DIVISION OF MINING, LAND AND WATER
WATER RESOURCES SECTION
www.dnr.state.ak.us/mlw/water/index.htm

Alaska Department of NATURAL RESOURCES

Anchorage Office	Juneau Office	Fairbanks Office	*For ADNR Use Only*
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For ADNR Use Only *LAS #:* LAS 31477	*For ADNR Use Only* *CID #* 49052 *CID #*	*For ADNR Use Only* *Receipt Type* WR	

APPLICATION FOR WATER RIGHT

INSTRUCTIONS

1. Complete one application for each water source **(Incomplete applications will not be accepted)**.
2. Attach a copy of an executed deed, lease agreement, or other possessory interest document for property where water will be used (applicant must own, lease, or obtain written authorization to use water on property).
3. Attach copy of legal access document (i.e. right-of-way, easement, permit) or application for legal access to water withdrawal point and transport route, if applicable, or copy of request or application for legal access to water withdrawal point.
4. Attach driller's well log for drilled wells (if already drilled and available).
5. Attach sketch, photos, plans of water system, or project description (if applicable).
6. Attach legible map that includes Meridian, Township, Range, and Section lines such as a subdivision Plat, USGS topographical quadrangle, or borough tax map. Indicate location of water withdrawal, route of water transmission, water use area boundary, points of water use within boundary, and pont of water retrun flow (if applicable).
7. Attach copy of approved ADEC Water and Wastewater system certificate (if applicable).
8. Attach copy of ADF&G Fish Habitat Permit (if applicable).
9. Attach completed and notarized Statement of Beneficial Use of Water form and associated fee if water system and water use are fully developed.
10. **Submit the non-refundable Application Fee [Deposit]** (see page 4)

APPLICANT INFORMATION Pit Dewatering Wells, Horizontal Drains, and Sumps - Surface Water

Donlin Gold LLC Organization Name (if applicable)	Patty McGrath Agent or Consultant Name (if applicable)
 Individual Applicant Name (if applicable)	 Individual Co-applicant Name (if applicable)

4720 Business Park Blvd., Suite G-25 Mailing Address	Anchorage City	AK State	99503 Zip Code

(907) 279-0200 Daytime Phone Number	 Alternate Phone Number (optional)
(907) 273-0201 Fax Number (if available)	pmcgrath@donlingold.com E-Mail Address (optional)

PROPERTY DESCRIPTIONS

Location of Water Use

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
see Attachment A for use locations						QQ ¼	Q ¼

Location of Water Source

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
see Attachment B for source locations						QQ ¼	Q ¼

Location of Water Return Flow or Discharge (if applicable)

Geographic Name of Water Body or Well Depth	Meridian	Township	Range	Section	Quarter Sections	
see Attachment C for description of return flow locations					QQ ¼	Q ¼

WATER SOURCE DESCRIPTION

Ground Water

Type (e.g. drilled, dug)	Total Depth (in feet)	Static Water Level (in feet)	Date Completed	Well Yield (in gpm)

Surface Water

Type (e.g. stream, lake, spring)	Geographic Name (if named)
stream	Crooked Creek - See Attachment B

METHOD OF TAKING WATER (IF KNOWN) See Attachment B

Pump	Pump Intake _____ Inches Pump Output _____ GPM	Hours Working _____ Hours/Day Length of Pipe _____ Feet (from pump to point of use)
Gravity	Pipe Diameter _____ Inches Head _____ Feet	Length of Pipe _____ Feet (take point to point of use) Diversion Rate _____ ☐ GPM or ☐ CFS
Ditch	L _____ D _____ W _____ Feet	Diversion Rate _____ ☐ GPM or ☐ CFS
Reservoir	L _____ D _____ W _____ Feet	Water Storage _____ AF
Dam	L _____ H _____ W _____ Feet	Water Storage _____ AF

AMOUNT OF WATER	See Attachment B

Common Water Uses and Standard Amounts

Type of Use	How Many		Standard Amounts		Total Amount Requested	Months of Use	
						Begin	End
Fully Plumbed Single-family Home (includes irrigation of 10,000 sq. ft.)	#_____Homes	X	500 GPD	=			
Partially Plumbed Single-family Home (no hot water heater)	#_____Homes	X	250 GPD	=			
Unplumbed Single-family Home (hand carry water)	#_____Homes	X	75 GPD	=			
Duplex or Triplex	#_____Bldgs.	X	1000 GPD	=			
Four-plex and Larger Housing	#_____Units	X	250 GPD	=			
Motel or Resort	#_____Rooms	X	150 GPD	=			
Work Camps	#_____People	X	50 GPD	=			
Domestic Irrigation	#_____Sq. ft.	X	250 GPD per 10,000 Sq. ft.	=			
Non-domestic Irrigation	#_____Acres	X	0.5 AFY	=			

Other Water Uses

Type of Use	How Many		Amount		Total Amount Requested	Months of Use	
						Begin	End
		X		=			
		X		=			

Type of Use	Total Amount Requested	Months of Use	
		Begin	End
Open pit dewatering water may be used in the process plant, treated and discharged to Crooked Creek, used for dust control, or for fire training and suppression	36 cfs	1	12

Expected date for water system and water use to be fully developed ***or*** date when existing use started 2017.
Note: Pursuant to AS 46.15.180(a)(1). Crimes, a person may not construct works for an appropriation, or divert, impound, withdraw, or use a significant amount of water from any source without a permit, certificate of appropriation, or authorization issued under this chapter.

11 AAC 93.040 sets out the required information on an application for a water right. 11 AAC 93.050 authorizes the commissioner to decide what additional information is needed to process an application for a water right. This information is made a part of the state public water records and becomes public information under AS 40.25.110 and 40.25.120. Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 40.25.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit are punishable under AS 11.56.210.

SIGNATURE

The information presented in this application is true and correct to the best of my knowledge. I understand that per 11 AAC 93.040 and 11 AAC 93.050 additional information may be required by the department to adjudicate this application. Failure to provide requested information could result in this file being closed.

Signature	Date
Patty McGrath	Permitting Manager
Name (please print)	Title (if applicable)

APPLICATION FEE [DEPOSIT] - required by regulation, see 11 AAC 05.010(a)(8) for a detailed listing.

Make checks payable to "Alaska Department of Natural Resources":

- **$100** for one single-family residence or duplex, or for water use associated with one single-family residence or duplex.
- **$1,200** for activities related to oil and gas and associated substances.
- **Fee Varies** for activities related to locatable minerals, unless the application is filed under 11 AAC 05.010(a)(9)(E)(i) or (9)(F)(i) - *contact Water Resources Section for pre-application meeting.*
- **Fee varies** for hydroelectric power generation - *contact Water Resources Section for pre-application meeting.*
- **Fee varies** for water removal out of a hydrologic unit under AS 46.15.035 or 46.15.037 - *contact Water Resources Section for pre-application meeting.*
- **$200** for 5,000 GPD or less for a use not listed above.
- **$450** for greater than 5,000 GPD and no more than 30,000 GPD for a use not listed above.
- **$550** for greater than 30,000 GPD and no more than 100,000 GPD for a use not listed above.
- **$900** for greater than 100,000 GPD for a use not listed above.

REFERENCES

Measurement Units

GPD = gallons per day
CFS = cubic feet per second
GPM = gallons per minute
AF = acre-feet
AFY = acre-feet per year (325,851 gallons/year)
AFD = acre-feet per day (325,851 gallons/day)
MGD = million gallons per day

Conversion Table

5,000 GPD=	30,000 GPD=	100,000 GPD=	500,000 GPD=	1,000,000 GPD=
0.01 CFS	0.05 CFS	0.2 CFS	0.8 CFS	1.5 CFS
3.47 GPM	20.83 GPM	69.4 GPM	347. 2 GPM	694.4 GPM
5.60 AFY	33.60 AFY	112.0 AFY	560.1 AFY	1120.1 AFY
0.02 AFD	0.09 AFD	0.3 AFD	1.5 AFD	3.1 AFD
0.01 MGD	0.03 MGD	0.1 MGD	0.5 MGD	1.0 MGD

Water Use from Crooked Creek associated with Water Management Structures

Water management impoundments will be constructed in tributaries to Crooked Creek to control and manage water around the mine facilities. These impoundments which include the Snow Gulch reservoir, Upper and Lower Contact Water Ponds, and tailing storage facility (TSF) will retain water that would otherwise discharge to Crooked Creek In addition, groundwater intercepted by the Seepage Recovery System below the TSF will divert groundwater that would otherwise flow to Crooked Creek. Estimation of the flow reduction from other water uses is required to evaluate the total flow reduction in Crooked Creek

These water management sources, locations, and associated water right applied for are summarized in Table 4. The locations are also shown on Figure 3.

The impoundments will be constructed in accordance with Department of Natural Resources dam safety permits. The initial submittal for a certificate of approval to construct a dam for these facilities was submitted to, ADNR Dam Safety and Construction Unit, on April 13, 2013. The water rights applications were submitted to Water Resource Section, ADNR Division of Mining Land and Water on May 16, 2013, and satisfy the Proof of a water right or water right application for waters, as required by AS 46.15.

The relative quantities of the surface water withdrawal from the locations listed above will change throughout the mine life. The average and peak individual water quantities are summarized in Table 5.

Table 2 – Open Pit Water Sources

Source	Location (see Figure 2)
Direct loss of Crooked Creek surface water	Reach of Crooked Creek within Sections 27 and 34, T23N, R49W, Seward Meridian (approximately 4,000 feet)
Loss from produced ground water that would otherwise discharge to surface water	Area within drawdown from cone of influence of pit dewatering water (Sections 23, 24, 25, 26, 27, 28, 33, 34, 35, and 36 of T23N, R49W; Sections 30, 31, and 32 of T23N, R48W; Sections 5, 6, 7, and 8 of T22N, R48W; and Sections 1, 2, 3, 10, 11, and 12 of T22N, R49W; Seward Meridian) and groundwater intercepted by the TSF underdrain (Sections 11, 12, 13, and 14 of T22N, R49W and Sections 7, 8, 17 and 18 of T22N, R48W; Seward Meridian)
Loss from surface water runoff from diversions within or around the Open Pit	
Crooked Creek Drainage (includes Ruby Gulch tributary)	Area within open pit footprint and surface water drainage capture area within the Crooked Creek drainage in the S½ of Section 26, Section 34, and NW¼ of Section 35, T23N, R49W, Seward Meridian
Queen Gulch Drainage (tributary to Crooked Creek)	Area within open pit footprint and surface water capture area within the Queen Gulch drainage in SW¼ of Section 25, SE¼ of Section 26, and NW¼ of Section 36, T23N, R49W; N½ of Section 3, T22N, R49W, Seward Meridian.
Lewis Creek Drainage (tributary to Crooked Creek)	Area within open pit footprint and surface water capture area within the Lewis Creek Drainage in SW ¼ of Section 25, S½ of Section 26, NE¼ of Section 34, N½ of Section 35, and NW ¼ of Section 36, T23N, R49W, Seward Meridian
American Creek Drainage (tributary to Crooked Creek)	Area within open pit footprint and surface water capture area and other mine facilities for which surface drainage is diverted to the Contact Water Dams, within Section 2 and N½ of Section 3, T22N, R49W, Sections 34, 35, and W½ of 36, Seward Meridian . Does not include areas upgradient of the Lower Contact Water Dam.
Omega Creek Drainage (tributary to Crooked Creek)	Ore stockpile area adjacent to crusher reporting to the Ore Stockpile Berm in S½ of Section 2 and NE¼ of Section 3, T22N, R49W, Seward Meridian.

Table 3 – Estimated Flow Reduction in Crooked Creek associated with Pit Dewatering

Source	Quantity (cfs)	
	Average	Peak
Crooked Creek Surface Water Use from Pit Dewatering		
Direct loss from Crooked Creek due to dewatering wells	0.8	1.1
Reduction in groundwater discharge to Crooked Creek intercepted by dewatering wells	2.8	3.5
Retention of surface water discharge from capture of contact water and run-on water in the open pit area.	2.7	6.4
Total	**6.3**	**11**

Attachment A
Crooked Creek Water Right Application

LOCATION OF WATER USE

This water right is required for the surface water that will be removed from Crooked Creek and tributaries above the confluence of Crevice Creek as a result of certain water management activities (uses) associated with the proposed Donlin Gold Mine. The proposed Donlin Gold Mine is located in western Alaska approximately 145 miles northeast of Bethel and 10 miles north of the village of Crooked Creek. The proposed mine facilities are in the Crooked Creek watershed.

The water take authorized under this application would be used for the activities identified on page 3 of this application, including: ore processing, dust control, and fire suppression. Some of the water will be treated and discharged back to Crooked Creek under an Alaska Pollutant Discharge Elimination System (APDES) Permit (see Attachment C). The location of these water use activities are provided in Table 1 and Figures 1a (Wider Project Area) and 1b (Facility Area).

Table 1 –Water Use Locations

Use	Location (see Figures 1a and 1b)
Process Plant Water	Section 1, 2, 11, and 12 T22N, R49W; Section 5, 6, 7, and 8 T22N, R48W; and portions of Section 32, T23N, R48W, Seward Meridian
Water Treatment Plant and Outfall to Crooked Creek	Section 2 and 3, T22N, R49W Seward Meridian
Dust Control	Potentially along all unpaved roads including portions of Section 30, 31 , and 32, T23N, R48W; Section 25, 26, 27, 34, 35, 36 T23N, R49W; Section 1, 2, 3, 4, 8,9,10, 11, 12,13, 14, 15, 17, 18, and N ½ 22 T22N, R49W; Section 33, T23N, R50W; Section 5, 6, 7, 8, 17, 18, and 20, T22N, R48W; Section 2, 3, 4, 11, 12, 13, 14, 23, 26, and 35, T22N, R50W; Section 3,4,9, 16, 21, 22, 27, 33, and 34, T21 N, R50W; Section 6, 8, 16, 17, 21, 22, 23, 24, and 25, T20N, R50W; Section 19, 29, 30, T20N, R49W, Seward Meridian.
Fire Training and Suppression	Anywhere needed but primarily at the process plant, bulk fuel storage, and laydown areas in Sections 1, 2, 11 and 12, T22N, R49W, and Section 7, T22N, R48W, Seward Meridian.

Attachment B
Crooked Creek Water Right Application

LOCATIONS OF WATER SOURCES AND QUANTITIES

Crooked Creek and tributary surface water would be removed by water management associated with the proposed project, including:

- open pit construction, dewatering and diversions
- water management system impoundments and diversions

The water source locations and estimated surface water quantities are discussed below.

Water Use from Crooked Creek and Tributaries associated with the Open Pit

Surface water impoundment and groundwater dewatering are necessary activities for construction and operation of the open pit mine. Dewatering groundwater within the mine pit area is necessary to provide efficient blasting of ore and waste, safe operating conditions for mine personnel (stable pit walls), and drier ore to minimize frozen chunks and bridging of feeders. Pumping and retention of runoff water from the pit walls and water runoff from between the Lower Contact Water Dam and the pit is required to control mine contact water.

Typical locations of wells and sumps from which the water will be extracted for pit dewatering are shown on Figure 2. A groundwater right application was submitted to ADNR Division of Mining Land and Water on May 16, 2013 for groundwater produced from these wells, Pit Perimeter and In-pit Dewatering Wells and Drains, and the application was assigned Land Administration System (LAS) #29173.

The number of wells, horizontal drains and sumps within the pit and individual pumping rates will vary depending on a number of factors including:

- Phase of the mining operations;
- Some horizontal drains and wells will be mined out and replaced in other areas of the pit or pit perimeter, but within the same aquifer;
- Wells drilled that do not perform as designed will be abandoned and replaced; and,
- Some wells will be cycled to allow recharge for the most efficient dewatering operations.

In addition to removal of groundwater, the dewatering activities will result in removal of surface water from Crooked Creek and certain tributary gulches at the locations identified in Table 2.

The quantities of surface water that will be either withdrawn or diverted from Crooked Creek by construction and dewatering of the open pit are summarized in Table 3.

Table 4 – Donlin Gold Impoundment of Water from Crooked Creek Tributaries associated with Water Management Structures

Source	Location (see Figure 3)	Associated Water Right Application
Loss from surface water runoff from flow to the Seepage Recovery System (re-statement of appropriation associated with TSF Interceptor and Seepage Collection Wells water right)		
Anaconda Creek Drainage	Area from which surface water drainage from the face of the TSF Dam face is captured by the drainage ditch near the dam toe, E½ of Section 14 and SE¼ of Section 11, T22N, R49W, Seward Meridian.	TSF Interceptor & Seepage Collection Wells (LAS # 29175)
Anaconda Creek Drainage	Groundwater and TSF seepage water entering the undertrain installed in Sections 11, 12, 13, and 14 of T22N, R49W, Seward Meridian and Sections 7, 8, 17 and 18 of T22N, R48W, Seward Meridian and surface water entering the underdrain from upslope areas within the Anaconda drainage, and groundwater produced from wells installed in Section 14 T22N, R49W, Seward Meridian.	TSF Interceptor & Seepage Collection Wells (LAS # 29175)
Loss from Impoundment of Water (re-statement of existing water right application)		
Snow Gulch Drainage	Area upstream of the Snow Gulch Fresh Water Dam crest	Snow Gulch Freshwater Dam (LAS #29169)
American Creek Drainage	Area upstream of the Lower Contact Water Dam crest	Lower Contact Water Dam (LAS #29170) Upper Contact Water Dam (LAS #29168)
Anaconda Creek Drainage	Area upstream of the TSF Dam crest	Tailings Dam (LAS #29177)

Table 5 – Flow Reduction in Crooked Creek associated with Water Management Impoundments and Tailings Dam Seepage Recovery System

Source	Quantity (cfs)	
	Average	Peak
Crooked Creek Surface Water Use from Impoundment of Tributaries		
Snow Gulch (flow above Snow Gulch Freshwater Dam crest)	<0.1[1]	4.5[2]
American Creek (flow above Lower Contact Water Dam crest)	5.3	9.8
Anaconda Creek (flow above TSF Dam crest)	5.1	9.3
Crooked Creek Surface Water Use from Seepage Recovery System in Anaconda		
Reduction in groundwater discharge to Crooked Creek intercepted by Seepage Recovery System	1.5	1.6
Tailings Dam, diversion of runoff from dam face to Seepage Recovery System	0.1	0.2
Total	**12**	**25**

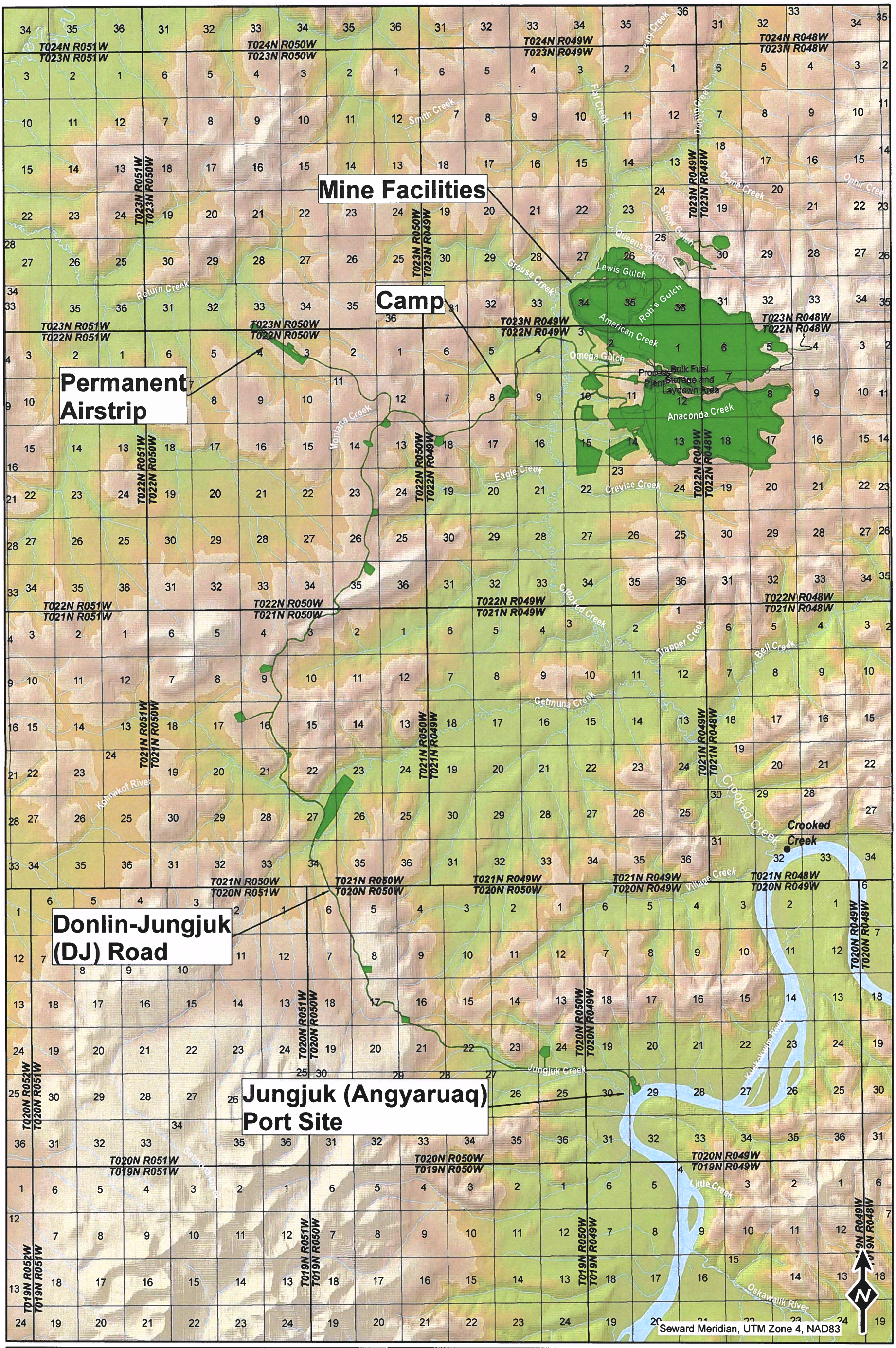
[1] Flow reduction in Snow Gulch during average flow periods when reservoir is full
[2] Flow reduction in Show Gulch during high flow periods when reservoir is filling

Attachment C
Crooked Creek Water Right Application

LOCATION OF WATER RETURN FLOW

Water return flow to Crooked Creek from open pit dewatering, the Upper and Lower Contact Water Dams, the Seepage Recovery System, and the Tailings Dam will be from the Operations Water Treatment Plant discharge which would be authorized under an APDES Permit. The location of this discharge to Crooked Creek will be below Omega Gulch, located in the SW¼ of Section 3, T22N, R49W, Seward Meridian, as shown on Figure 2.

Water return flow to Crooked Creek from the Snow Gulch Freshwater Dam will be from the dam spillway which discharges to lower Snow Gulch, located in Township 23N, Range 49W, N½ of the NE ¼ of Section 25, as shown on Figure 3, or from treatment of water used in the Process Plant in the Operations Water Treatment Plant, discharged to Crooked Creek below Omega Gulch as described above.



Project Facilities and Connecting Roadways

(water may be used for dust control on roadways and exposed soil within this area)

DONLIN GOLD

WATER USE LOCATIONS WIDER PROJECT AREA

DONLIN GOLD PROJECT

SCALE: 0 0.5 1 2 mi / 0 1 2 4 km

FIGURE: 1a

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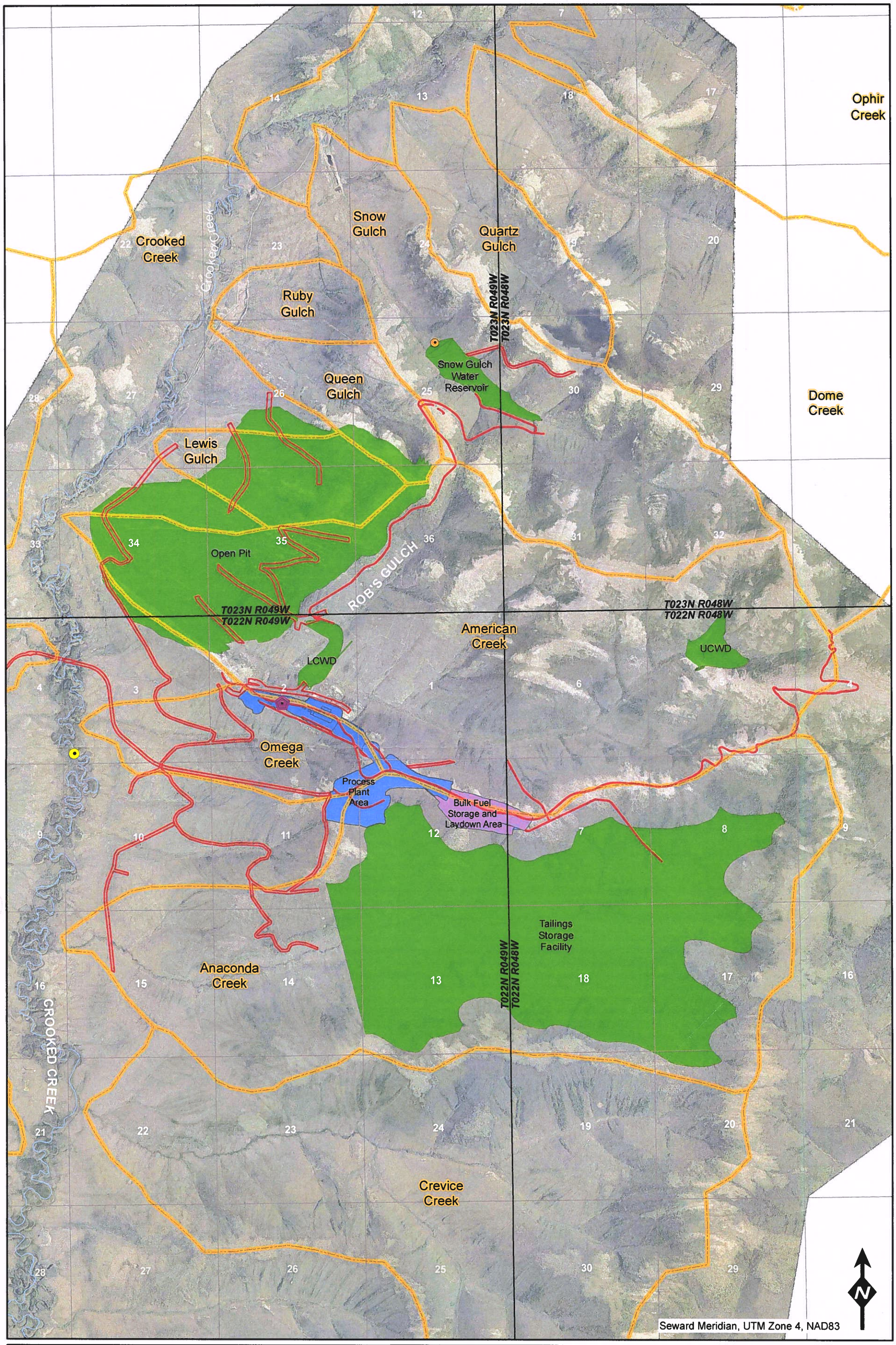

Watershed Boundary (BGC, 2016)

Water Treatment Plant Outfall

Operations Water Treatment Plant

Spillway

Unpaved Road (Typical)

Bulk Fuel Storage and Laydown Area

Process Plant

Engineering Footprint

DONLIN GOLD

WATER USE LOCATIONS FACILITY AREA

DONLIN GOLD PROJECT

SCALE: 0 1,000 2,000 4,000 ft / 0 300 600 1,200 m

FIGURE: 1b

DG: PER0554.mxd, 09/21/16, R05

Ophir Creek
Crooked Creek
Snow Gulch
Quartz Gulch
Ruby Gulch
Queen Gulch
Dome Creek
Lewis Gulch
Open Pit
ROB'S GULCH
American Creek
Omega Creek
Anaconda Creek
Crevice Creek
CROOKED CREEK
Snow Gulch Water Reservoir
Tailings Storage Facility
LCWD
UCWD
T023N R049W
T022N R049W
T023N R048W
T022N R048W
Seward Meridian, UTM Zone 4, NAD83

Contour (50 ft)
Watershed Boundary (BGC, 2016)
Dewatering Well Water Line (Schematic Only)
Treated Water Line (Schematic Only)
Water Treatment Plant Outfall
Pit Dewatering Well (Typical)
Operations Water Treatment Plant
In-Pit Sump (Typical)
Open Pit Surface Water Capture Area
Area of Direct Loss to Crooked Creek
Engineering Footprint

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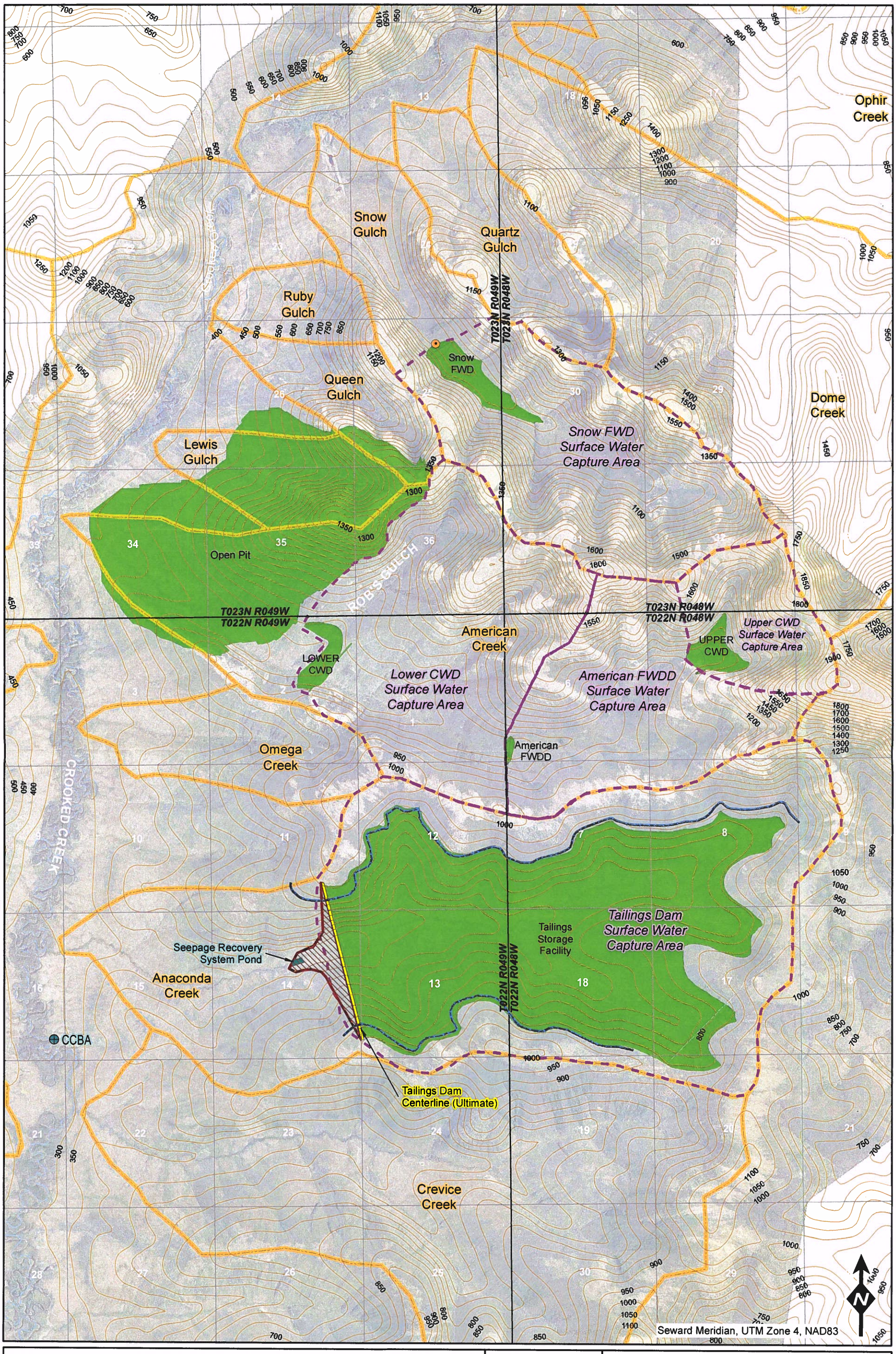
LOCATION OF OPEN PIT DEWATERING SOURCES

DONLIN GOLD PROJECT

SCALE: 0 1,000 2,000 4,000 ft / 0 300 600 1,200 m

FIGURE: 2

DG: PER0556.mxd, 09/21/16, R04



Contour (50 ft)
Watershed Boundary (BGC, 2016)
Spillway
Station CCBA
Engineering Footprint
Tailings Dam Centerline (Ultimate)
Seepage Pond
Surface Water Capture Area
TSF Diversion Channel
Tailings Dam Face Diversion Channel
Capture Area on Tailings Dam Face

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LOCATIONS OF WATER USE FROM CROOKED CREEK (NOT ASSOCIATED WITH PIT DEWATERING)

DONLIN GOLD PROJECT

SCALE: 0 1,000 2,000 4,000 ft; 0 300 600 1,200 m

FIGURE: 3

DG: PER0557.mxd, 09/19/16, R03