sq mi	12.3	222	605	837	961	20	2		

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kDA7	123	Dalzell Creek	Area > 10 sq mi	27.4	438	1,134	1,545	1,762	73	3		
kDAT2	124	Dalzell Creek	Braid/branch	45.8	647	1,630	2,203	2,505	12	2		
SP13	124	Dalzell Creek	Small, undefined area									
SP14	124	Dalzell Creek	Small, undefined area									
kDAT3	124	Dalzell Creek	Braid/branch	45.8	647	1,630	2,203	2,505	12	2		
kDAT1	125	Dalzell Creek	Area > 1 and <= 5 sq mi	3.4	109	304	425	490	16	2		
kDAT4	126	Dalzell Creek	Area > 0.5 and <= 1 sq mi	0.8	17	62	94	112				
kDA99	128	Dalzell Creek		45.8	647	1,630	2,203	2,505	12	2		
kTA1	128	Tatina River	Area > 10 sq mi	209.8	2,401	5,164	6,650	7,407	1,100	4		
kTAT3	129	Unnamed Tatina River tributary	Braid/branch	209.8	2,401	5,164	6,650	7,407				
kLY1	129	Lynx Creek	Area > 5 and <= 10 sq mi	7.8	142	413	582	673	18	2		
kTAT4	130	Unnamed Tatina River tributary	Area <= 0.5 sq mi	0.6	10	43	68	82				
kTAT5	131	Unnamed Tatina River tributary	Area <= 0.5 sq mi	0.4	9	37	57	69				
kSFT9	132	Unnamed South Fork Kuskokwim River tributary	Braid/branch	1232.4	9,041	17,277	21,422	23,484	12	1		
kSF1	133	South Fork Kuskokwim	Area > 10 sq mi	1232.4	9,041	17,277	21,422	23,484	1,500	4		

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg	Burial Length (feet)
kSFT20	133	Unnamed South Fork Kuskokwim River tributary	Area > 0.5 and <= 1 sq mi	1.0	19	73	111	133				
kSFT21	134	Unnamed South Fork Kuskokwim River tributary	Area <= 0.5 sq mi	0.3	5	24	38	47				
kSFT1	135	Unnamed South Fork Kuskokwim River tributary	Area > 5 and <= 10 sq mi	5.1	87	271	390	454	10	2		
kSFT22	136	Unnamed South Fork Kuskokwim River tributary	Area > 0.5 and <= 1 sq mi	0.7	17	64	98	118				
kSFT2	137	Unnamed South Fork Kuskokwim River tributary	Area <= 0.5 sq mi	0.1	3	14	23	28				
kPO2	139	Post River	Braid/branch	396.3	3,042	6,656	8,585	9,566				
kPO3	139	Post River	Braid/branch	396.3	3,042	6,656	8,585	9,566				
kPO1	139	Post River	Area > 10 sq mi	396.3	3,042	6,656	8,585	9,566	736	6		
kPO4	139	Post River	Braid/branch	396.3	3,042	6,656	8,585	9,566				
kSFT3	141	Unnamed South Fork Kuskokwim River tributary	Area > 1 and <= 5 sq mi	1.1	18	72	111	133	4	2		
kSFT4	142	Unnamed South Fork Kuskokwim River tributary	Area > 1 and <= 5 sq mi	1.8	43	146	216	254	84	3		
kSFT5	143	Unnamed South Fork	Area > 1 and <= 5 sq	1.4	31	108	160	190	6	1		

Table G-3: Proposed Pipeline Stream Crossings

Stream Feature Crossing ID	Nearest Milepost	Stream Feature Name	Category	Drainage Area (square miles)	2-year Flood-Peak Discharge Estimate (cfs)	25-year Flood-Peak Discharge Estimate (cfs)	100-year Flood-Peak Discharge Estimate (cfs)	200-year Flood-Peak Discharge Estimate (cfs)	Bankfull Width (feet)	Bankfull Depth (feet)	Pipe Cover Below Thalweg ('	Burial Length (feet)
		Kuskokwim River tributary	mi									
kHT1	144	High Lakes tributary	Area > 0.5 and <= 1 sq mi	0.5	7	29	45	54				
kTI1	146	Tin Creek	Area > 10 sq mi	15.6	187	549	774	894	38	2		
kTIT2	146	Tin Creek tributary	Area > 0.5 and <= 1 sq mi	0.7	14	54	82	98				
kTIT3	148	Tin Creek tributary	Area > 0.5 and <= 1 sq mi	0.9	18	68	105	125				
kTIT1	148	Tin Creek tributary	Area > 1 and <= 5 sq mi	1.3	37	123	182	214	2	2		
kSFT25	149	Unnamed South Fork Kuskokwim River tributary	Area > 0.5 and <= 1 sq mi	0.9	14	56	87	104				

Alternative 2 Source: CH2MHill 2011b, SRK 2013b, GAS_LINE_STREAM_CROSSINGS_13072.xls.

North Route Option Source: MB 2017d
Alternative 6A Source: SRK 2012i

Table G-4:
Potential Pipeline Water Extraction Sites

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0010	MP 0	Ice Road, Testing		X	River	na	Theodore River bridge	U	U	-	-	U	good water flow	-	1	500	1.1	3,430,000	10.5
WES-0020	MP 5	Ice Road, Testing		X	River	cTH1	Theodore River	U	U	-	-	U	good water flow	-	1	500	1.1	3,860,000	11.9
WES-0030	MP 10	Ice Road		X	Pond	-	unnamed	-	U	-	-	U	small pothole pond	U	1	500	1.1	500,000	1.5
WES-0031	MP 9	Ice Road		X	Pond	-	unnamed	-	U	-	-	U	small pothole pond	7.5	1	500	1.1	500,000	1.5
WES-0040	MP 12	Ice Road		X	Tributary	cLET1	Lewis River trib 1	N	Y	-	-	N	low volume, likely not viable	-	1	100	0.2	50,000	0.15
WES-0050	MP 14	Ice Road		X	Tributary	cLET2	Lewis River trib 2	N	Y	-	-	Y		-	1	100	0.2	50,000	0.15
WES-0060	MP 17	Ice Road		X	Creek	cWO1	Wolverine Creek	N	Y	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0070	MP 19	Ice Road		X	Tributary	cWOT1	Wolverine Creek trib 1	N	Y	-	-	Y	good flow	-	1	500	1.1	1,200,000	3.7
WES-0080	MP 21	Ice Road		X	Tributary	na	Wolverine Creek trib	U	U	-	-	U		-	1	500	1.1	1,200,000	3.7
WES-0085	MP 23	Ice Road		X	Creek	na	Wolverine Creek trib	N	U	-	-	U		-	1	100	0.2	500,000	1.5
WES-0090	MP 26	Ice Road		X	Creek	cUS1	Upper Sucker Creek	N	Y	-	-	N	very good flow	-	1	250	0.6	1,200,000	3.7
WES-0095	MP 27	Ice Road, Testing		X	Creek	cUST2	Upper Sucker Creek trib	N	U	-	-	U		-	1	250	0.6	1,600,000	5.0
WES-0096	MP 29	Ice Road		X	Creek	cSUT1	Sucker Lake inlet	U	Y	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0100	MP 30	Ice Road		X	Tributary	cLST2	Lower Sucker Creek trib	N	Y	-	-	Y		-	1	100	0.2	1,200,000	3.7
WES-0110	MP 33	Ice Road		X	Creek	cBE1	Bear Creek	Y	Y	-	-	Y		-	1	500	1.1	1,800,000	5.5
WES-0115	MP 35	Ice Road		X	Creek	na	Texas Creek	N	Y	-	-	U		-	1	500	1.1	1,200,000	3.7
WES-0120	MP 37	Ice Road		X	Creek	cTE1	Texas Creek	N	Y	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0130	MP 39	Ice Road		X	Tributary	cCL2	Clear Creek	N	Y	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0140	MP 39	Ice Road		X	Creek	na	Clear Creek	N	Y	-	-	U		-	1	500	1.1	1,200,000	3.7
WES-0145	MP 41	Ice Road		X	Creek	cCL1	Clear Creek	N	Y	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0146	MP 42	Ice Road, Camp, Testing		X	Creek	cDET1	Deep Creek trib 1	N	Y	-	-	U		-	1	500	1.1	1,930,000	5.9
WES-0150	MP 43	Ice Road		X	Creek	cDE2	Deep Creek	N	U	-	-	Y		-	1	500	1.1	1,200,000	3.7
WES-0160	MP 45	Ice Road		X	Creek	sEI1	Eight Mile Creek	Y	U	-	-	Y		-	1	250	0.6	1,200,000	3.7
WES-0165	MP 47	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		19.4	1	500	1.1	600,000	1.8
WES-0170	MP 48	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		203	1	500	1.1	1,200,000	3.7
WES-0180	MP 50	Ice Road, Testing, HDD		X	River	sSK1	Skwentna River	Y	Y	-	-	Y		-	2	600	1.3	5,265,000	16.2
WES-0190	MP 53	Camp Water		X	Creek	sSL1	Shell Creek at camp	Y	Y	-	-	U		-	2	500	1.1	900,000	2.8

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0200	MP 53	Ice Road		X	Creek	sSL1	Shell Creek	Y	Y	-	-	Y		-	2	500	1.1	1,200,000	3.7
WES-0210	MP 56	Ice Road		X	River	sSK1	Skwentna River at MS-11	Y	Y	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0220	MP 56	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		400	2	500	1.1	1,200,000	3.7
WES-0230	MP 59	Ice Road		X	Stream	sSKT8	Skwentna trib 8	Y	Y	-	-	Y	little water	-	2	500	1.1	1,200,000	3.7
WES-0235	MP 62	Ice Road		X	Stream	sSKT36	Skwentna trib 36	Y	Y	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0240	MP 63	Ice Road		X	Stream	sSKT30	Skwentna trib 30	Y	Y	-	-	N	low water flow	-	2	500	1.1	1,200,000	3.7
WES-0245	MP 64	Ice Road		X	Stream	sSKT40	Skwentna trib 40	Y	Y	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0255	MP 66	Ice Road		X	Stream	sSKT13	Skwentna trib 13	U	U	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0260	MP 68	Ice Road		X	Stream	sSKT44	Skwentna trib 44	Y	Y	-	-	N		-	2	100	0.2	100,000	0.31
WES-0265	MP 72	Ice Road		X	Stream	sSKT28	Skwentna trib 28	U	U	-	-	U		-	2	250	0.6	1,200,000	3.7
WES-0270	MP 73	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		168	2	500	1.1	1,200,000	3.7
WES-0275	MP 75	Ice Road		X	Stream	sSKT45	Skwentna trib 45	N	Y	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0276	MP 75	Ice Road		X	Stream	sSKT21	Skwentna trib 21	N	U	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0280	MP 79	Ice Road		X	Creek	yRET1	Red Creek trib 1	N	U	-	-	N		-	2	500	1.1	1,200,000	3.7
WES-0290	MP 81	Ice Road		X	Creek	sSKT24	Skwentna trib 24	N	N	-	-	U	small creek, good flow	-	2	500	1.1	1,200,000	3.7
WES-0300	MP 84	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		18	2	500	1.1	1,200,000	3.7
WES-0310	MP 86	Ice Road, Camp, Testing, HDD		X	River	sHA1	Upper Skwentna at Happy River mouth	Y	Y	-	-	Y		-	2	600	1.3	5,475,000	16.8
WES-0320	MP 88	Ice Road		X	Lake	-	Shirley Lake	-	U	-	-	U		10,500	2	500	1.1	2,000,000	6.1
WES-0330	MP 90	Ice Road		X	Lake	-	Helicopter Lake	-	U	-	-	U		U	2	500	1.1	3,000,000	9.2
WES-0340	MP 95	Ice Road		X	Creek	sCA1	Canyon Creek	Y	Y	-	-	Y		-	2	500	1.1	2,400,000	7.4
WES-0350	MP 99	Ice Road		X	Creek	na	Canyon Creek	U	U	-	-	U		-	2	250	0.6	1,200,000	3.7
WES-0360	MP 101	Ice Road		X	Creek	sSQ2	Squaw Creek	Y	Y	-	-	Y		-	2	500	1.1	1,200,000	3.7
WES-0370	MP 103	Ice Road		X	Creek	sIN1	Indian Creek	Y	Y	-	-	Y	good flow	-	2	500	1.1	3,000,000	9.2
WES-0380	MP 106	Ice Road		X	Creek	sIN1	Indian Creek	Y	Y	-	-	U	may not be usable	-	2	500	1.1	1,200,000	3.7
WES-0410	MP 108	Ice Road, HDD		X	River	sHA3	Happy River	Y	Y	-	-	U		-	2	600	1.3	1,425,000	4.4
WES-0418	MP 112	Camp, Testing	X	X	Stream	na	Threemile Creek	U	U	U	-	U		-	2	500	1.1	2,210,000	6.8
WES-0419	MP 112	Summer Construction	X	X	Creek	na	Threemile trib	U	U	U	-	U		-	1	500	1.1	100,000	0.31

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0420	MP 114	Summer Construction	X	X	Tributary	sTMT13	Threemile trib 13	U	U	210	-	U		-	1	500	1.1	100,000	0.31
WES-0425	MP 116	Summer Construction	X	X	Tributary	sTMTx	Threemile trib	U	U	0	-	U		-	1	500	1.1	100,000	0.31
WES-0430	MP 120	Summer Construction	X	X	Tributary	kTAT29	So Long trib	U	U	70	-	U		-	1	500	1.1	100,000	0.31
WES-0435	MP 120	Summer Construction	X	X	Tributary	kTAT26	So Long trib	U	U	50	-	U		-	1	500	1.1	100,000	0.31
WES-0438	MP 121	Summer Construction	X	X	Tributary	kTAT21	So Long trib	U	U	40	-	U		-	1	500	1.1	100,000	0.31
WES-0440	MP 123	Summer Construction	X	X	Creek	kTAT16	So Long Creek	U	U	430	-	U		-	1	500	1.1	100,000	0.31
WES-0445	MP 125	Summer Construction	X	X	Tributary	kTAT12	So Long trib	U	U	180	-	U		-	1	500	1.1	100,000	0.31
WES-0447	MP 126	Summer Construction	X	X	Tributary	kTAT11	So Long trib	U	U	40	-	U		-	1	500	1.1	100,000	0.31
WES-0450	MP 127	Summer Construction	X	X	River	kTA2	Tatina River	U	U	1,600	-	U		-	1	500	1.1	3,000,000	9.2
WES-0460	MP 130	Summer Construction	X	X	Pond	-	Pond at Tatina/ Jones	-	U	-	U	U		U	1	500	1.1	150,000	0.46
WES-0462	MP 131	Summer Construction	X	X	River	na	Jones River (upper)	U	U	U	-	U		-	1	500	1.1	150,000	0.46
WES-0464	MP 132	Summer Construction	X	X	Tributary	kJNT29	Jones trib 29	U	U	110	-	U		-	1	500	1.1	600,000	1.8
WES-0466	MP 133	Summer Construction, Camp	X	X	Tributary	kJNT26	Bear Paw Creek	U	U	300	-	U		-	1	500	1.1	150,000	0.46
WES-0468	MP 134	Summer Construction	X	X	Spring	-	Jones trib	U	U	U	-	U		-	1	500	1.1	150,000	0.46
WES-0470	MP 137	Summer Construction	X	X	River	kJN3	Jones River (lower 1)	U	U	1,050	-	U		-	1	500	1.1	150,000	0.46
WES-0475	MP 137	Summer Construction	X	X	River	kJN2	Jones River (lower 2)	U	U	1,140	-	U		-	1	500	1.1	150,000	0.46
WES-0480	MP 140	Summer Construction	X	X	Tributary	kJNT10	Jones trib 10	U	U	50	-	U		-	1	500	1.1	150,000	0.46
WES-0490	MP 145	Camp, Testing	X	X	Tributary	na	South Fork Kuskokwim at Jones Airstrip	U	U	U	-	U		-	2	500	1.1	1,355,000	4.2
WES-0500	MP 146	Ice Road, Testing		X	River	kSF3	South Fork Kuskokwim River	U	U	-	-	U		-	2	500	1.1	4,075,000	12.5
WES-0505	MP 148	Ice Road		X	Tributary	na	South Fork Kuskokwim trib	U	U	-	-	U		-	2	500	1.1	1,800,000	5.5
WES-0510	MP 150	Ice Road		X	Creek	kTI2	Tin Creek	U	U	-	-	U	lots of water	-	2	500	1.1	1,200,000	3.7
WES-0520	MP 156	Ice Road		X	Creek	kSH2	Sheep Creek	N	Y	-	-	Y	some glaciation	-	2	500	1.1	2,400,000	7.4
WES-0530	MP 161	Ice Road		X	Creek	kSHT2	Sheep Creek trib 2	N	N	-	-	N	little to no water	-	2	500	1.1	1,800,000	5.5
WES-0540	MP 164	Ice Road		X	Creek	kSHT5	Sheep Creek trib 5	N	N	-	-	N	no water	-	2	500	1.1	1,800,000	5.5
WES-0545	MP 167	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		12	2	500	1.1	1,800,000	5.5
WES-0550	MP 168	Ice Road, Testing		X	River	kWI1	Windy Fork Kuskokwim River	Y	Y	-	-	Y		-	2	500	1.1	4,290,000	13.2

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0560	MP 171	Ice Road		X	Creek	kKH1	Khuchaynik Creek	N	N	-	-	N	dry, no water	-	2	100	0.2	100,000	0.31
WES-0570	MP 174	Ice Road		X	Creek	kMFT2	Middle Fork trib 2	N	Y	-	-	Y	appears dry	-	2	100	0.2	100,000	0.31
WES-0575	MP 174	Ice Road		X	Creek	kMFT15	Middle Fork trib 15	N	N	-	-	U		-	2	500	1.1	2,400,000	7.4
WES-0580	MP 177	Ice Road		X	Creek	kMFT3	Middle Fork trib 3	N	Y	-	-	N	dry	-	2	100	0.2	100,000	0.31
WES-0590	MP 179	Ice Road		X	Creek	kMFT5	Middle Fork trib 5	N	Y	-	-	N	dry	-	2	100	0.2	100,000	0.31
WES-0595	MP 180	Ice Road		X	Creek	kMFT6	Middle Fork trib 6	N	Y	-	-	U		-	2	500	1.1	2,400,000	3.7
WES-0600	MP 183	Ice Road, Testing		X	River	kMF1	Middle Fork Kuskokwim River	N	Y	-	-	N	glaciation present, water likely in cut	-	2	500	1.1	4,290,000	13.2
WES-0610	MP 185	Ice Road		X	Creek	kMFT8	Middle Fork trib 8	U	U	-	-	N	some water present	-	2	500	1.1	4,290,000	13.2
WES-0615	MP 186	Ice Road		X	Pond	-	unnamed	-	N	-	-	U		85.5	2	500	1.1	1,200,000	3.7
WES-0620	MP 188	Ice Road		X	Pond	-	unnamed	-	N	-	-	U		235	2	500	1.1	1,200,000	3.7
WES-0625	MP 189	Ice Road		X	Pond	-	unnamed	-	N	-	-	U		48.2	2	500	1.1	1,200,000	3.7
WES-0630	MP 191	Ice Road, Testing		X	River	kBI1	Big River	Y	Y	-	-	Y		-	2	500	1.1	5,290,000	16.2
WES-0640	MP 193	Ice Road		X	Pond	-	unnamed	-	N	-	-	U		240	2	500	1.1	3,000,000	9.2
WES-0650	MP 197	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		107	2	500	1.1	3,000,000	9.2
WES-0660	MP 198	Ice Road		X	Pond	-	unnamed	-	U	-	-	U		153	2	500	1.1	3,000,000	9.2
WES-0670	MP 205	Ice Road		X	Creek	kTLT2	Tatlawiksuk trib 2	Y	Y	-	-	Y	some water present	-	2	250	0.6	250,000	0.77
WES-0680	MP 208	Ice Road		X	Creek	kTLT5	Tatlawiksuk trib 5	N	Y	-	-	N	low to no water present	-	2	100	0.2	250,000	0.77
WES-0690	MP 211	Ice Road		X	Creek	kTLT7	Tatlawiksuk trib 6	N	Y	-	-	N	some water present	-	2	250	0.6	250,000	0.77
WES-0710	MP 217	Ice Road, Testing		X	River	kTL1	Tatlawiksuk River	Y	Y	-	-	Y		-	2	500	1.1	4,675,000	14.4
WES-0715	MP 219	Ice Road		X	Creek	kTLT14	Tatlawiksuk trib 14	Y	Y	-	-	U		-	2	500	1.1	1,200,000	3.7
WES-0720	MP 221	Ice Road		X	Creek	kTLT16	Tatlawiksuk trib 16	Y	Y	-	-	N		-	2	500	1.1	1,200,000	3.7
WES-0730	MP 224	Ice Road		X	Creek	kTLT23	Tatlawiksuk trib 23	N	Y	-	-	N	good flow	-	2	500	1.1	1,800,000	5.5
WES-0740	MP 227	Ice Road		X	Creek	kTLT21	Tatlawiksuk trib 21	Y	Y	-	-	N	little to no water present	-	2	100	0.2	100,000	0.31
WES-0750	MP 227	Ice Road		X	Creek	kTLT23	Tatlawiksuk trib 23	Y	Y	-	-	U		-	2	500	1.1	1,800,000	5.5
WES-0760	MP 232	Ice Road		X	Creek	kTLT23	Tatlawiksuk trib 23	Y	Y	-	-	Y		-	2	500	1.1	3,750,000	11.5
WES-0770	MP 239	Ice Road	X	X	Creek	kKUT3	Kuskokwim trib 3	Y	Y	40	-	U	good flow	-	2	500	1.1	5,490,000	16.9

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0780	MP 245	Summer Construction	X	X	Tributary	na	Kuskokwim trib	Y	Y	U	-	U		-	2	500	1.1	50,000	0.15
WES-0790	MP 241	Summer Construction, HDD	X	X	Creek	na	Kuskokwim trib	Y	Y	U	-	U		-	1	600	1.3	975,000	3.0
WES-0800	MP 243	Summer Construction	X	X	Creek	kKUT8	Kuskokwim trib 8	Y	Y	235	-	N		-	1	500	1.1	50,000	0.15
WES-0810	MP 245	Summer Construction	X	X	Creek	na	Kuskokwim trib	Y	Y	U	-	U	minimal water	-	1	250	0.6	500,000	1.5
WES-0815	MP 249	Summer Construction, Testing	X	X	Creek	kNUT2	Nunsatuk River trib 2	N	Y	14	-	U	well-defined channel	-	1	500	1.1	200,000	0.61
WES-0816	MP 256	Summer Construction	X	X	Creek	kMO1	Moose Creek	N	Y	50	-	U		-	1	500	1.1	1,790,000	5.5
WES-0820	MP 270	Summer Construction, Testing, HDD	X	X	Creek	kEFT1	East Fork George trib 1	N	Y	49	-	N		-	1	500	1.1	500,000	1.5
WES-0830	MP 283	Summer Construction	X	X	River	kEF2	East Fork George River	Y	Y	2,285	-	N		-	1	600	1.3	2,745,000	8.4
WES-0835	MP 286	Summer Construction	X	X	Creek	kEFT7	East Fork George trib 7	N	Y	23	-	U		-	1	500	1.1	350,000	1.1
WES-0836	MP 288	Summer Construction, HDD	X	X	Creek	kGET2	George River trib 2	N	N	13	-	U		-	1	500	1.1	100,000	0.31
WES-0840	MP 291	Summer Construction, Testing	X	X	River	kGE2	George River	Y	Y	2,827	-	Y		-	1	600	1.3	850,000	2.6
WES-0850	MP 298	HDD	X	X	River	kNF1	North Fork George River	Y	Y	778	-	Y		-	1	600	1.3	2,925,000	9.0
WEX-Texas	Bear Creek Route	Ice Road		X	Creek	na	Texas Creek	U	U		-	U		-	2	500	1.1	1,500,000	4.6
WEX-Bear	Bear Creek Route	Ice Road		X	Creek	na	Bear Creek	U	U		-	U		-	2	500	1.1	2,400,000	7.4
WEX-Susitna	Big Bend Trail	Ice Road		X	River	na	Susitna River	U	U		-	U		-	2	500	1.1	3,600,000	11.1
WEX-Deshka	Big Bend Trail	Ice Road		X	River	na	Deshka River/ Kroto Creek	U	U		-	U		-	2	500	1.1	3,600,000	11.1
WEX-Fish	Big Bend Trail	Ice Road		X	Creek	na	Fish Creek	U	U		-	U		-	2	500	1.1	4,200,000	12.9
WEX-Yentna-S	Big Bend Trail	Ice Road		X	River	na	Yentna River	U	U		-	U		-	2	500	1.1	4,200,000	12.9
WEX-Eightmile	Oil Well Road Route	Ice Road		X	Creek	na	Eightmile Creek	U	U		-	U		-	2	500	1.1	4,800,000	14.7
WEX-Kutna	Big Bend	Ice Road		X	Creek	na	Kutna Creek	U	U		-	U		-	2	500	1.1	2,400,000	7.4

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
	Trail																		
WEX-Clear	Bear Creek Route	Ice Road		X	Creek	na	Clear Creek	U	U		-	U		-	2	500	1.1	2,400,000	
WEX-Deep-W	Bear Creek Route	Ice Road		X	Creek	na	Deep Creek	U	U		-	U		-	2	500	1.1	3,000,000	9.2
WEX-Sevenmile-N	Deep Creek Route	Ice Road		X	Creek	na	Sevenmile Creek	U	U		-	U		-	2	500	1.1	1,800,000	5.5
WEX-Twentymile	Oil Well Road Route	Ice Road		X	Slough	na	Twentymile Slough	U	U		-	U		U	2	500	1.1	4,800,000	14.7
WEX-Yentna-N	Oil Well Road Route	Ice Road		X	River	na	Yentna River	U	U		-	U		-	2	500	1.1	4,800,000	14.7
WEX-Kahiltna	Oil Well Road Route	Ice Road		X	River	na	Kahiltna River	U	U		-	U		-	2	500	1.1	7,800,000	23.9
WEX-Chijuk-E	Oil Well Road Route	Ice Road		X	Tributary	na	Chijuk Creek East trib	U	U		-	U		-	2	500	1.1	2,400,000	7.4
WEX-Chijuk-W	Oil Well Road Route	Ice Road		X	Tributary	Na	Chijuk Creek West trib	U	U		-	U		-	2	500	1.1	5,400,000	16.6
WEX-Deep-E	Alexander Route	Ice Road		X	Creek	Na	Deep Creek	U	U		-	U		-	2	500	1.1	2,100,000	6.4
WEX-Fox	Alexander Route	Ice Road		X	Creek	Na	Fox Creek	U	U		-	U		-	2	500	1.1	2,100,000	6.4
WEX-Sevenmile-S	Deep Creek Route	Ice Road		X	Tributary	Na	Sevenmile trib	U	U		-	U		-	2	500	1.1	2,700,000	8.3
Alternative 2 – North Option																			
WES-310	86	Summer Construction, HDD	X		Creek	NR_SC1	Happy River Tributary #1	N	Y	180	-	-	-	-	tbd	tbd	tbd	450,000 – 500,000[5]	1.4 – 1.5[5]
WES-0320	87	Summer Construction, HDD	X		Creek	NR_SC2	Happy River Tributary #2	N	N	U	-	-	-	-	tbd	tbd	tbd		
WES-0330	87	Summer Construction	X		Creek	NR_SC3	Happy River Tributary #3a	N	N	<0.15	-	-	-	-	tbd	tbd	tbd		

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet
WES-0340	89	Summer Construction	X		Creek	NR_SC6	Happy River Tributary #4	N	N	6	-	-	-	-	tbd	tbd	tbd		
WES-0350	91	Summer Construction	X		Creek	NR_SC9	Happy River Tributary #6	N	N	1.5	-	-	-	-	tbd	tbd	tbd		
WES-0360	92	Summer Construction, HDD	X		Creek	NR_SC10	Happy River Tributary #7	N	N	>420	-	-	-	-	tbd	tbd	tbd	450,000 – 500,000[5]	1.4 – 1.5[5]
WES-0370	93	Summer Construction	X		Creek	NR_SC11	Happy River Tributary #8	N	N	U	-	-	-	-	tbd	tbd	tbd		
WES-0380	98	Summer Construction, Camp, Airstrip	X	X	Creek	NR_SC20	Glacier Creek	N	Y	> 380	-	-	-	-	tbd	tbd	tbd		
WES-0390	101	Summer Construction	X		Pond	na	unnamed	-	U	-	U	-	-	-	tbd	tbd	tbd		
WES-0400	104	Summer Construction	X		Creek	NR_SC26	Moose Creek	Y	Y	170 - 350	-	-	-	-	tbd	tbd	tbd		
WES-0410	109	Summer Construction	X		Creek	NR_SC39	Threemile Creek Tributary #10	N	N	0.3	-	-	-	-	tbd	tbd	tbd		
Alternative 6A – Dalzell Gorge Route																			
WES-039	106	Ice Road		X	Pond	na	unnamed	U	U	-	U	U		U	1	500	1.1	1,200,000	3.7
WES-040	108.5	Ice Road		X	Pond	na	unnamed	U	U	-	U	U		U	1	500	1.1	1,200,000	3.7
WES-041	109.6	HDD		X	Creek	sHA2	Happy River (upper)	Y	Y	2,360	-	Y		-	1	500	1.1	1,425,000	4.4
WES-042	114.6	Summer Construction	X		Creek	sPA1	Pass Creek	U	U	231	-	Y		-	1	500	1.1	2,210,000	6.8
WES-043	118.6	Summer Construction	X		Creek	kPF2	Pass Fork Creek	U	U	30	-	Y		-	1	500	1.1	100,000	0.31
WES-044	123.3	Summer Construction	X		Creek	kDA7	Dalzell Creek	U	U	438	-	Y		-	1	500	1.1	100,000	0.31
WES-045	126	Summer Construction	X		Creek	kDA6	Dalzell Creek	U	U	543	-	U		-	1	500	1.1	100,000	0.31
WES-046	128.2	Summer Construction	X		River	kTA1	Tatina River	U	U	2,401	-	Y		-	1	500	1.1	100,000	0.31
WES-047	129.4	Summer Construction	X		Creek	kLY1	Lynx Creek	U	U	142	-	U		-	1	500	1.1	100,000	0.31
WES-048	132.1	Summer Construction	X		River	kSF1	South Fork Kuskokwim	U	U	9,041	-	Y		-	1	500	1.1	100,000	0.31
WES-049	139.2	Ice Road		X	River	kPO1	Post River	U	U	3,042	-	U		-	1	500	1.1	1,200,000	3.7
WES-050	142.4	Ice Road		X	Lake	Na	Charlie Lake	U	U	-	U	U		U	1	500	1.1	1,200,000	3.7
WES-051	145.8	Ice Road		X	Creek	kTI2	Tin Creek	U	U	187	-	Y	Lots of water	-	1	500	1.1	1,200,000	3.7
WES-052	153.7	Ice Road		X	Creek	kSH2	Sheep Creek	U	U	1,464	-	Y	Some glaciation downstream from crossing	-	1	500	1.1	1,200,000	3.7

Notes:
1. For Alternatives 2 (main route) and 6A, estimated 2-yr flood peak discharge based on regional regression equations (CH2MHill 2011a); summer average discharge data not available. For Alternative 2–North Option, estimated flow is from data collected June-July 2017 (MB (2017d).

Table G-4: Potential Pipeline Water Extraction Sites

Water Extraction Site Name	Nearest Milepost (MP)	Proposed Usage	Season of Use		Waterbody			Fish		Water Availability in Season of Use					Years of Use	Extraction			
										Summer		Winter				Rate		Annual Volume	
			Summer	Winter	Type	Stream ID	Name	Anadromous	Other	Streamflow[1] (cfs)	Pond Volume[2] (acre-feet)	Open Water in Winter?[3]	Notes from Late Winter Observations[3]	Pond Volume[4] (acre-feet)		gpm	cfs	gallons	acre-feet

2. Pond volumes from RECON (2014a).
3. Notes from late winter observations March 2012 (RECON 2014a; SRK 2012c); winter streamflow data not available.
4. Under-ice pond volume from Recon (2014) reduced by estimate of maximum ice volume: calculated based on surface area by RECON (2014a) and assumed 3-ft maximum ice thickness based on limited data from Susitna Valley and Interior Alaska (e.g. Aldrich 1981; UAF 2014).
5. Estimated total water requirement for HDD only (Donlin Gold 2017k).
"-" = not applicable
na = not available
tbd = to be determined in Plan of Development Rev.2 (Donlin Gold 2017k)
trib = tributary
N = no
U = unknown
Y = yes

Sources: RECON 2014a; SRK 2012i, Table 8-9; SRK 2013b, Table 8-9 and Appendix D; MB 2017b,c,d; Donlin Gold 2017k

Tables G-5 - G-14:
Flow Reduction Data Tables

Table G-5: Median Flow (50th Percentile) for Disturbed and Undisturbed Conditions – Year 10, Base-Case K

Watershed	Area (sq.mi)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	810	872	1,369	4,830	2,804	2,919	3,615	6,905	6,067	3,946	1,797	1,079	3,094
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	9,315	9,451	13,926	47,760	30,229	24,026	28,172	57,015	57,976	40,199	21,006	12,652	29,382
		disturbed	7,437	7,578	11,563	41,649	26,099	19,721	23,000	48,329	50,289	34,813	17,979	10,466	24,971
		change (%)	-20%	-20%	-17%	-13%	-14%	-18%	-18%	-15%	-13%	-13%	-14%	-17%	-15%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	12,003	12,178	17,944	61,541	38,951	30,958	36,301	73,467	74,705	51,799	27,068	16,303	37,860
		disturbed	10,125	10,305	15,582	57,669	37,016	27,982	32,506	66,618	69,454	48,963	26,345	14,117	34,808
		change (%)	-16%	-15%	-13%	-6%	-5%	-10%	-10%	-9%	-7%	-5%	-3%	-13%	-8%
Anaconda Creek	7.7	undisturbed	1,021	1,004	1,380	4,460	3,127	2,545	2,952	5,664	5,921	4,194	2,297	1,396	3,004
		disturbed	276	291	450	1,589	1,008	847	997	2,025	2,056	1,380	658	373	998
		change (%)	-73%	-71%	-67%	-64%	-68%	-67%	-66%	-64%	-65%	-67%	-71%	-73%	-67%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	12,976	13,165	19,399	66,531	42,110	33,469	39,244	79,423	80,762	55,999	29,262	17,625	40,930
		disturbed	10,353	10,580	16,107	59,789	38,056	28,794	33,494	68,935	71,646	50,348	26,901	14,416	35,872
		change (%)	-20%	-20%	-17%	-10%	-10%	-14%	-15%	-13%	-11%	-10%	-8%	-18%	-12%
Crooked Creek at Crevice Creek	119	undisturbed	14,272	14,482	21,646	73,701	45,537	36,550	43,133	87,254	88,655	61,794	32,119	19,364	44,984
		disturbed	11,648	11,897	18,353	66,958	41,483	31,876	37,383	76,766	79,539	56,144	29,757	16,155	39,926
		change (%)	-18%	-18%	-15%	-9%	-9%	-13%	-13%	-12%	-10%	-9%	-7%	-17%	-11%
Crooked Creek at Getmuna Creek	249.6	undisturbed	29,980	30,421	45,470	154,820	95,657	76,779	90,607	183,289	186,234	129,808	67,470	40,677	94,496
		disturbed	27,357	27,836	42,177	148,077	91,603	72,105	84,857	172,802	177,117	124,158	65,108	37,468	89,438
		change (%)	-9%	-8%	-7%	-4%	-4%	-6%	-6%	-6%	-5%	-4%	-4%	-8%	-5%
Crooked Creek at Bell Creek	324.8	undisturbed	39,016	39,589	59,174	201,481	124,487	99,920	117,915	238,531	242,363	168,931	87,805	52,937	122,976
		disturbed	36,392	37,004	55,881	194,739	120,433	95,245	112,165	228,043	233,247	163,281	85,443	49,728	117,918
		change (%)	-7%	-7%	-6%	-3%	-3%	-5%	-5%	-4%	-4%	-3%	-3%	-6%	-4%

Notes:
Table is taken from BGC (2015h), Table 3-1.

Table G-6: 10th Percentile Flows (Low Flow) for Disturbed and Undisturbed Conditions – Year 10, Base-Case K

Watershed	Area (sq.mi)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	592	508	389	2,503	1,280	1,392	1,841	3,652	3,432	2,208	1,261	827	1,661
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	6,416	5,608	4,414	25,541	13,191	10,726	13,030	27,466	30,450	22,184	13,569	9,019	15,159
		disturbed	4,785	4,148	3,184	22,019	10,736	8,090	9,766	22,202	25,584	18,634	11,113	7,100	12,299
		change (%)	-25%	-26%	-28%	-14%	-19%	-25%	-25%	-19%	-16%	-16%	-18%	-21%	-19%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	8,267	7,226	5,688	32,911	16,997	13,821	16,790	35,392	39,236	28,585	17,485	11,622	19,533
		disturbed	6,637	5,766	4,458	31,406	16,080	11,947	13,992	31,334	35,965	27,137	16,467	9,703	17,602
		change (%)	-20%	-20%	-22%	-5%	-5%	-14%	-17%	-11%	-8%	-5%	-6%	-17%	-10%
Anaconda Creek	7.7	undisturbed	718	624	491	2,459	1,421	1,228	1,450	2,857	3,215	2,409	1,512	1,004	1,618
		disturbed	189	164	129	820	411	378	456	958	1,037	707	399	264	494
		change (%)	-74%	-74%	-74%	-67%	-71%	-69%	-69%	-66%	-68%	-71%	-74%	-74%	-70%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	8,938	7,812	6,149	35,579	18,376	14,942	18,151	38,261	42,418	30,903	18,902	12,564	21,117
		disturbed	6,778	5,892	4,557	32,435	16,449	12,218	14,360	32,305	36,968	27,753	16,771	9,905	18,060
		change (%)	-24%	-25%	-26%	-9%	-10%	-18%	-21%	-16%	-13%	-10%	-11%	-21%	-14%
Crooked Creek at Crevice Creek	119	undisturbed	9,851	8,735	6,822	38,723	20,711	17,368	20,480	43,130	44,691	33,303	20,131	13,385	23,151
		disturbed	7,692	6,815	5,230	35,579	18,784	14,644	16,688	37,174	39,242	30,153	18,000	10,726	20,095
		change (%)	-22%	-22%	-23%	-8%	-9%	-16%	-19%	-14%	-12%	-9%	-11%	-20%	-13%
Crooked Creek at Getmuna Creek	249.6	undisturbed	20,694	18,348	14,331	81,343	43,507	36,485	43,020	90,600	93,881	69,958	42,288	28,117	48,632
		disturbed	18,535	16,429	12,738	78,199	41,580	33,761	39,229	84,644	88,431	66,807	40,157	25,458	45,576
		change (%)	-10%	-10%	-11%	-4%	-4%	-7%	-9%	-7%	-6%	-5%	-5%	-9%	-6%
Crooked Creek at Bell Creek	324.8	undisturbed	26,931	23,878	18,650	105,860	56,620	47,481	55,986	117,906	122,175	91,042	55,033	36,591	63,289
		disturbed	24,771	21,959	17,058	102,715	54,693	44,757	52,195	111,950	116,726	87,892	52,903	33,932	60,233
		change (%)	-8%	-8%	-9%	-3%	-3%	-6%	-7%	-5%	-4%	-3%	-4%	-7%	-5%

Notes:
Table is taken from BGC (2015h), Table 3-2.

Table G-7: Median Flow (50th Percentile) for Disturbed and Undisturbed Conditions - Year 20, Base-Case K

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	810	872	1,369	4,830	2,804	2,919	3,615	6,905	6,067	3,946	1,797	1,079	3,094
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	9,315	9,451	13,926	47,760	30,229	24,026	28,172	57,015	57,976	40,199	21,006	12,652	29,382
		disturbed	7,155	7,330	11,340	41,467	24,792	19,042	22,340	47,266	49,713	34,298	17,481	10,075	24,415
		change (%)	-23%	-22%	-19%	-13%	-18%	-21%	-21%	-17%	-14%	-15%	-17%	-20%	-17%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	12,003	12,178	17,944	61,541	38,951	30,958	36,301	73,467	74,705	51,799	27,068	16,303	37,860
		disturbed	9,862	10,084	15,406	57,040	35,174	27,643	32,217	65,662	68,683	48,099	25,538	13,718	34,175
		change (%)	-18%	-17%	-14%	-7%	-10%	-11%	-11%	-11%	-8%	-7%	-6%	-16%	-10%
Anaconda Creek	7.7	undisturbed	1,021	1,004	1,380	4,460	3,127	2,545	2,952	5,664	5,921	4,194	2,297	1,396	3,004
		disturbed	276	291	450	1,589	1,008	847	997	2,025	2,056	1,380	658	373	998
		change (%)	-73%	-71%	-67%	-64%	-68%	-67%	-66%	-64%	-65%	-67%	-71%	-73%	-67%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	12,976	13,165	19,399	66,531	42,110	33,469	39,244	79,423	80,762	55,999	29,262	17,625	40,930
		disturbed	10,090	10,359	15,931	59,159	36,214	28,456	33,205	67,980	70,875	49,485	26,093	14,016	35,239
		change (%)	-22%	-21%	-18%	-11%	-14%	-15%	-15%	-14%	-12%	-12%	-11%	-20%	-14%
Crooked Creek at Crevice Creek	119	undisturbed	14,272	14,482	21,646	73,701	45,537	36,550	43,133	87,254	88,655	61,794	32,119	19,364	44,984
		disturbed	11,385	11,676	18,177	66,329	39,641	31,537	37,093	75,810	78,768	55,280	28,949	15,755	39,293
		change (%)	-20%	-19%	-16%	-10%	-13%	-14%	-14%	-13%	-11%	-11%	-10%	-19%	-13%
Crooked Creek at Getmuna Creek	249.6	undisturbed	29,980	30,421	45,470	154,820	95,657	76,779	90,607	183,289	186,234	129,808	67,470	40,677	94,496
		disturbed	27,093	27,615	42,001	147,448	89,761	71,766	84,567	171,846	176,347	123,294	64,301	37,068	88,805
		change (%)	-10%	-9%	-8%	-5%	-6%	-7%	-7%	-6%	-5%	-5%	-5%	-9%	-6%
Crooked Creek at Bell Creek	324.8	undisturbed	39,016	39,589	59,174	201,481	124,487	99,920	117,915	238,531	242,363	168,931	87,805	52,937	122,976
		disturbed	36,129	36,783	55,705	194,109	118,591	94,907	111,876	227,088	232,476	162,417	84,636	49,328	117,285
		change (%)	-7%	-7%	-6%	-4%	-5%	-5%	-5%	-5%	-4%	-4%	-4%	-7%	-5%

Notes:
Table is taken from BGC (2015h), Table 3-3.

Table G-8: 10th Percentile Flow (Low Flow) for Disturbed and Undisturbed Conditions – Year 20, Base-Case K

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	592	508	389	2,503	1,280	1,392	1,841	3,652	3,432	2,208	1,261	827	1,661
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	6,416	5,608	4,414	25,541	13,191	10,726	13,030	27,466	30,450	22,184	13,569	9,019	15,159
		disturbed	4,553	3,836	2,965	21,453	10,532	8,014	9,707	23,020	23,808	17,489	10,269	6,513	11,868
		change (%)	-29%	-32%	-33%	-16%	-20%	-25%	-26%	-16%	-22%	-21%	-24%	-28%	-22%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	8,267	7,226	5,688	32,911	16,997	13,821	16,790	35,392	39,236	28,585	17,485	11,622	19,533
		disturbed	6,428	5,451	4,260	30,146	15,904	12,249	14,873	33,332	34,313	25,782	15,783	9,034	17,330
		change (%)	-22%	-25%	-25%	-8%	-6%	-11%	-11%	-6%	-13%	-10%	-10%	-22%	-11%
Anaconda Creek	7.7	undisturbed	718	624	491	2,459	1,421	1,228	1,450	2,857	3,215	2,409	1,512	1,004	1,618
		disturbed	189	164	129	820	411	378	456	958	1,037	707	399	264	494
		change (%)	-74%	-74%	-74%	-67%	-71%	-69%	-69%	-66%	-68%	-71%	-74%	-74%	-70%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	8,938	7,812	6,149	35,579	18,376	14,942	18,151	38,261	42,418	30,903	18,902	12,564	21,117
		disturbed	6,569	5,577	4,360	31,175	16,272	12,520	15,241	34,304	35,316	26,397	16,087	9,236	17,789
		change (%)	-26%	-29%	-29%	-12%	-11%	-16%	-16%	-10%	-17%	-15%	-15%	-26%	-16%
Crooked Creek at Crevice Creek	119	undisturbed	9,851	8,735	6,822	38,723	20,711	17,368	20,480	43,130	44,691	33,303	20,131	13,385	23,151
		disturbed	7,483	6,500	5,032	34,319	18,608	14,946	17,569	39,172	37,590	28,797	17,316	10,057	19,823
		change (%)	-24%	-26%	-26%	-11%	-10%	-14%	-14%	-9%	-16%	-14%	-14%	-25%	-14%
Crooked Creek at Getmuna Creek	249.6	undisturbed	20,694	18,348	14,331	81,343	43,507	36,485	43,020	90,600	93,881	69,958	42,288	28,117	48,632
		disturbed	18,325	16,114	12,541	76,939	41,404	34,063	40,110	86,642	86,779	65,452	39,473	24,789	45,304
		change (%)	-11%	-12%	-12%	-5%	-5%	-7%	-7%	-4%	-8%	-6%	-7%	-12%	-7%
Crooked Creek at Bell Creek	324.8	undisturbed	26,931	23,878	18,650	105,860	56,620	47,481	55,986	117,906	122,175	91,042	55,033	36,591	63,289
		disturbed	24,562	21,644	16,860	101,455	54,516	45,059	53,076	113,948	115,074	86,537	52,218	33,263	59,961
		change (%)	-9%	-9%	-10%	-4%	-4%	-5%	-5%	-3%	-6%	-5%	-5%	-9%	-5%

Notes:
Table is taken from BGC (2015h), Table 3-4.

Table G-9: Median Flow (50th Percentile) for Disturbed and Undisturbed Conditions – Year 10, High K

Watershed	Area (sq.mi)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	810	872	1,369	4,830	2,804	2,919	3,615	6,905	6,067	3,946	1,797	1,079	3,094
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	9,315	9,451	13,926	47,760	30,229	24,026	28,172	57,015	57,976	40,199	21,006	12,652	29,382
		disturbed	3,696	3,944	8,078	38,196	21,806	15,790	19,114	44,310	46,457	30,901	14,208	6,720	21,160
		change (%)	-60%	-58%	-42%	-20%	-28%	-34%	-32%	-22%	-20%	-23%	-32%	-47%	-28%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	12,003	12,178	17,944	61,541	38,951	30,958	36,301	73,467	74,705	51,799	27,068	16,303	37,860
		disturbed	6,378	6,675	12,033	57,480	35,883	28,039	32,552	66,164	68,772	48,024	25,667	10,377	33,259
		change (%)	-47%	-45%	-33%	-7%	-8%	-9%	-10%	-10%	-8%	-7%	-5%	-36%	-12%
Anaconda Creek	7.7	undisturbed	1,021	1,004	1,380	4,460	3,127	2,545	2,952	5,664	5,921	4,194	2,297	1,396	3,004
		disturbed	276	291	450	1,589	1,008	847	997	2,025	2,056	1,380	658	373	998
		change (%)	-73%	-71%	-67%	-64%	-68%	-67%	-66%	-64%	-65%	-67%	-71%	-73%	-67%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	12,976	13,165	19,399	66,531	42,110	33,469	39,244	79,423	80,762	55,999	29,262	17,625	40,930
		disturbed	6,606	6,950	12,558	59,600	36,923	28,851	33,540	68,482	70,964	49,409	26,222	10,676	34,323
		change (%)	-49%	-47%	-35%	-10%	-12%	-14%	-15%	-14%	-12%	-12%	-10%	-39%	-16%
Crooked Creek at Crevice Creek	119	undisturbed	14,272	14,482	21,646	73,701	45,537	36,550	43,133	87,254	88,655	61,794	32,119	19,364	44,984
		disturbed	7,901	8,266	14,805	66,769	40,350	31,933	37,429	76,313	78,857	55,205	29,079	12,415	38,377
		change (%)	-45%	-43%	-32%	-9%	-11%	-13%	-13%	-13%	-11%	-11%	-9%	-36%	-15%
Crooked Creek at Getmuna Creek	249.6	undisturbed	29,980	30,421	45,470	154,820	95,657	76,779	90,607	183,289	186,234	129,808	67,470	40,677	94,496
		disturbed	23,610	24,206	38,629	147,888	90,470	72,162	84,903	172,348	176,435	123,219	64,430	33,728	87,889
		change (%)	-21%	-20%	-15%	-4%	-5%	-6%	-6%	-6%	-5%	-5%	-5%	-17%	-7%
Crooked Creek at Bell Creek	324.8	undisturbed	39,016	39,589	59,174	201,481	124,487	99,920	117,915	238,531	242,363	168,931	87,805	52,937	122,976
		disturbed	32,646	33,374	52,333	194,550	119,300	95,302	112,211	227,590	232,564	162,342	84,765	45,988	116,369
		change (%)	-16%	-16%	-12%	-3%	-4%	-5%	-5%	-5%	-4%	-4%	-3%	-13%	-5%

Notes:
Table is taken from BGC (2015h), Table 3-5.

Table G-10: 10th Percentile Flow (Low Flow) for Disturbed and Undisturbed Conditions – Year 10, High K

Watershed	Area (sq.mi)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	592	508	389	2,503	1,280	1,392	1,841	3,652	3,432	2,208	1,261	827	1,661
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	6,416	5,608	4,414	25,541	13,191	10,726	13,030	27,466	30,450	22,184	13,569	9,019	15,159
		disturbed	1,091	429	0	17,991	7,572	4,531	5,670	19,968	20,901	13,768	6,971	3,116	8,522
		change (%)	-83%	-92%	-100%	-30%	-43%	-58%	-56%	-27%	-31%	-38%	-49%	-65%	-44%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	8,267	7,226	5,688	32,911	16,997	13,821	16,790	35,392	39,236	28,585	17,485	11,622	19,533
		disturbed	2,965	2,044	849	30,509	16,737	12,661	14,307	33,591	34,961	25,421	15,719	5,651	16,323
		change (%)	-64%	-72%	-85%	-7%	-2%	-8%	-15%	-5%	-11%	-11%	-10%	-51%	-16%
Anaconda Creek	7.7	undisturbed	718	624	491	2,459	1,421	1,228	1,450	2,857	3,215	2,409	1,512	1,004	1,618
		disturbed	189	164	129	820	411	378	456	958	1,037	707	399	264	494
		change (%)	-74%	-74%	-74%	-67%	-71%	-69%	-69%	-66%	-68%	-71%	-74%	-74%	-70%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	8,938	7,812	6,149	35,579	18,376	14,942	18,151	38,261	42,418	30,903	18,902	12,564	21,117
		disturbed	3,106	2,170	948	31,538	17,105	12,932	14,675	34,562	35,964	26,036	16,024	5,853	16,782
		change (%)	-65%	-72%	-85%	-11%	-7%	-13%	-19%	-10%	-15%	-16%	-15%	-53%	-21%
Crooked Creek at Crevice Creek	119	undisturbed	9,851	8,735	6,822	38,723	20,711	17,368	20,480	43,130	44,691	33,303	20,131	13,385	23,151
		disturbed	4,020	3,093	1,621	34,682	19,441	15,358	17,003	39,431	38,237	28,436	17,252	6,674	18,816
		change (%)	-59%	-65%	-76%	-10%	-6%	-12%	-17%	-9%	-14%	-15%	-14%	-50%	-19%
Crooked Creek at Getmuna Creek	249.6	undisturbed	20,694	18,348	14,331	81,343	43,507	36,485	43,020	90,600	93,881	69,958	42,288	28,117	48,632
		disturbed	14,862	12,707	9,130	77,302	42,237	34,474	39,544	86,901	87,427	65,091	39,409	21,406	44,297
		change (%)	-28%	-31%	-36%	-5%	-3%	-6%	-8%	-4%	-7%	-7%	-7%	-24%	-9%
Crooked Creek at Bell Creek	324.8	undisturbed	26,931	23,878	18,650	105,860	56,620	47,481	55,986	117,906	122,175	91,042	55,033	36,591	63,289
		disturbed	21,099	18,237	13,449	101,818	55,350	45,470	52,510	114,207	115,721	86,176	52,155	29,880	58,955
		change (%)	-22%	-24%	-28%	-4%	-2%	-4%	-6%	-3%	-5%	-5%	-5%	-18%	-7%

Notes:
Table is taken from BGC (2015h), Table 3-6.

Table G-11: Median Flow (50th Percentile) for Disturbed and Undisturbed Conditions – Year 20, High K

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	810	872	1,369	4,830	2,804	2,919	3,615	6,905	6,067	3,946	1,797	1,079	3,094
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	9,315	9,451	13,926	47,760	30,229	24,026	28,172	57,015	57,976	40,199	21,006	12,652	29,382
		disturbed	3,061	3,311	7,468	37,445	21,014	14,961	18,278	43,452	45,442	30,295	13,449	6,073	20,412
		change (%)	-67%	-65%	-46%	-22%	-30%	-38%	-35%	-24%	-22%	-25%	-36%	-52%	-31%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	12,003	12,178	17,944	61,541	38,951	30,958	36,301	73,467	74,705	51,799	27,068	16,303	37,860
		disturbed	5,706	5,982	11,295	54,996	33,233	25,443	30,019	63,600	65,883	45,643	23,176	9,714	31,310
		change (%)	-52%	-51%	-37%	-11%	-15%	-18%	-17%	-13%	-12%	-12%	-14%	-40%	-17%
Anaconda Creek	7.7	undisturbed	1,021	1,004	1,380	4,460	3,127	2,545	2,952	5,664	5,921	4,194	2,297	1,396	3,004
		disturbed	276	291	450	1,589	1,008	847	997	2,025	2,056	1,380	658	373	998
		change (%)	-73%	-71%	-67%	-64%	-68%	-67%	-66%	-64%	-65%	-67%	-71%	-73%	-67%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	12,976	13,165	19,399	66,531	42,110	33,469	39,244	79,423	80,762	55,999	29,262	17,625	40,930
		disturbed	5,934	6,257	11,820	57,116	34,273	26,255	31,007	65,918	68,075	47,028	23,731	10,013	32,373
		change (%)	-54%	-52%	-39%	-14%	-19%	-22%	-21%	-17%	-16%	-16%	-19%	-43%	-21%
Crooked Creek at Crevice Creek	119	undisturbed	14,272	14,482	21,646	73,701	45,537	36,550	43,133	87,254	88,655	61,794	32,119	19,364	44,984
		disturbed	7,229	7,574	14,067	64,285	37,700	29,337	34,895	73,748	75,968	52,824	26,588	11,752	36,428
		change (%)	-49%	-48%	-35%	-13%	-17%	-20%	-19%	-15%	-14%	-15%	-17%	-39%	-19%
Crooked Creek at Getmuna Creek	249.6	undisturbed	29,980	30,421	45,470	154,820	95,657	76,779	90,607	183,289	186,234	129,808	67,470	40,677	94,496
		disturbed	22,937	23,513	37,891	145,404	87,820	69,566	82,370	169,784	173,547	120,838	61,939	33,065	85,939
		change (%)	-23%	-23%	-17%	-6%	-8%	-9%	-9%	-7%	-7%	-7%	-8%	-19%	-9%
Crooked Creek at Bell Creek	324.8	undisturbed	39,016	39,589	59,174	201,481	124,487	99,920	117,915	238,531	242,363	168,931	87,805	52,937	122,976
		disturbed	31,973	32,681	51,595	192,066	116,650	92,707	109,678	225,026	229,676	159,961	82,274	45,325	114,420
		change (%)	-18%	-17%	-13%	-5%	-6%	-7%	-7%	-6%	-5%	-5%	-6%	-14%	-7%

Notes:
Table is taken from BGC (2015h), Table 3-7.

Table G-12: 10th Percentile Flow (Low Flow) for Disturbed and Undisturbed Conditions – Year 20, High K

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	6.9	undisturbed	592	508	389	2,503	1,280	1,392	1,841	3,652	3,432	2,208	1,261	827	1,661
		disturbed	0	0	0	0	0	0	0	0	0	0	0	0	0
		change (%)	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%
Crooked Creek at American	77.5	undisturbed	6,416	5,608	4,414	25,541	13,191	10,726	13,030	27,466	30,450	22,184	13,569	9,019	15,159
		disturbed	557	0	0	17,272	7,070	4,208	5,726	18,441	20,195	14,425	6,787	2,751	8,142
		change (%)	-91%	-100%	-100%	-32%	-46%	-61%	-56%	-33%	-34%	-35%	-50%	-69%	-46%
Crooked Creek below Omega (CCBO)	99.9	undisturbed	8,267	7,226	5,688	32,911	16,997	13,821	16,790	35,392	39,236	28,585	17,485	11,622	19,533
		disturbed	2,442	1,549	280	28,124	14,710	10,982	13,171	30,278	32,385	24,591	14,356	5,357	14,889
		change (%)	-70%	-79%	-95%	-15%	-13%	-21%	-22%	-14%	-17%	-14%	-18%	-54%	-24%
Anaconda Creek	7.7	undisturbed	718	624	491	2,459	1,421	1,228	1,450	2,857	3,215	2,409	1,512	1,004	1,618
		disturbed	189	164	129	820	411	378	456	958	1,037	707	399	264	494
		change (%)	-74%	-74%	-74%	-67%	-71%	-69%	-69%	-66%	-68%	-71%	-74%	-74%	-70%
Crooked Creek below Anaconda (CCBA)	108.0	undisturbed	8,938	7,812	6,149	35,579	18,376	14,942	18,151	38,261	42,418	30,903	18,902	12,564	21,117
		disturbed	2,583	1,675	380	29,153	15,079	11,253	13,538	31,249	33,388	25,207	14,660	5,560	15,348
		change (%)	-71%	-79%	-94%	-18%	-18%	-25%	-25%	-18%	-21%	-18%	-22%	-56%	-27%
Crooked Creek at Crevice Creek	119	undisturbed	9,851	8,735	6,822	38,723	20,711	17,368	20,480	43,130	44,691	33,303	20,131	13,385	23,151
		disturbed	3,497	2,598	1,052	32,297	17,414	13,679	15,867	36,118	35,661	27,607	15,889	6,380	17,382
		change (%)	-65%	-70%	-85%	-17%	-16%	-21%	-23%	-16%	-20%	-17%	-21%	-52%	-25%
Crooked Creek at Getmuna Creek	249.6	undisturbed	20,694	18,348	14,331	81,343	43,507	36,485	43,020	90,600	93,881	69,958	42,288	28,117	48,632
		disturbed	14,340	12,211	8,561	74,917	40,210	32,796	38,407	83,588	84,851	64,261	38,046	21,112	42,863
		change (%)	-31%	-33%	-40%	-8%	-8%	-10%	-11%	-8%	-10%	-8%	-10%	-25%	-12%
Crooked Creek at Bell Creek	324.8	undisturbed	26,931	23,878	18,650	105,860	56,620	47,481	55,986	117,906	122,175	91,042	55,033	36,591	63,289
		disturbed	20,577	17,741	12,880	99,434	53,323	43,792	51,373	110,894	113,145	85,346	50,792	29,587	57,521
		change (%)	-24%	-26%	-31%	-6%	-6%	-8%	-8%	-6%	-7%	-6%	-8%	-19%	-9%

Notes:
Table is taken from BGC (2015h), Table 3-8.

Table G-13: Median Flow (50th Percentile) for Disturbed and Undisturbed Conditions – Closure with Pit Lake at Capacity

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	8.0	undisturbed	931	1,007	1,593	5,603	3,363	3,399	4,197	7,991	7,017	4,597	2,066	1,250	3,595
		disturbed	0	0	0	6,605	6,596	6,052	4,647	4,312	5,128	0	0	0	2,783
		change (%)	-100%	-100%	-100%	18%	96%	78%	11%	-46%	-27%	-100%	-100%	-100%	-23%
Crooked Creek at American	77.5	undisturbed	9,315	9,451	13,926	47,760	30,229	24,026	28,172	57,015	57,976	40,199	21,006	12,652	29,382
		disturbed	8,384	8,444	12,333	48,762	33,462	26,679	28,621	53,335	56,087	35,602	18,941	11,403	28,569
		change (%)	-10%	-11%	-11%	2%	11%	11%	2%	-6%	-3%	-11%	-10%	-10%	-3%
Anaconda Creek	7.7	undisturbed	1,021	1,004	1,380	4,460	3,127	2,545	2,952	5,664	5,921	4,194	2,297	1,396	3,004
		disturbed	278	293	455	1,607	993	843	994	2,018	2,050	1,386	647	372	997
		change (%)	-73%	-71%	-67%	-64%	-68%	-67%	-66%	-64%	-65%	-67%	-72%	-73%	-67%
Crooked Creek below Anaconda (CCBA)	108	undisturbed	12,976	13,165	19,399	66,531	42,110	33,469	39,244	79,423	80,762	55,999	29,262	17,625	40,930
		disturbed	11,303	11,447	16,882	64,680	43,209	34,419	37,735	72,097	75,002	48,594	25,547	15,351	38,110
		change (%)	-13%	-13%	-13%	-3%	3%	3%	-4%	-9%	-7%	-13%	-13%	-13%	-7%
Crevice Creek	7.1	undisturbed	862	875	1,282	4,330	2,896	2,234	2,585	5,222	5,341	3,678	1,917	1,158	2,705
		disturbed	906	1,057	1,840	6,623	4,008	3,591	4,108	8,167	7,747	4,874	2,109	1,182	3,861
		change (%)	5%	21%	44%	53%	38%	61%	59%	56%	45%	33%	10%	2%	43%
Crooked Creek at Crevice Creek	119	undisturbed	14,272	14,482	21,646	73,701	45,537	36,550	43,133	87,254	88,655	61,794	32,119	19,364	44,984
		disturbed	12,642	12,945	19,687	74,143	47,748	38,858	43,146	82,873	85,300	55,585	28,595	17,114	43,321
		change (%)	-11%	-11%	-9%	1%	5%	6%	0%	-5%	-4%	-10%	-11%	-12%	-4%
Crooked Creek at Getmuna Creek	250	undisturbed	29,980	30,421	45,470	154,820	95,657	76,779	90,607	183,289	186,234	129,808	67,470	40,677	94,496
		disturbed	28,351	28,884	43,512	155,262	97,868	79,087	90,621	178,909	182,879	123,599	63,946	38,427	92,832
		change (%)	-5%	-5%	-4%	0%	2%	3%	0%	-2%	-2%	-5%	-5%	-6%	-2%
Crooked Creek at Bell Creek	325	undisturbed	39,016	39,589	59,174	201,481	124,487	99,920	117,915	238,531	242,363	168,931	87,805	52,937	122,976
		disturbed	37,387	38,053	57,216	201,923	126,698	102,227	117,929	234,151	239,008	162,722	84,281	50,687	121,313
		change (%)	-4%	-4%	-3%	0%	2%	2%	0%	-2%	-1%	-4%	-4%	-4%	-1%

Notes:
Table is taken from BGC (2015h), Table 4-1.

Table G-14: 10th Percentile Flow (Low Flow) for Disturbed and Undisturbed Conditions – Closure with Pit Lake at Capacity

Watershed	Area (sq.mi.)	Status	Flow (gpm)												
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
American Creek	8.0	undisturbed	692	590	460	2,972	1,520	1,663	2,166	4,325	3,828	2,607	1,437	949	1,939
		disturbed	0	0	0	6,605	6,605	3,303	0	0	1,541	0	0	0	1,502
		change (%)	-100%	-100%	-100%	122%	334%	99%	-100%	-100%	-60%	-100%	-100%	-100%	-23%
Crooked Creek at American	77.5	undisturbed	6,416	5,608	4,414	25,541	13,191	10,726	13,030	27,466	30,450	22,184	13,569	9,019	15,159
		disturbed	5,724	5,018	3,955	29,174	18,276	12,365	10,864	23,141	28,163	19,577	12,132	8,070	14,722
		change (%)	-11%	-11%	-10%	14%	39%	15%	-17%	-16%	-8%	-12%	-11%	-11%	-3%
Anaconda Creek	7.7	undisturbed	718	624	491	2,459	1,421	1,228	1,450	2,857	3,215	2,409	1,512	1,004	1,618
		disturbed	190	165	131	832	410	388	464	955	1,006	678	385	257	489
		change (%)	-74%	-74%	-73%	-66%	-71%	-68%	-68%	-67%	-69%	-72%	-75%	-74%	-70%
Crooked Creek below Anaconda (CCBA)	108	undisturbed	8,938	7,812	6,149	35,579	18,376	14,942	18,151	38,261	42,418	30,903	18,902	12,564	21,117
		disturbed	7,718	6,762	5,330	37,585	22,450	15,741	15,000	32,034	37,921	26,565	16,338	10,868	19,550
		change (%)	-14%	-13%	-13%	6%	22%	5%	-17%	-16%	-11%	-14%	-14%	-13%	-7%
Crevice Creek	7.1	undisturbed	591	510	415	2,231	1,158	1,009	1,185	2,544	2,695	2,007	1,235	818	1,369
		disturbed	591	510	415	3,132	1,510	1,624	1,938	4,019	3,706	2,337	1,235	818	1,824
		change (%)	0%	0%	0%	40%	30%	61%	64%	58%	38%	16%	0%	0%	33%
Crooked Creek at Crevice Creek	119	undisturbed	9,851	8,735	6,822	38,723	20,711	17,368	20,480	43,130	44,691	33,303	20,131	13,385	23,151
		disturbed	8,631	7,685	6,002	41,630	25,138	18,783	18,081	38,377	41,205	29,295	17,567	11,689	22,039
		change (%)	-12%	-12%	-12%	8%	21%	8%	-12%	-11%	-8%	-12%	-13%	-13%	-5%
Crooked Creek at Getmuna Creek	250	undisturbed	20,694	18,348	14,331	81,343	43,507	36,485	43,020	90,600	93,881	69,958	42,288	28,117	48,632
		disturbed	19,474	17,299	13,511	84,251	47,934	37,900	40,622	85,848	90,395	65,950	39,724	26,421	47,521
		change (%)	-6%	-6%	-6%	4%	10%	4%	-6%	-5%	-4%	-6%	-6%	-6%	-2%
Crooked Creek at Bell Creek	325	undisturbed	26,931	23,878	18,650	105,860	56,620	47,481	55,986	117,906	122,175	91,042	55,033	36,591	63,289
		disturbed	25,711	22,829	17,830	108,767	61,047	48,896	53,588	113,154	118,690	87,034	52,469	34,895	62,178
		change (%)	-5%	-4%	-4%	3%	8%	3%	-4%	-4%	-3%	-4%	-5%	-5%	-2%

Notes:
Table is taken from BGC (2015h), Table 4-2.