

PROPERTY DESCRIPTIONS

Location of Water Use

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Mine (see attached)		Kateel	31N	18W		QQ 1/4	Q 1/4

Location of Water Source

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Mine Middle Fork Red Dog Creek (see Attached)		Kateel	31N	18W		QQ 1/4	Q 1/4

Location of Water Return Flow or Discharge (if applicable)

Geographic Name of Water Body or Well Depth	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Tailings Pond, and mine pits (see attached)	Kateel	31N	18W	19	QQ 1/4	Q 1/4

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)
Surface Runoff	Middle Fork Red Dog Creek

METHOD OF TAKING WATER (IF KNOWN)

Pump	Pump Intake ^{see attached} _____ Inches	Hours Working <u>24</u> Hours/Day
	Pump Output _____ GPM	Length of Pipe _____ Feet (from pump to point of use)
Gravity	Pipe Diameter _____ Inches	Length of Pipe _____ Feet (take point to point of use)
	Head _____ Feet	Diversion Rate _____ <input type="checkbox"/> GPM or <input type="checkbox"/> CFS
Ditch	L _____ D _____ W _____ Feet	Diversion Rate _____ <input type="checkbox"/> GPM or <input type="checkbox"/> CFS
Reservoir	L _____ D _____ W _____ Feet	Water Storage ^{main pit 3.5 b gal} _____ AF
Dam	L _____ H _____ W _____ Feet	Water Storage _____ AF

AMOUNT OF WATER

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
Precipitation Collection and Storage (See attached)					45,592 AFY	Jan	Dec

Expected date for water system and water use to be fully developed **or** date when existing use started _____.
 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. AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made a part of the state public land records and becomes public information under AS 40.25.110 and 40.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(8) and confidentiality is requested, AS 43.05.230, or AS 45.48). 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 44.99.310, 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. In submitting this form, the applicant agrees with the Department to use "electronic" means to conduct "transactions" (as those terms are used in the Uniform Electronic Transactions Act, AS 09.80.010 – AS 09.80.195) that relate to this form and that the Department need not retain the original paper form of this record: the department may retain this record as an electronic record and destroy the original.

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.

Yesnik Leslie RDOG
Digitally signed by Yesnik Leslie
RDOG
Date: 2021.04.16 17:09:44 -08'00'

Signature

Les Yesnik

Name (please print)

Date

General Manager

Title (if applicable)

FEE required by regulation 11 AAC 05.260.

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.
- **\$1,500** for up to 60 hours of staff time, for activities related to oil and gas and associated substances.
- **\$1,500** for up to 60 hours of staff time, for activities related to locatable mining.
- **\$1,500** for up to 60 hours of staff time, for hydroelectric power generation capacity greater than 100 kilowatts.
- **\$1,500** for up to 60 hours of staff time, for water removal out of a hydrologic unit under AS 46.15.035 or 46.15.037.
- **\$250** for 5,000 GPD or less for a use not listed above.
- **\$565** for greater than 5,000 GPD and no more than 30,000 GPD for a use not listed above.
- **\$690** for greater than 30,000 GPD and no more than 100,000 GPD for a use not listed above.
- **\$1,125** 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

<u>5,000GPD=</u>	<u>30,000GPD=</u>	<u>100,000GPD=</u>	<u>500,000GPD=</u>	<u>1,000,000GPD=</u>
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

Red Dog Mine – Middle Fork Red Dog Creek Withdrawal Additional Information

Property Descriptions

Location of Water Use				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	18W	16	SW
Kateel	31N	18W	17	SW & SE
Kateel	31N	18W	19	NW
Kateel	31N	18W	20	
Kateel	31N	18W	21	NW & SW
Kateel	31N	18W	29	

Location of Water Source				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	18W	16	SW
Kateel	31N	18W	17	SW & SE
Kateel	31N	18W	19	NW
Kateel	31N	18W	20	
Kateel	31N	18W	21	NW & SW
Kateel	31N	18W	29	

Location of Water Return Flow or Discharge				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	18W	19	

Water Source Description

The water source is located in the Middle Fork Red Dog Creek Drainage Basin. The main water source is the precipitation falling within the approximately 576 acre area that flows into the Red Dog Tailings Facility. An unknown quantity of ground water is also collected by gravity flow to the mine pits. Additionally water withdrawn from the Bons Creek drainage or the South Fork Red Dog Creek drainage under separate permits may be stored in the Main Pit prior to treatment and discharge to Red Dog Creek.

Method of Taking water

The Water withdrawal is from the following locations:

Middle Fork Red Dog Creek Precipitation Collection

Precipitation falling in the Middle Fork Red Dog Creek Drainage Basin is collected in the mine pits. Multiple diversion structures have been constructed to divert precipitation away from this area and into the Middle Fork Red Dog Creek. The collection area flowing into the mining area is approximately 576 acres. An unknown amount of ground water seeps into the mine pits and is collected along with the

precipitation. The volume of water withdrawing annually varies depending on the precipitation. Based on an annual precipitation of 40 inches a volume of 1,920 AFY may be collected.

Main Pit

The Mine pit has been completed. The pit is now used for water storage and waste rock storage. The pit has a capacity to store 10,000 acre feet based on a maximum water elevation of 850 ft AMSL. The water storage volume is reduced as waste rock is added to the pit. The current mine plan is to completely backfill this pit from waste rock from the Aqqaluk pit.

Aqqaluk Pit

The Aqqaluk pit is currently being mined, at closure the pit will be converted to a water storage reservoir with a capacity of 19,477 acre feet at a maximum water elevation of 850 feet.

Mine Water Diversion Pumping System

All water collected in the mining area that is not stored in the pits is pumped to the Mine Water Diversion pumping system and pumped to the tailings facility for storage prior to treatment and discharge to Red Dog Creek. The collection of this water is required by APDES permit AK0038652. A seepage collection system is located down gradient of the pumping system. The system has the capacity to pump 8,800 gpm year around for an annual capacity of 14,195 acre feet.

Water Usage

The water is used for metal mining and treatment for discharge to Red Dog Creek, and dust control. To maintain the site water balance water may also be pumped to the tailings pond in the South Fork Red Dog Creek collection area.

Total Water Requested

Teck is requesting a total annual water use from the Middle Fork Red Dog Creek drainage basin of 45,592 AFY.

Annual Withdrawals

- 100% precipitation from ~576 acre drainage collection area that flows to the mine pits. 1,920 AFY
- Main Pit water storage volume 10,000 acre feet.
- Aqqaluk Pit water storage volume 19,477 acre feet.
- Mine Water Diversion Pumping System 14,195 volume

Red Dog Mine Mining Area Water Use Location Map

