

OCT 08 2021

DEPARTMENT OF
WATER RESOURCES**MINIMUM REQUIREMENTS CHECKLIST**
TO BE SUBMITTED WITH APPLICATION FOR TRANSFER

An application for transfer must be prepared in accordance with the minimum requirements listed below to be acceptable for processing by the Department. Incomplete applications will be returned. The instructions, fee schedule, Part 2A reports and additional Part 2B forms are available from any Department office or on the Department's website at www.idwr.idaho.gov.

Name of Applicant(s) Perpetua Resources Idaho, Inc.

Check whether each item below is *attached* (Yes) or *not applicable* (N/A) for the proposed transfer.

Yes N/A * Means the item is always required and must be included with the application.

- ☒ * Completed Application for Transfer of Water Right form, Part 1.
- ☒ * Signature of applicant(s) or applicant's authorized representative on Application for Transfer Part 1. Include evidence of authority labeled Attachment #3 (see below) if signed by representative.
- ☒ * Application for Transfer Part 2A. Attach a Part 2A report describing each water right in the transfer as currently recorded.
- ☐ ☒ Complete and attach an Application for Transfer Part 2B for each water right for which only a portion is proposed to be changed through this transfer application.
- ☒ * Application for Transfer Part 3A is always required (see Attachment #7a below); Parts 3B and 3C must be completed for transfer applications proposing to change the nature of use of the water right(s) or proposing changes to supplemental right(s).
- ☒ * Correct fee submitted with transfer application form. (Fee schedule is on website and instructions for application for transfer.)

Attachments to Application - Label each attachment with the corresponding number shown below as Attachment #1-10.

- ☐ ☒ #1 If the applicant is a business, partnership, organization, or association, and not currently registered in the State of Idaho as a business entity, attach documentation identifying officers authorized to sign or act on behalf of right holder. (See Part 1.)
- ☒ ☐ #2a Water Right ownership documentation if Dept. records do not show the applicant as the current water right owner. **
- ☐ ☒ #2b If the ownership of the water right will change as a result of the proposed transfer to a new place of use, attach documentation showing land and water right ownership at the new place of use. Include documentation for all affected land and owner(s).**
** Additional fee(s) required for water right ownership changes; see fee schedule.
- ☐ ☒ #3 Documentation of authority to make the change if the applicant is not the water right owner.
- ☒ ☐ #4 Power of Attorney or documentation providing authority to sign or act on the applicant's behalf. (See Part 1.)
- ☐ ☒ #5 If the transfer application proposes to change the point of diversion for a water right affecting the Eastern Snake Plain Aquifer (ESPA), attach the results of an ESPA analysis and a detailed mitigation plan to offset any depletions to hydraulically connected reaches of the Snake River. ESPA transfer spreadsheet and model grid labeled cells are available on the Department's website at www.idwr.idaho.gov/WaterManagement/WaterRights/WaterRightTransfers/resources.htm.
- ☐ ☒ #6 Notarized statement of agreement or a statement on official letterhead signed by an authorized representative from each lien holder or other entity with financial interest in the water right(s) or land affected by the proposed transfer. (See Part 1.5.c.)
- ☒ * #7a Attach a map identifying the proposed point(s) of diversion, place(s) of use, and water diversion and distribution system details as described on the application. Include legal description labels. If only a portion of the right is proposed to be changed, identify the current location of the part of the existing right(s) proposed to be changed. (See Part 3A.)
- ☐ ☒ #7b If the transfer application proposes to change the place or purpose of use of an irrigation right attach a Geographic Information System (GIS) shape file, or an aerial photo or other image clearly delineating the location and extent of existing acres and changes to the place of use. If some or all of any right is leased to the Water Supply Bank, you must also show the the specific location and/or acres to be idled at the new, proposed place of use to satisfy lease requirements.
- ☐ ☒ #8a If the transfer application proposes to change the nature of use or period of use for one or more rights, provide documentation describing the extent of historic beneficial use for the water rights proposed to be transferred and document how enlargement will be avoided. (See Part 3B.) Additional fee required for proposed changes to nature of use; see fee schedule.
- ☐ ☒ #8b If the transfer application proposes to change the place of use of a supplemental irrigation right, provide documentation regarding the historic use of the supplemental right(s) and availability or reliability of the primary right(s) being supplemented, both before and after the proposed change. (See Part 3C.)
- ☐ ☒ #9 Water Supply Bank information for all rights proposed for transfer and currently leased to the Bank. (Attachment WSB)
- ☐ ☐ #10 Other. Please describe: _____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR TRANSFER OF WATER RIGHT PART 1

Name of Applicant(s) Perpetua Resources Idaho, Inc. Phone (208) 901-3060
Mailing address P.O. Box 429, Donnelly, Idaho 83615 Email ahaslam@midasgoldinc.com

- ☐ If applicant is not an individual and not registered to do business in the State of Idaho, attach documentation identifying officers authorized to sign or act on behalf of the applicant. Label it **Attachment #1**.
- ☒ Attach water right ownership documentation if Department records do not show the transfer applicant as the current water right owner. Label it **Attachment #2a**.
- ☐ If the ownership of the water right will change as a result of the proposed transfer to a new place of use, attach documentation showing land and water right ownership at the new place of use. Include documentation for all affected land and owner(s). Label it **Attachment #2b**.
- ☐ Attach documentation of authority to make the proposed change if the applicant is not the water right owner. Label it **Attachment #3**.

Provide contact information below if a consultant, attorney, or any other person is representing the applicant in this transfer process.

☐ No Representative

Name of Representative Kevin J. Beaton, Stoel Rives LLP Phone (208) 387-4214
Mailing address 101 S. Capitol Boulevard, Suite 1900, Boise, Idaho 83702-7705 Email kevin.beaton@stoel.com

- ☐ Send all correspondence for this application to the representative and not to the applicant.
OR
- ☒ Send original correspondence to the applicant and copies to the representative.
- ☒ The representative may submit information for the applicant but is not authorized to sign for the applicant.
OR
- ☐ The representative is authorized to sign for the applicant. Attach a Power of Attorney or other documentation providing authority to sign for the applicant and label it **Attachment #4**.

I hereby assert that no one will be injured by the proposed changes and that the proposed changes do not constitute an enlargement in use of the original right(s). The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Ahaslam
Signature of Applicant or Authorized Representative

Ahaslam VP Perpetua 10/8/2021
Print Name and Title if applicable Date

Signature of Applicant or Authorized Representative

Print Name and Title if applicable

Date

A. PURPOSE OF TRANSFER

1. ☒ Change point of diversion ☒ Add diversion point(s) ☒ Change place of use
☐ Change nature of use ☐ Change period of use ☐ Other _____

2. Describe your proposal in narrative form, including a detailed description of non-irrigation uses to justify amounts transferred (i.e. number of stock, etc.), and provide additional explanation of any other items on the application. Attach additional pages if necessary and label it **Part 1A.2**.

The applicant proposes changing the point of diversion and place of use for water right 77-7141 to the site of proposed employee housing in the area of Stibnite, Idaho. Water right 77-7141 will be combined with a proposed permit application for domestic water supply to serve 750 residents.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR TRANSFER OF WATER RIGHT

PART 1 Continued

B. DESCRIPTION OF RIGHTS AFTER THE REQUESTED CHANGES. IF THE RIGHTS ARE BEING SPLIT, DESCRIBE PORTIONS TO BE CHANGED AS THEY WOULD APPEAR AFTER THE REQUESTED CHANGES.

1.	Right Number	Amount (cfs/ac-ft)	Nature of Use	Period of Use	Source & Tributary
All or Part ☒ ☐	77-7141	0.20 cfs	domestic	1/1 to 12/31	groundwater
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	
☐ ☐				to	

Total authorized under rights 0.20 cfs and/or 11.4 acre-feet.

2. Total amount of water proposed to be transferred or changed 0.20 cubic feet per second and/or 11.4 acre-feet per year.

3. Point(s) of Diversion:

- ☐ No changes to point(s) of diversion are proposed - the following chart is therefore not completed. (Proceed to #4.)
- ☐ Attach Eastern Snake Plain Aquifer analysis if this transfer proposes to change a point of diversion affecting the ESPA.
Label it **Attachment #5**.

New ?	Lot	¼	¼	¼	Sec	Twp	Rge	County	Source	Local name or tag #
Y			NE	NE	24	18N	9E	Valley	groundwater	TBD
Y			SW	SE	13	18N	9E	Valley	groundwater	TBD
Y			SW	SE	13	18N	9E	Valley	groundwater	TBD
Y			SW	SE	13	18N	9E	Valley	groundwater	TBD

4. Place of use: (If irrigation, identify with number of acres irrigated per ¼ ¼ tract.)

- ☐ No changes to place of use are proposed - the following chart is therefore not completed. (Proceed to #5.)

Twp	Rge	Sec	NE ¼				NW ¼				SW ¼				SE ¼				Acre Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
18N	9E	24	D	D															
18N	9E	13															D		
Total Acres (for irrigation use)																			

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

**APPLICATION FOR TRANSFER OF WATER RIGHT
PART 1 Continued**

5. General Information:

- a. Describe the complete diversion system, including how you will accommodate a measuring device and lockable controlling works should they be required now or in the future:
The diversion system will include four wells, pumps and distribution piping to the place of use. The works will be constructed to accommodate a measuring device and lockable controlling works as required by IDWR or a local water district.
- b. Who owns the property at the point(s) of diversion? USDA-US Forest Service
 If other than the applicant, describe the arrangement enabling the applicant to access the property for the diversion system:
The applicant has land use applications pending with the USDA-US Forest Service.
- c. Are the lands from which you propose to transfer the water right subject to any liens, deeds of trust, mortgages, or contracts?
If yes, ☐ attach a notarized statement from the holder of the lien, deed of trust, mortgage or contract agreeing to the proposed changes on official letterhead signed by an authorized representative. Label it **Attachment #6**. List the name of the entity and type of lien: _____

 It is the applicant's responsibility to provide notice to lien holder, trustee, mortgagor, or contract holder of the proposed changes that may impact or change the value of the water rights or affected real property. Any misrepresentation of legal encumbrance on this application may result in rejection of the application or cancellation of an approval.
- d. Are any of the water rights proposed for transfer currently leased to the Water Supply Bank?
If yes, ☐ complete Attachment WSB.
- e. Describe the effect on the land now irrigated if the place or purpose of use is changed pursuant to this transfer:
n/a
- f. Describe the use of any other water right(s) for the same purpose or land, or the same diversion system as right(s) proposed to be transferred at both the existing and proposed point(s) of diversion and place(s) use:
There are no overlapping water rights for domestic use at the existing point of diversion and place of use. The applicant proposes combining water right 77-7141 with a proposed permit application using the same point of diversion and place of use.
- g. To your knowledge, has/is any portion of the water right(s) proposed to be changed:
Yes No
☐ ☒ undergone a period of five or more consecutive years of non-use,
☐ ☒ currently leased to the Water Supply Bank,
☐ ☒ currently used in a mitigation plan limiting the use of water under the right, or
☐ ☒ currently enrolled in a Federal set-aside program limiting the use of water under the rights?

If yes, describe:



0004224179



STATE OF IDAHO
Office of the secretary of state, Lawrence Denney
ANNUAL REPORT
Idaho Secretary of State
PO Box 83720
Boise, ID 83720-0080
(208) 334-2301
Filing Fee: \$0.00

For Office Use Only

-FILED-

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Entity Name and Mailing Address:		
Entity Name:	IDAHO GOLD RESOURCES COMPANY, LLC	
The file number of this entity on the records of the Idaho Secretary of State is:	0000494660	
Address	PO BOX 429 DONNELLY, ID 83615-0429	
Entity Details:		
Entity Status	Active-Existing	
This entity is organized under the laws of:	IDAHO	
If applicable, the old file number of this entity on the records of the Idaho Secretary of State was:	W163022	
The registered agent on record is:		
Registered Agent	CORPORATION SERVICE COMPANY Commercial Registered Agent Physical Address 12550 W EXPLORER DR STE 100 BOISE, ID 83713 Mailing Address 12550 W EXPLORER DR STE 100 BOISE, ID 83713	
Agent or Address Change		
☐ Select if you are appointing a new agent.		
Limited Liability Company Managers and Members		
Name	Title	Business Address
☒ MIDAS GOLD CORP.	Member	890 999 W. HASTINGS ST. VANCOUVER BC V6C 2W2 CANADA
☒ Perpetua Resources Corp	Member	405 S 8TH STREET, STE. 201 BOISE, ID 83702
The annual report must be signed by an authorized signer of the entity.		
Job Title: Secretary		
Tanya Nelson		03/31/2021
Sign Here		Date

Page _____ of _____

**IDAHO DEPARTMENT OF WATER RESOURCES
APPLICATION FOR TRANSFER OF WATER RIGHT
PART 2A**

Current Water Right No.: 77-7141

Current Owner: IDAHO GOLD RESOURCES COMPANY LLC
Priority Date: 6/9/1981
Origin: Water Right
Status: Active
Basis: Decreed

Source

Tributary

GROUND WATER

<u>Beneficial Use</u>	<u>From To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
DOMESTIC	01/01 to 12/31	0.2 CFS	11.4 AF
	<u>Total Diversion</u>	0.2 CFS	11.4 AF

Location of Point(s) of Diversion

GROUND WATER SW1/4SW1/4 Sec. 11, Twp 18N, Rge 09E B.M.
VALLEY County

Place of Use

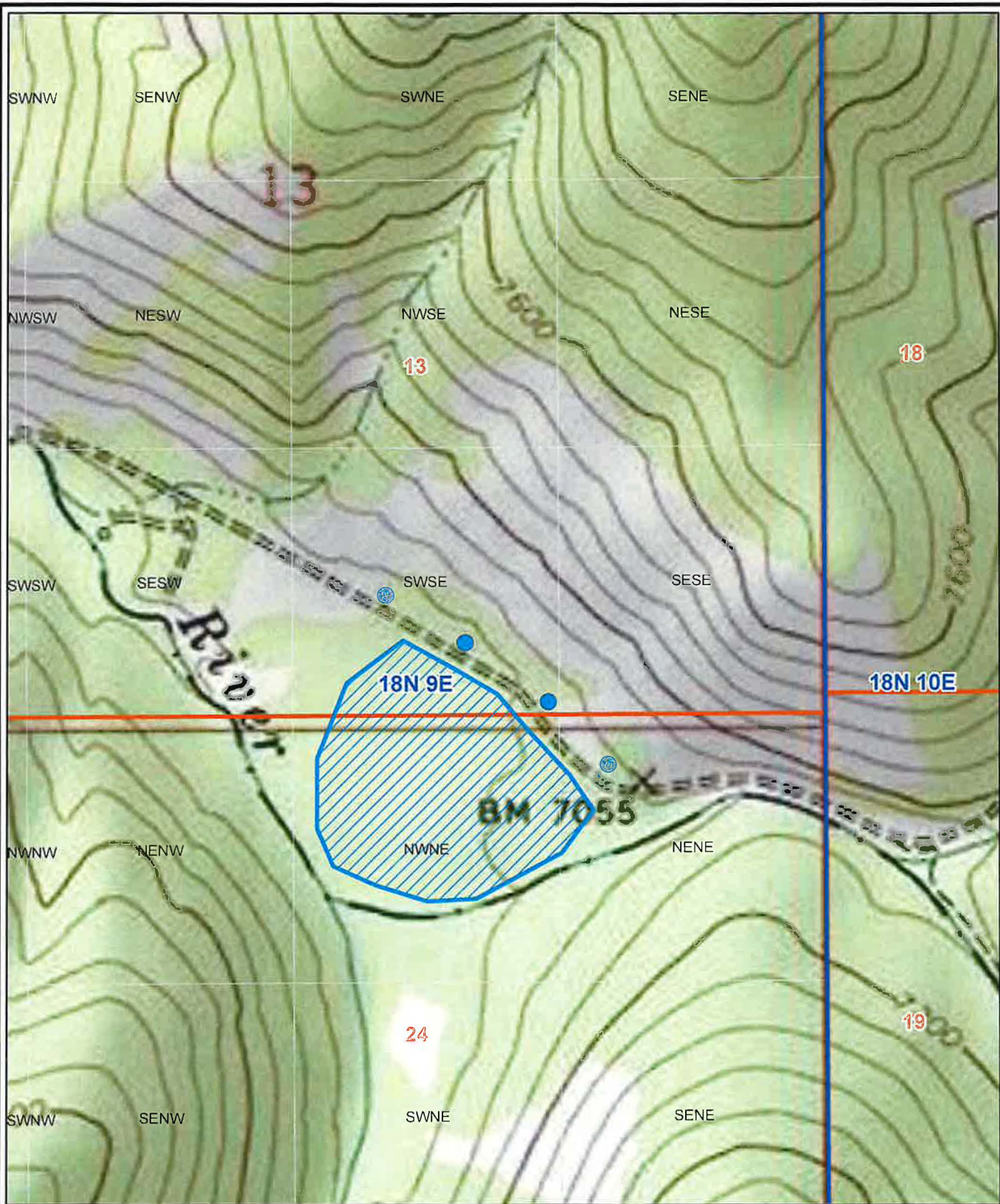
DOMESTIC Within VALLEY County

T18N R09E S11 NWSW T18N R09E S11 SWSW

Conditions of Approval:

1. T08 Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
2. 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
3. T07 The right holder shall accomplish the change authorized by this transfer within one year of the date of this approval.
4. Domestic use is for 19 homes.
5. T19 Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

Decreed Date: 10/13/2006



Proposed Point of Diversion



Proposed Place of Use

Attachment 7a - Stibnite Lodge



560

Feet



SPF WATER
ENGINEERING

85399

Attachment 1

Stibnite Gold Project Water Right Diversion Rate and Storage Volume Justification Memo May 7, 2021 draft

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Section 1: Introduction

This Technical Memorandum (TM) is an attachment to the water right permit application for the Stibnite Gold Project (SGP) and describes the information used to determine the industrial use diversion rate of 9.6 cubic feet per second (cfs) (Section 3), the diversion to storage rate of 9.6 cfs, and the 600 acre-feet storage volume (Section 4). This storage volume accounts for the one-time fill (428 acre-feet) of the Tailings Storage Facility (TSF) prior to the first year of mill operation and the annual stormwater runoff¹ volume detained on-site for water quality protection. Data and modeling used to determine industrial water demand and water management are described in the SGP Site Wide Water Balance Model (SWWB) Refined Modified Proposed Action (ModPRO2) Report (Perpetua Resources Idaho, Inc. [Perpetua Resources] 2021 in progress). The SWWB simulates the water balance based on the ModPRO2 Alternative (Midas Gold Idaho, Inc. 2020). The information contained in this TM is limited to the specific conditions, assumptions, and data used to determine the appropriate water right diversion rates and storage volume necessary to satisfy industrial use and stormwater detention needs to protect water quality².

Section 2: SGP Water Requirements

Industrial water requirements for SGP operations are mill demand for ore processing, dust suppression, drilling water, and dewatering (Figure 1, Table 1). Existing water rights (Table 2) are held for mining and domestic purposes, but only satisfy a small portion of the project demand. Applications for transfer of existing mining water rights 77-7122, 77-7285 and 77-7293 are submitted to change the places of use and points of diversion. Additional water for industrial use is requested in this water right application. The industrial water demand will be met by groundwater from pit dewatering wells and/or water supply wells, surface water from the East Fork of the South Fork of the Salmon River (EFSFSR), direct diversion of contact water (stormwater runoff or groundwater that has contacted mining features), and detained contact water. Detained water is contact water runoff in excess of instantaneous industrial demand or water treatment system capacity that will be detained on-site for water quality protection. This water will either be treated and discharged or beneficially used for industrial demand, thereby offsetting demand for groundwater and EFSFSR water. In addition, process water from the TSF supernatant pool will be reclaimed and reused. Industrial use and contact water detention are detailed in Sections 3 and 4, respectively.

¹ Contact water, stormwater, and stormwater runoff are interchangeable for purposes of this Memorandum and refer to water that has been in contact with mine features and has not entered a natural water course. Perpetua Resources is required to manage contact water by diversion, detention, treatment, and/or use in operations to prevent water quality impacts to the East Fork of the South Fork of the Salmon River and tributaries.

² Because of water quality restrictions, Perpetua Resources must detain contact water in stormwater ponds when runoff rates exceed the combined capacity to treat and discharge and/or utilize the water for industrial purposes. Perpetua Resources' site-wide water balance predicts month-end stormwater pond volume. This modeling is used to understand monthly stormwater accrual volume and to support the water rights application. Stormwater that is retained for more than 24 hours, whether beneficially used or treated and discharged, is considered stored water in this Mitigation Plan and the water right permit application.

detained water. Figure 1 shows the industrial use components and ore processing demand. The relative volumes of the water sources used in ore processing will fluctuate and are dependent on availability of reclaimed TSF water, contact water, and dewatering water during mine operations and are also dependent on water quality requirements. The time series is based on a historical meteorologic sequence and the mine plan sequence (Perpetua Resources 2021 in progress). The maximum monthly diversion rate is therefore coincidental to the mine phase and the annual meteorologic data applied.

Total ore processing water demand is represented by the green line in Figure 1, and is the rate required by the mill to process ore. The first-priority water source for the mill is reclaimed water from the TSF supernatant pool when available and does not require a water right³. Remaining water demand (make-up water) will then be supplied by groundwater from pit dewatering, direct diversion of contact water, and detained contact water (Figure 2). When mill demand is greater than the available supply from TSF reclaim water, contact water, and dewatering water, the remaining demand will be met with groundwater from groundwater supply wells and surface water from the EFSFSR.

Mill diversion demand is represented by the blue line in Figure 1, and is the total make-up water (non-TSF reclaim water) diversion rate that is required by the mill to process ore. The mill diversion demand sums pit dewatering groundwater, contact water, water supply well groundwater, and the EFSFSR.

Excess dewatering water is represented by the yellow line in Figure 1, and is the quantity of dewatering water that is in excess of the quantity that can be used to operate the mill. Water produced by dewatering is variable through the mine life and, at times, it is anticipated that more dewatering water will be produced than will be utilized in the mill. Perpetua Resources is seeking appropriation of the total estimated quantity of dewatering water as discussed below.

Drilling water demand is represented by the orange line in Figure 1, and is the estimated water required for well and exploration drilling.

Dust suppression demand is represented by the grey line in Figure 1, and is the estimated water required for dust control in pits, in-pit roads, and stockpiles.

Total diversion demand is represented by the black line in Figure 1, and is the sum of the make-up water demand (i.e., water demand is additional to TSF reclaim water), excess dewatering water, drilling water, and dust suppression. This is the total diversion demand that requires appropriation.

³ The reason that recycling of the supernatant pool water does not require a water right is because the reclaimed/recycled water originated as contact water, groundwater, and EFSFSR diverted under this proposed permit or existing water rights for industrial use and retained in control of the appropriator for continued industrial use. The recycled wastewater is not being appropriated but rather is being utilized under the original authorization for industrial use.

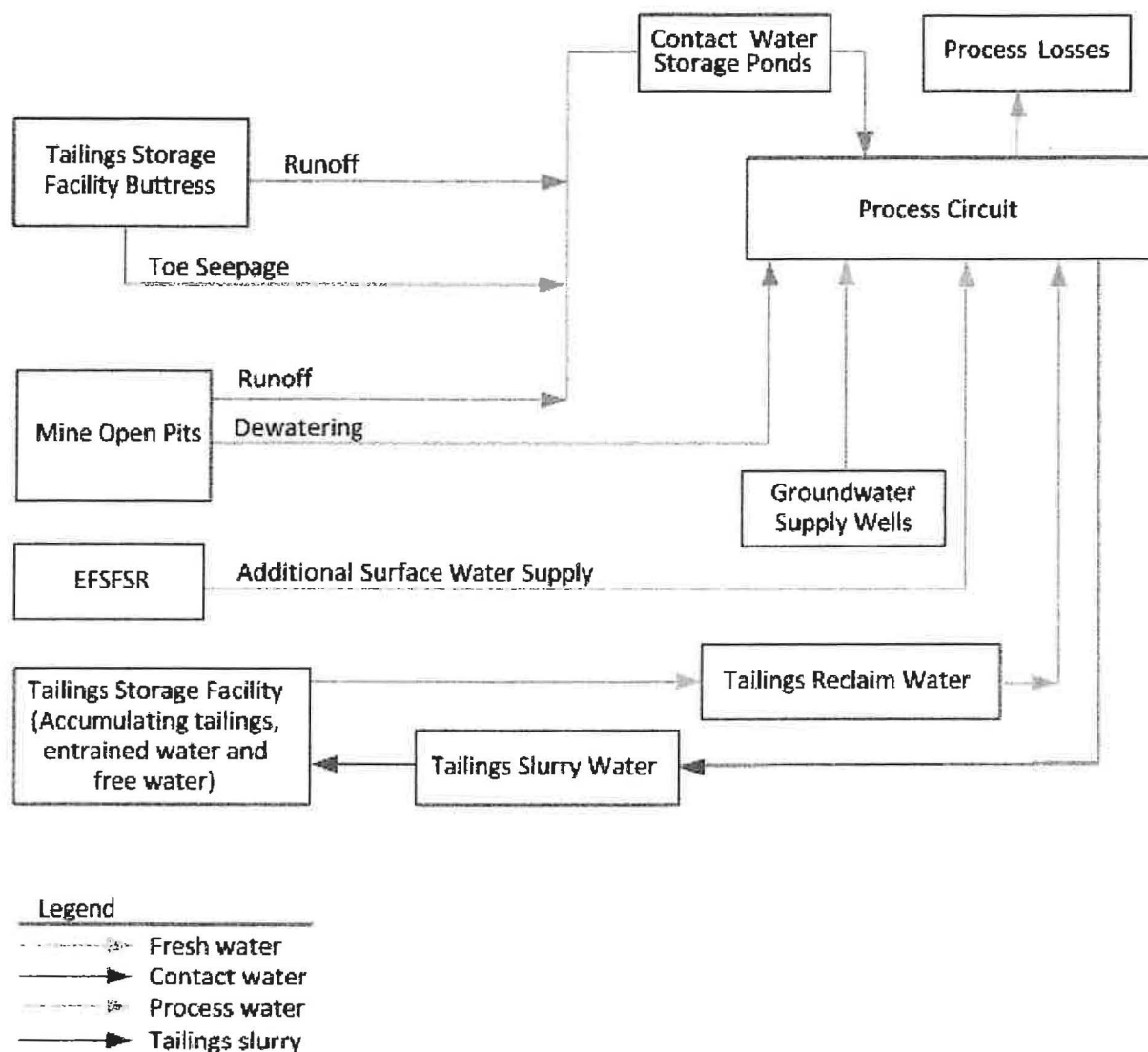


Figure 2. Process Circuit Flow Chart

Section 4: Contact Water Storage

The water right application requests authorization for 600 acre-feet of storage. This storage volume accounts for the estimated contact water detention volume (126 acre-feet)⁴ with an approximate 35 percent contingency and the one-time fill of the TSF starter pool (modeled to be 428 acre-feet) in the year prior to the start of operations (i.e., 428 acre-feet + (126 acre-feet x 135%) = 598 acre-feet, rounded to 600 acre-feet). Contact water will be detained in a system of stormwater detention ponds that are associated with mine facilities throughout the Project site. For the portion of the one-time fill that is not satisfied by contact water,

⁴ Value based on SWWB 75th percentile statistical output

Table 4. Annual Contact Water Detention Volume

Mine Year	Median Annual Detained Contact Water Volume (ac-ft) ^a	95 th Percentile Annual Detained Contact Water Volume (ac-ft) ^b
-1 ^c	81	233
1	102	236
2	101	242
3	192	267
4	210	237
5	194	206
6	123	250
7	208	216
8	187	228
9	188	213
10	179	211
11	118	200
12	177	194
13	0.2	149
14	0.5	103

Notes:^aValues based on SWWB 50th percentile statistical output from the 120-year climate record^bValues based on SWWB 95th percentile statistical output from the 120-year climate record^cInitial TSF fill (428 ac-ft) not included in annual volume because fill anticipated to be from groundwater, EFSFSR, and contact water. Fill will either occur at times when mitigation is not required or will be mitigated using available mitigation water right volume or one-time water bank rental volume**Abbreviations:**

ac-ft = acre-feet

EFSFSR = East Fork of the South Fork of the Salmon River

SWWB = site-wide water balance

TSF = tailings storage facility

Section 5: Summary

Perpetua Resources seeks a new water right appropriation of contact water runoff, groundwater, and surface water from the EFSFSR for industrial uses at the SGP to augment existing Perpetua Resources water rights. Key elements of the water right permit application include:

- Maximum diversion rate under new and existing water rights will be 9.6 cfs.
- Industrial uses will include ore processing, dust control, drilling, and dewatering.
- Contact water runoff volumes that exceed instantaneous industrial demand and water-treatment system capacity must be detained in storage ponds to protect surface water quality. Use of this water for industrial purposes offsets further diversion demand on groundwater and the EFSFSR.

Brown AND Caldwell

Attachment 2

**Mitigation Plan For Midas Gold Industrial Water
Right Application For Permit (Draft)**

Introduction

Perpetua Resources Idaho Inc. (Perpetua Resources) has applied for a water right permit to support uses at the Stibnite Gold Project (SGP or Project). The permit seeks authorization for both direct diversions and for storage. Water sources will be groundwater, East Fork of the South Fork of the Salmon River (EFSFSR), and stormwater runoff (contact water)¹.

Certain storage of water under the proposed permit may require mitigation to prevent impacts to the United States Forest Service (USFS) Wild and Scenic River water rights (WSWR) on the Salmon River. As a condition of the industrial use water right permit, Perpetua Resources is proposing to provide mitigation water to the Salmon River to offset impacts to the WSWR that may result from detaining water at the SGP. Mitigation will be provided through non-use of active irrigation water rights in the Salmon River basin. Perpetua Resources has entered into an agreement that secures a property with a water right portfolio that is anticipated to mitigate substantially more than the total volume of water that will be detained annually at the SGP. Further, non-use of those rights would exceed the volume of water that requires mitigation by an even greater amount.

This Mitigation Plan (Plan) provides information on the WSWR, the proposed SGP water right permit application, mitigation requirements, and the proposed mitigation. Two supporting memorandums are attached to this Plan. Both memorandums have been provided to the Idaho Department of Water Resources (IDWR) and the USFS. The *Water Right Mitigation Alternatives Considered for the Stibnite Gold Project* memorandum summarizes Perpetua Resources' evaluation of six mitigation strategies and identifies non-use of an irrigation water right as the preferred alternative because it is most practical, provides significant environmental benefits, and is easily administered. The *Water Rights Mitigation for the Stibnite Gold Project and Protection of Wild and Scenic River Values on the Salmon River* memorandum describes how the proposed mitigation plan enhances the wild and scenic character of the Salmon River that the USFS designation strives to protect.

Background

Wild and Scenic River Water Right. The WSWRs 75-13316 and 77-11941 held by the USFS on the Salmon River have flow targets that approximate the historical median flow rate in the Salmon River. The targets are based on average historical flows at the Shoup Gage in two-week time intervals (Figure 1). Because the flow targets are based on the median streamflow, on any given day there is approximately a 50 percent chance that there is insufficient flow to meet the instream flow specified in the WSWR.

The reach of the Salmon River subject to the WSWR extends upstream and downstream from the mouth of the South Fork Salmon River. As a result, stormwater diversion and detention at the SGP in the EFSFSR watershed could affect flow in a portion of the Wild and Scenic River reach that is downstream of the South Fork Salmon River. This potentially impacted river section is approximately 19 percent of the Salmon River Wild and Scenic reach.

¹ For purposes of this Memorandum contact water, contact water runoff, stormwater, and stormwater runoff are interchangeable and refer to water that has been in contact with mine features and has not entered a natural water course. Perpetua Resources is required to manage contact water runoff by diversion, detention, treatment, and/or use in operations to prevent water quality impacts to the East Fork South Fork Salmon River and tributaries.

The direct use of water sought by Perpetua Resources' industrial water right permit applications will utilize the subordination provisions of the WSWR. Whether Perpetua Resources' direct diversion of contact water before it reaches a natural stream channel, a required practice to protect water quality, requires a water right, and if so, whether the subsequent detention of stormwater runoff is within the subordination provisions of the WSWR are open questions. Nevertheless, for purposes of this Plan, Perpetua Resources is assuming that detention of stormwater runoff to protect water quality at the SGP may not be included in the WSWR subordination when flows in the Salmon River at Shoup are less than the WSWR, and therefore some form of mitigation may be required.

Modeling of Stormwater Diversion Rate and Detention Volumes. Perpetua Resources has modeled contact water runoff volumes for various storm events. The predicted total runoff volumes have been converted to 24-hour flow rates to estimate contact water flow rates to stormwater ponds. Modeling has predicted that 24-hour contact water flow rates of 27 cfs (one-year storm event) to 36 cfs (25-year storm event) could occur during springtime rain-on-snow storm events. The effective flow rates are 12 cfs less than the total rates because water management (i.e., a maximum of 12 cfs diversion to mill and water treatment)⁵ can offset the total modeled detained quantity.

Estimating contact water flow rates that require mitigation is not exact but is anticipated to be approximated by the range of the effective flow rates in Table 1. The effective contact water flow rate ranges from 15 cfs to 24 cfs for these spring runoff events. Those same storm events on bare (snow-free) ground (i.e., summer storms) yield stormwater flows of 5 cfs to 12 cfs and no storage is expected during summer/fall storm events because diversion to mill and water treatment capacity are greater than runoff rates.

Additional modeling predicts that attenuation of flow depletions between the mine site and the Salmon River, approximately 60 miles downstream, will be minimal (less than 3 percent attenuation) during springtime high flow conditions (i.e., flow impacts at the mine site are likely not substantially reduced moving downstream due to high stream-flow velocities). The modeling suggests that more attenuation occurs during low-flow conditions, but water management can already fully offset the need to store stormwater runoff at such times.

Table 1. Diversion Rate Estimates

Storm Event	Storm Event Average Runoff Rate (cfs)		Effective Storm Event Runoff Rate (cfs) ¹	
	No Snow	Average Snow	No Snow	Average Snow
1 Year	5	27	0	15
10 Year	10	34	0	22
25 Year	12	36	0	24

⁵ Operational use of the full 12 cfs of stormwater would be a limited operational strategy to reduce the stormwater detention rate that would be employed only under certain circumstances. This is an example of strategies potentially available to Perpetua Resources to reduce impacts to flows in the Salmon River.

obligation by the existing water rights 77-7122 and 77-7285 to which the WSWRs are subordinate. Nevertheless, the non-irrigation season months (November through March) are a challenge to mitigate by non-diversion of irrigation water rights because the season of use for those rights is restricted to April through October and all water rights identified by Perpetua Resources that are available for mitigation purposes have been irrigation water rights.

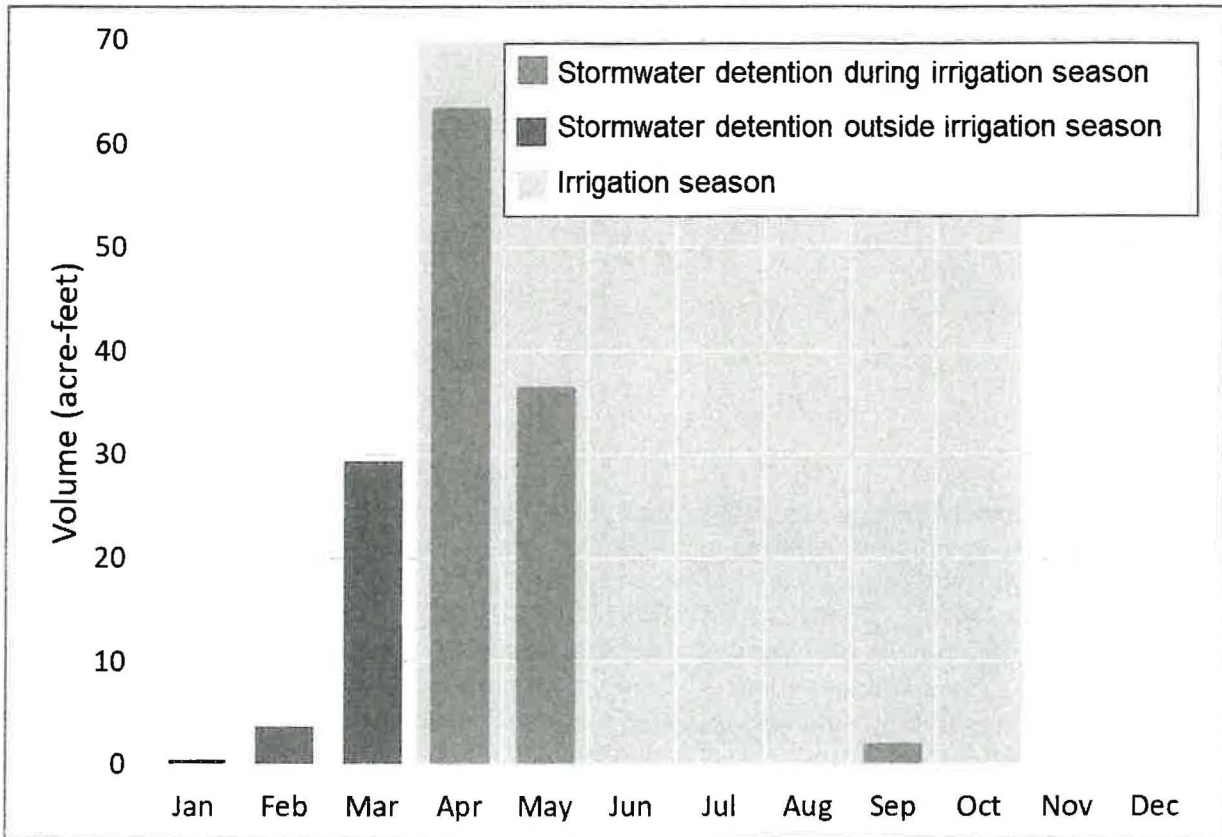


Figure 2. Median Monthly Stormwater Detention – 50th Percentile Scenario

Stormwater detention volume is a function of meteorological conditions (temperature, precipitation quantity, and form), mine operations, and mine phase. Mine operations affect stormwater detention volume by the quantity of contact water that can be used in the mill or treated in a given month. The mine phase affects surface area of mine features that can interact with stormwater. The meteorological conditions affect the quantity of water available to become runoff. Figure 3 shows the stormwater accrual monthly variability in the 12 years of active mining. The lower boundary (25th percentile) of the bars correspond to times of lower stormwater accrual that is partially driven by meteoric conditions that produce low available water. Presumably, these meteoric conditions correspond to times of lower streamflow at the Shoup gage that may be less than the instream flow water rights. While out-of-season detention is still anticipated at the 25th percentile, associated volumes are very small and are generally near zero with the exception of February (less than 2 acre-feet) and March (approximately 11 acre-feet). Conversely, monthly stormwater detention at the upper boundary partially correspond to times of higher water availability when the streamflow at Shoup gage may also be above average conditions.

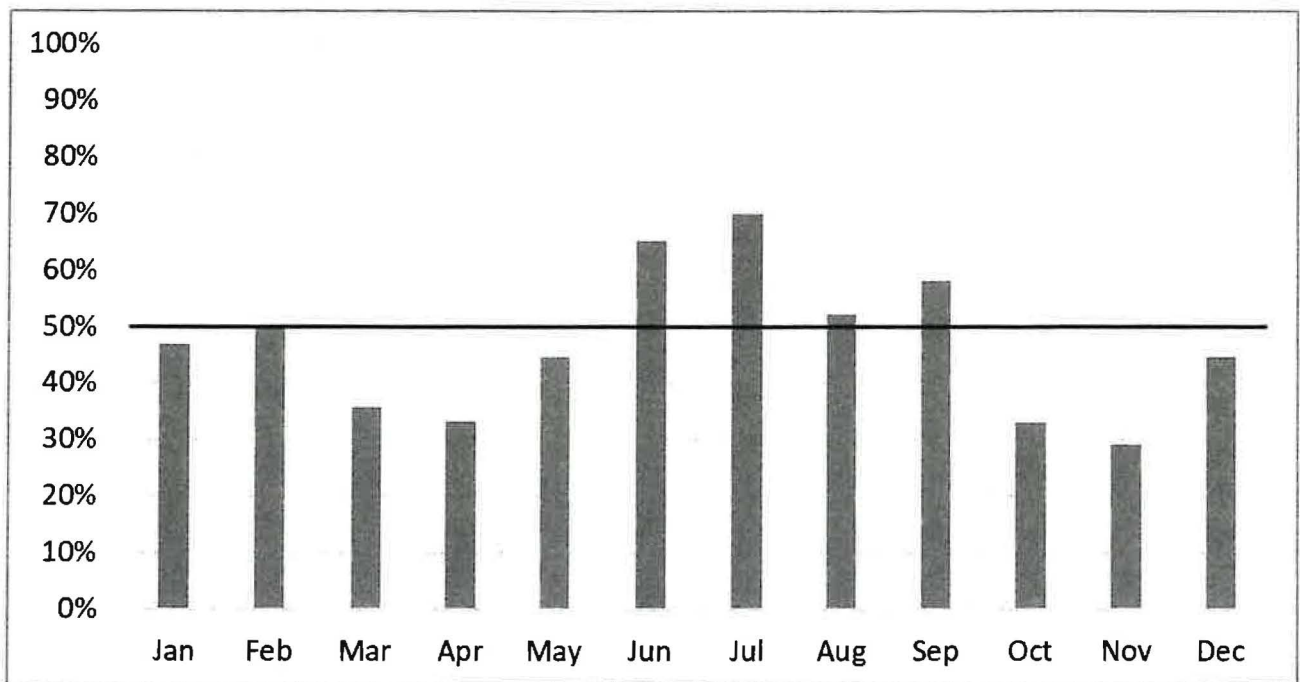


Figure 4. Frequency of Days Streamflow at Shoup Gage is below the WSWR (2004-2018)

Mitigation Plan

Detention of stormwater is necessary to protect water quality and offsets diversion demand from groundwater and the EFSFSR. Perpetua Resources proposes to mitigate for out-of-priority stormwater detention at the mine site by non-use of existing irrigation water rights with places of use and points of diversion upstream of the Wild and Scenic River reach. Non-diversion of existing irrigation water rights will increase streamflow in the Wild and Scenic River reach and provide mitigation for stormwater detention at the SGP.

Perpetua Resources has secured the Ronald and Corrine Jones property, near Challis, Idaho, and associated water rights through an option to purchase agreement (*Figure 5, Figure 6*). The Ronald and Corrine Jones property borders the Salmon River downstream from Challis and is a good candidate for mitigation purposes because the appurtenant water right portfolio (1) has a high diversion rate per acre, (2) exceeds the needed consumptive volume, (3) is on the Salmon River upstream of the Wild and Scenic River reach, and (4) is deliverable for the entire irrigation season beginning April 1. An additional benefit is that non-use of the right will benefit fish passage in Morgan Creek which is an important stream for anadromous fish and also flows through the property. Being located entirely upstream of the Wild and Scenic reach, mitigation at the property would increase streamflow throughout the Wild and Scenic reach and a significant length of intervening reach from below Challis to below Salmon, while Perpetua Resources' water detention, on a tributary to the South Fork Salmon River, would only affect the lower 19 percent of the Wild and Scenic reach.

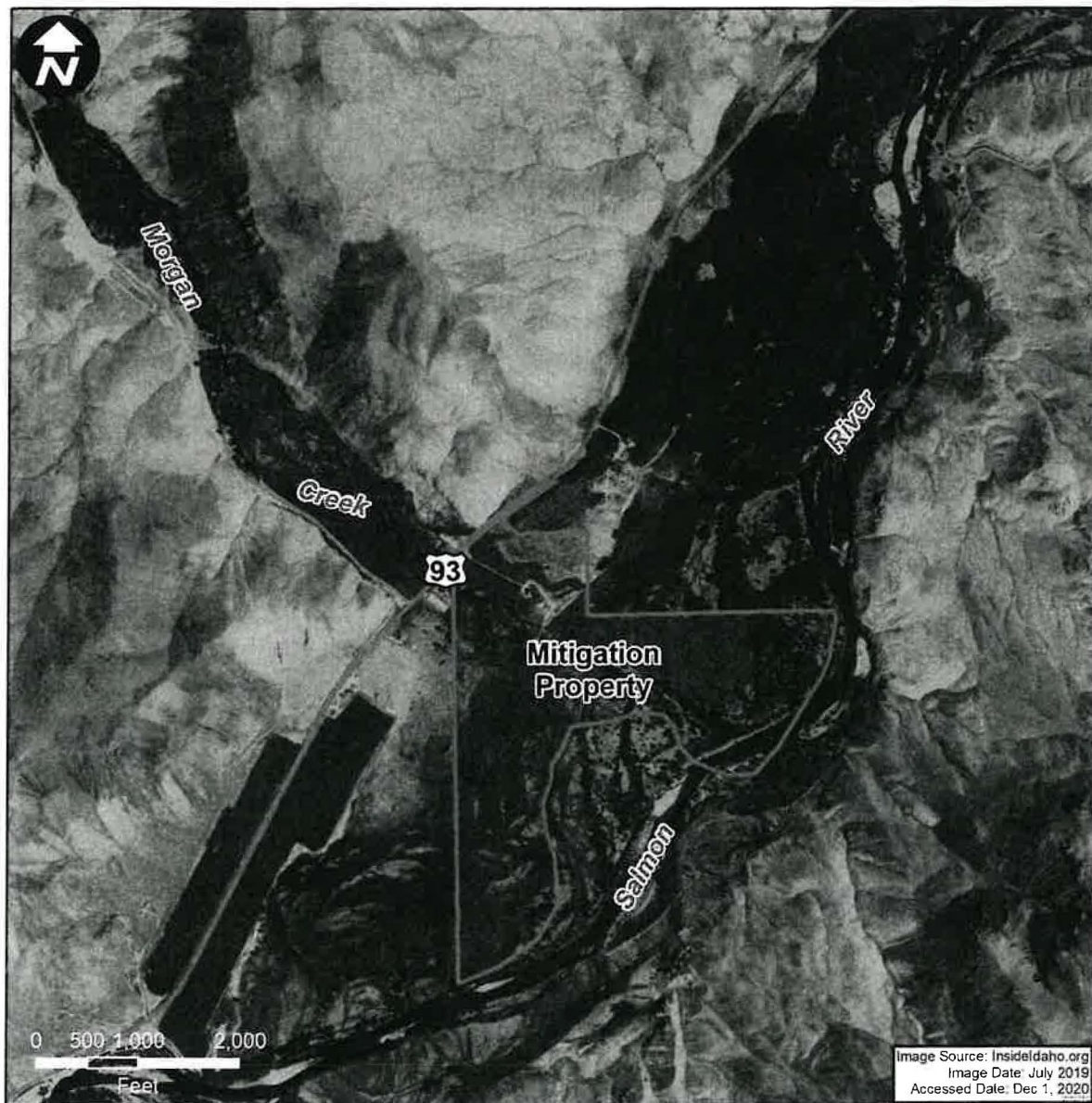


Figure 6. Mitigation Property Vicinity Map

The Jones property has irrigation water rights authorizing a diversion rate of 10.75 cfs for irrigation of 138.8 acres (Table 3). The consumptive mitigation value for these water rights is 2.5 acre-feet per acre, for a total mitigation volume of 347 acre-feet (138.8 acres x 2.5 acre-feet/acre) annually. This is more than three times the anticipated needed annual mitigation volume for stormwater detention at the SGP. Under this Mitigation Plan, the Jones property water would remain undiverted and allowed to flow down the Salmon River through the Wild and Scenic River reach.

The volume of first-year fill of the TSF will exceed the available mitigation water right volume. However, filling from groundwater or the EFSFSR can be accomplished at times when Salmon River flows exceed the minimum streamflow target and do not require mitigation. As a result, TSF filling can be actively managed to stay within the available

The mitigation volume under the Jones water rights is more than adequate to offset the peak annual contact water volume, and therefore the volume requiring mitigation, that will be diverted under reasonably expected hydrologic conditions. The diversion rate, however, may be less than the peak depletion rate that requires mitigation on any given day (Table 1). In addition, as an irrigation water right, mitigation is provided during the irrigation season only, while contact water diversion and detention to protect water quality occurs both during and outside of the irrigation season. These minor deficiencies are offset by the significant benefits of the high rate of continuous mitigation during the irrigation season.

Mitigation by non-use of an irrigation water right is the most practical method to satisfy Perpetua Resources' potential mitigation obligation. Mitigation by non-use is the preferred method because of the clear advantages over other considered options:

1. **No Adverse Environmental Impact.** Mitigation by non-use has no detrimental environmental consequences, does not incur environmental disturbance, and does not require potential additional National Environmental Protection Act (NEPA) analysis.
2. **Anadromous Fish Benefit.** Streamflow augmentation and benefits to anadromous fish passage are significant with the proposed mitigation strategy. These benefits compensate for the limited occurrence of out-of-season stormwater capture and retention and/or stormwater diversion at rates greater than the mitigation flow rate during times when the WSWR is not met. The non-diversion will improve fish habitat and passage on Morgan Creek, an important anadromous fish watershed, and reduce diversions from the Salmon River in a reach that is also important to anadromous fish.
3. **Practical and Feasible.** The proposed mitigation is the most practical and feasible approach identified. Perpetua Resources, acting on the guidance of the July 27, 2020 IDWR letter, evaluated six mitigation alternatives that are described in the *Water Right Mitigation Alternatives Considered for the Stibnite Gold Project* memorandum (attached; delivered to IDWR and USFS, January 21, 2021). It was demonstrated that it is impractical to develop a mitigation plan that can offset all potential stormwater diversion and detention in real-time. It is also impractical, and indeed unprecedented, for a remote mountainous mine site to have water treatment capacity to adequately treat and discharge stormwater within 24 hours during a significant runoff event. Further, detaining contact water and utilizing it for industrial purposes offsets additional groundwater and surface water diversion otherwise needed to meet industrial demand. Acquisition of an active water right for mitigation is economically and operationally practical, provides continuous instream flows even when mitigation is not required, mitigates more water volume than anticipated to be detained at a reasonable flow rate during the irrigation season, and is easily administered.
4. **No Administrative Burden.** Continuous mitigation throughout the irrigation season does not place an administrative burden on the water district, IDWR, or USFS.
5. **Mitigation Control.** Perpetua Resources has control over the mitigation source. There is no lease, rental or further negotiation required.
6. **Continuous Mitigation Benefit.** Mitigation is anticipated to be required for a limited duration, and only at times of less than average streamflow at the Shoup gauge. It is likely that during high runoff events at the mine, the flow in the Salmon River

Table 4. Annual Stormwater Detention Volume and Excess Mitigation Provided

Mine Year (MY)	Annual Volume (acre-feet)				Over-Mitigation Percent
	Accrued	Mitigation Required (est) ¹	Mitigation Provided	Over-Mitigation Provided	
MY -1 ²	81	40	347	307	760%
MY 1	102	51	347	296	578%
MY 2	101	51	347	296	587%
MY 3	192	96	347	251	261%
MY 4	210	105	347	242	231%
MY 5	194	97	347	250	258%
MY 6	123	61	347	286	466%
MY 7	208	104	347	243	234%
MY 8	187	94	347	253	271%
MY 9	188	94	347	253	270%
MY 10	179	90	347	257	287%
MY 11	118	59	347	288	487%
MY 12	177	89	347	258	292%
Total	2,060	1,030	4,511	3,481	338%

Notes:

¹ Required mitigation volume estimated at 50 percent of annual stormwater accrual based on WSWR (Figure 1)

² Initial TSF fill (428 acre-feet) not included in annual volume because fill anticipated to be from groundwater, EFSFSR, and contact water. Fill will either occur at times when mitigation is not required or will be mitigated using available mitigation water right volume or one-time water bank rental volume.

Abbreviations:

EFSFSR = East Fork of the South Fork of the Salmon River

est = estimated

MY = mine year

TSF = tailings storage facility

WSWR = Wild and Scenic Water Right

10. **Not Fully Consumptive.** Some of the runoff that is detained is not consumed. A portion can be returned to the stream through the water treatment plant a short time after detention.
11. **Imperceptible Impact.** The flow impacts to the Salmon River resulting from SGP stormwater detention are anticipated to be imperceptible. Typical Salmon River flows at the mouth of the South Fork Salmon River during the March through May period when stormwater detention occurs range from 4,000 cfs to 40,000 cfs, and flows are



Technical Memorandum

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Prepared for: Perpetua Resources Idaho, Inc. (Perpetua Resources)

Project Title: Stibnite Gold Project

Project No.: 156123-002

Technical Memorandum

Subject: SGP Water Right Diversion Rate and Storage Volume

Date: October 8, 2021

To: Perpetua Resources

From: Brown and Caldwell

Copy to: SPF Water Engineering, LLC.

Prepared by: 
Dan Stanaway, Brown and Caldwell

Reviewed by: 
Terry Scanlan, PE, PG

Limitations:

This document was prepared solely for Perpetua Resources in accordance with professional standards at the time the services were performed and in accordance with the contract between Perpetua Resources and Brown and Caldwell dated January 1, 2021. This document is governed by the specific scope of work authorized by Perpetua Resources; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Perpetua Resources and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

85399

List of Abbreviations

ac-ft	acre-feet
cfs	cubic feet per second
EFSFSR	East Fork of the South Fork of the Salmon River
gpm	gallon per minute
IDWR	Idaho Department of Water Resources
ModPRO2	refined Modified Plan of Restoration and Operations
Perpetua Resources	Perpetua Resources Idaho, Inc.
SGP	Stibnite Gold Project
SWWB	Site-wide Water Balance [model]
TM	technical memorandum
TSF	Tailings Storage Facility
WSWR	Wild and Scenic Water Right

Table 1. Operations Industrial Water Requirements^a

Use	Peak Rate (cfs)	Estimated Average Annual Volume (acre-feet) ^e
Mill Demand	9.7	TSF Reclaim (average): 4,832 Mill Diversion Demand (average): 1,438
Mill Diversion Demand ^b	4.5	1,438
Dust Control	0.7	186
Drilling Water	0.1	40
Excess Dewatering Water ^c	4.3	608
Total Diversion Demand ^d	9.6	2,272

Notes:

^aValues based on SWWB 14-year climate scenario (2004 to 2017) used in the predictive modeling as the "average climate scenario"

^bMill diversion demand is water needed in addition to the TSF reclaim water

^cDewatering water in excess of dewatering water used for industrial water supply. This water is treated and discharged.

^dTotal Diversion Demand is the sum of the mill diversion demand, dust control, drilling water, and dewatering water

^eVolumes shown are the actual volumetric requirement for each use estimated by the SWWB model

Abbreviations:

cfs = cubic feet per second

SWWB = site-wide water balance

TSF = tailings storage facility

Table 2. Current Water Rights

Water Right	Current Owner	Source	Beneficial Use(s)	Diversion Rate (cfs)	Annual Volume (acre-feet)
77-7122	Idaho Gold Resources Company	East Fork South Fork Salmon River	Diversion to Storage Mining Storage Mining from Storage	0.33	7.1
77-7141	Idaho Gold Resources Company	Groundwater	Domestic	0.20	11.4
77-7285	Stibnite Gold Company	Groundwater	Mining Diversion to Storage Mining Storage Mining from Storage	0.50	30.2
77-7293	Stibnite Gold Company	Unnamed Stream (Hennessy Creek)	Mining	0.25	20

Abbreviations:

cfs = cubic feet per second

Section 3: Industrial Use

Peak diversion rate for industrial uses is estimated to sum to approximately 9.6 cfs and is primarily for ore processing (Table 1). Water used in ore processing will be supplied from multiple sources and the water right permit application seeks to authorize water diversion from groundwater, EFSFSR, contact water, and detained water. Figure 1 shows the industrial use components and ore processing demand. The relative

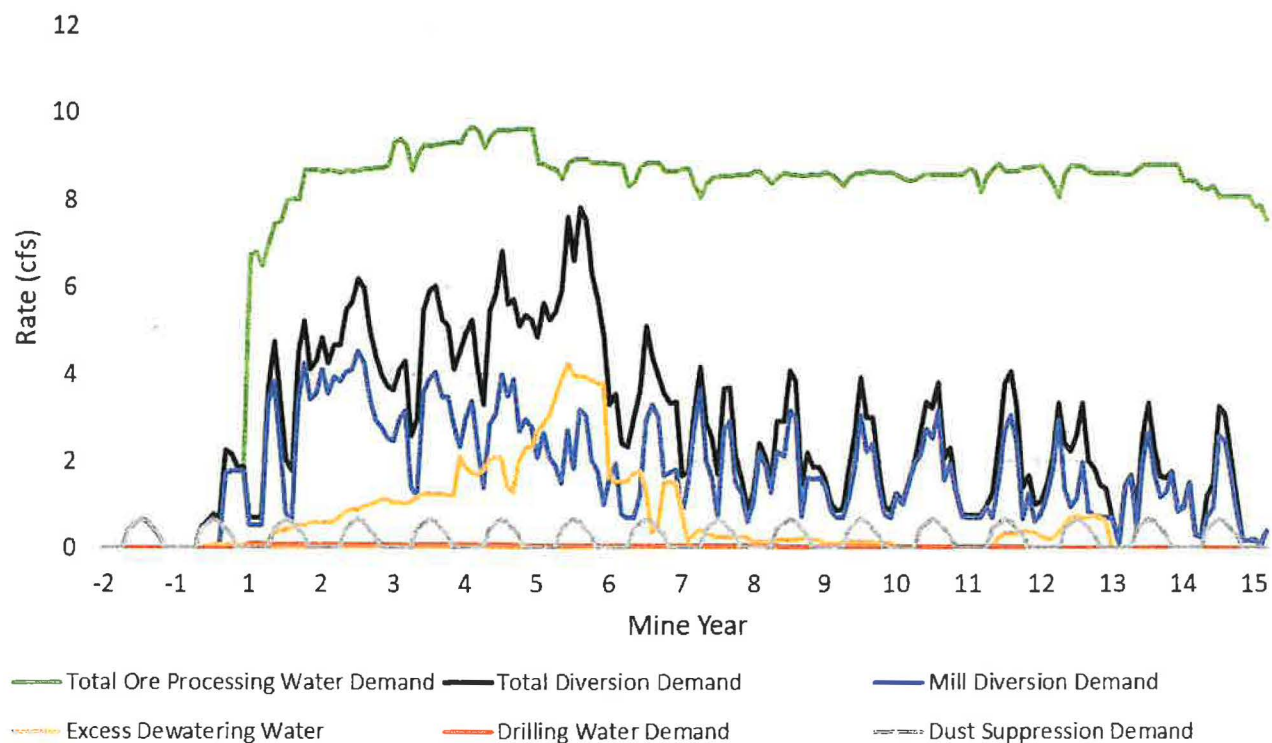


Figure 1. SGP Water Requirements

The industrial use diversion rate requested in the water rights application (9.6 cfs) is based on the maximum estimated rates for mill diversion demand rate (4.5 cfs), excess dewatering rate (4.3 cfs), dust suppression rate (0.7 cfs), and drilling water rate (0.11 cfs) (Table 1). The maximum values for these diversion rates are not modeled to coincide; the maximum mill demand is modeled to occur in mine year 2 and the maximum dewatering is modeled to occur in mine year 5. While not modeled to coincide, estimated mill diversion demand is coincidental to the climate sequence used in the model, quantity of TSF reclaim water, and ore processing rate. Peak mill diversion demand may not occur in the year modeled, but it is not expected to be more than the peak estimated rate. Likewise, monthly dewatering estimates are based on currently modeled pit dewatering phasing and modeled dewatering rates that may adjust based on Project needs. Peak drilling water demand is minimal and occurs in year 1 declining linearly to zero in year 15 and dust suppression demand is a cycle with an annual peak of approximately 0.7 cfs.

The water right permit application seeks authorization for the total quantity of dewatering water that is anticipated to be produced. Pursuing water right authorization for all of the dewatering water is the preferred option of the three alternatives presented by the Idaho Department of Water Resources (IDWR) in a letter received July 27, 2020. Water right authorization of all dewatering water is the most secure approach to ensure adequate water supply and satisfy fluctuating industrial demand for dewatering water amid a variable dewatering rate. In the July 27, 2020 letter, IDWR states the Department recognizes that dewatering is essential to mining and has recognized dewatering as a beneficial use in previous water right permits. The excess dewatering rate is estimated by subtracting the monthly dewatering water used for ore processing from the monthly total dewatering water produced. Dewatering supply, in conjunction with TSF reclaim water and contact water, can be at times insufficient to satisfy industrial demand. This unmet industrial demand is satisfied by groundwater from the groundwater supply wells and surface water from the EFSFSR water.

For the portion of the one-time fill that is not satisfied by contact water, the water right application also seeks authorization for diversion to storage from groundwater and EFSFSR for the fill of TSF starter pool. Contact water diversion and detention is necessary to protect surface water quality from direct discharge of water that is above applicable surface water discharge criteria. Detention is necessary when contact water quantity is greater than the combination of treatment capacity, evaporation capacity, and industrial demand. Detained water will be used to supply the industrial water demand, or the water will be treated and discharged.

Contact water diversion to protect water quality and subsequent detention may not be within the subordination clause of the Wild and Scenic River instream water rights (WSWR) 75-13316 and 77-11941 and, as such, may require mitigation when the WSWR is not met. Perpetua Resources is proposing a mitigation strategy of non-use of irrigation water rights that is described in the accompanying Mitigation Plan. The Mitigation Plan and attachments detail the proposed mitigation, benefits of the proposed mitigation, evaluation of other mitigation options, and how the proposed mitigation strategy enhances the Wild and Scenic character of the Salmon River.

Detained contact water volumes were estimated by the SWWB model (Perpetua Resources 2021 in progress). The SWWB outputs system-wide contact water pond volume estimates at a monthly timestep. Annual accrued contact water volume is estimated by calculating the monthly change in used pond volume and summing the monthly differences for a year. Contact water accrual starts with the pond volume from the previous December as assumed carry-over to begin the water right accrual. Values calculated are subject to revision and are generated with these assumptions:

1. Water treatment rates shown in Table 3
2. Groundwater from dewatering that is not used to satisfy industrial demand is treated and discharged but not stored
3. The total storage volume at the site will be available to detain contact water generated from any source at the site

Table 3. Water Treatment Plant Capacity

Mine Year Beginning	Water Treatment Plant Capacity (gpm)
-2	300
1	1,000
4	2,000
7	1,000

Abbreviations:

gpm = gallon per minute

Median and 95th percentile predicted annual accrued contact water volume is shown in Table 4 (Perpetua Resources 2021 in progress). Detained volume variability results from climatic variability in the SWWB model, industrial demand variability, assumed treatment and/or evaporation capacities, and progression of mine development (i.e., changes in exposed mine surface area during mine life). The water right application requests authorization for 600 acre-feet of storage. This storage volume is based on mine year -1 when the TSF starter pool is developed (estimated 428 acre-feet required) and the estimated annual volume of detained contact water in that year (126 acre-feet at the 75th percentile) with an approximate 35 percent contingency applied to contact water detention. The contingency is applied to account for modeling and climatic uncertainties.

- The application seeks a maximum annual storage volume of 600 acre-feet. This volume includes a one-time 428-acre-foot fill of the TSF during mine year -1 along with contact water storage during that year. In all other years, storage volume will consist of contact water only, and is anticipated to be 210 acre-feet or less.
- The United States Forest Service holds a WSWR for the Salmon River. The proposed direct diversions of water for industrial uses are anticipated to fall within the subordination provisions of the WSWR, but proposed storage of water may not be subordinated by the WSWR. Perpetua Resources has secured irrigation water rights as mitigation for storage impacts to the WSWR.

A Mitigation Plan is included with the permit application. Attached to the Mitigation Plan are two supporting documents that describe 1) Perpetua Resources' evaluation of six mitigation alternatives and identifying non-use of an irrigation water right as most practical mitigation strategy that provides significant environmental benefits and 2) a description of how the proposed mitigation plan enhances the wild and scenic character of the Salmon River.

References

Midas Gold Idaho, Inc., 2020. Stibnite Gold Project, Refined Proposed Action ModPRO2, December.

Perpetua Resources Idaho Inc., 2021. Stibnite Gold Project Site-Wide Water Balance Model Refined Modified Proposed Action (ModPRO2) Report, In progress.

Introduction

Perpetua Resources Idaho Inc. (Perpetua Resources) has applied for a water right permit to support uses at the Stibnite Gold Project (SGP or Project). The permit seeks authorization for both direct diversions and for storage. Water sources will be groundwater, the East Fork of the South Fork of the Salmon River (EFSFSR), and stormwater runoff (contact water)¹.

Certain storage of water under the proposed permit may require mitigation to prevent impacts to the United States Forest Service (USFS) Wild and Scenic River water rights (WSWR) on the Salmon River. As a condition of the industrial use water right permit, Perpetua Resources is proposing to provide mitigation water to the Salmon River to offset impacts to the WSWR that may result from detaining water at the SGP. Mitigation will be provided through non-use of active irrigation water rights in the Salmon River basin. Perpetua Resources has entered into an agreement that secures a property with a water right portfolio that is anticipated to mitigate substantially more than the total volume of water that will be detained annually at the SGP. Further, non-use of those rights would exceed the volume of water that requires mitigation by an even greater amount.

This Mitigation Plan (Plan) provides information on the WSWR, the proposed SGP water right permit application, mitigation requirements, and the proposed mitigation. Two supporting memorandums are attached to this Plan. Both memorandums have been provided to the Idaho Department of Water Resources (IDWR) and the USFS. The *Water Right Mitigation Alternatives Considered for the Stibnite Gold Project* memorandum summarizes Perpetua Resources' evaluation of six mitigation strategies and identifies non-use of an irrigation water right as the preferred alternative because it is most practical, provides significant environmental benefits, and is easily administered. The *Water Rights Mitigation for the Stibnite Gold Project and Protection of Wild and Scenic River Values on the Salmon River* memorandum describes how the proposed mitigation plan enhances the wild and scenic character of the Salmon River that the USFS designation strives to protect.

Background

Wild and Scenic River Water Right. The WSWRs 75-13316 and 77-11941 held by the USFS on the Salmon River have flow targets that approximate the historical median flow rate in the Salmon River. The targets are based on average historical flows at the Shoup Gage in two-week time intervals (Figure 1). Because the flow targets are based on the median streamflow, on any given day there is approximately a 50 percent chance that there is insufficient flow to meet the instream flow specified in the WSWR.

The reach of the Salmon River subject to the WSWR extends upstream and downstream from the mouth of the South Fork Salmon River. As a result, stormwater diversion and detention at the SGP in the EFSFSR watershed could affect flow in a portion of the Wild and Scenic River reach that is downstream of the South Fork Salmon River. This potentially impacted river section is approximately 19 percent of the Salmon River Wild and Scenic reach.

¹ For purposes of this Memorandum contact water, contact water runoff, stormwater, and stormwater runoff are interchangeable and refer to water that has been in contact with mine features and has not entered a natural water course. Perpetua Resources is required to manage contact water runoff by diversion, detention, treatment, and/or use in operations to prevent water quality impacts to the East Fork South Fork Salmon River and tributaries.

The direct use of water sought by Perpetua Resources' industrial water right permit applications will utilize the subordination provisions of the WSWR. Whether Perpetua Resources' direct diversion of contact water before it reaches a natural stream channel, a required practice to protect water quality, requires a water right, and if so, whether the subsequent detention of stormwater runoff is within the subordination provisions of the WSWR are open questions. Nevertheless, for purposes of this Plan, Perpetua Resources is assuming that detention of stormwater runoff to protect water quality at the SGP may not be included in the WSWR subordination when flows in the Salmon River at Shoup are less than the WSWR, and therefore some form of mitigation may be required.

Modeling of Stormwater Diversion Rate and Detention Volumes. Perpetua Resources has modeled contact water runoff volumes for various storm events. The predicted total runoff volumes have been converted to 24-hour flow rates to estimate contact water flow rates to stormwater ponds. Modeling has predicted that 24-hour contact water flow rates of 27 cfs (one-year storm event) to 36 cfs (25-year storm event) could occur during springtime rain-on-snow storm events. The effective flow rates are 12 cfs less than the total rates because water management (i.e., a maximum of 12 cfs diversion to mill and water treatment)⁵ can offset the total modeled detained quantity.

Estimating contact water flow rates that require mitigation is not exact but is anticipated to be approximated by the range of the effective flow rates in Table 1. The effective contact water flow rate ranges from 15 cfs to 24 cfs for these spring runoff events. Those same storm events on bare (snow-free) ground (i.e., summer storms) yield stormwater flows of 5 cfs to 12 cfs and no storage is expected during summer/fall storm events because diversion to mill and water treatment capacity are greater than runoff rates.

Additional modeling predicts that attenuation of flow depletions between the mine site and the Salmon River, approximately 60 miles downstream, will be minimal (less than 3 percent attenuation) during springtime high flow conditions (i.e., flow impacts at the mine site are likely not substantially reduced moving downstream due to high stream-flow velocities). The modeling suggests that more attenuation occurs during low-flow conditions, but water management can already fully offset the need to store stormwater runoff at such times.

⁵ Operational use of the full 12 cfs of stormwater would be a limited operational strategy to reduce the stormwater detention rate that would be employed only under certain circumstances. This is an example of strategies potentially available to Perpetua Resources to reduce impacts to flows in the Salmon River.

Figure 2 shows the median monthly stormwater volume accrual during the 12-year active mining period⁶. Contact water diversions occur primarily in March, April, and May during high runoff and high streamflow periods, and the modeling shows the potential to divert smaller volumes of contact water in September through February. Some contact water detention that occurs November to March can be authorized without incurring a mitigation obligation by the existing water rights 77-7122 and 77-7285 to which the WSWRs are subordinate. Nevertheless, the non-irrigation season months (November through March) are a challenge to mitigate by non-diversion of irrigation water rights because the season of use for those rights is restricted to April through October and all water rights identified by Perpetua Resources that are available for mitigation purposes have been irrigation water rights.

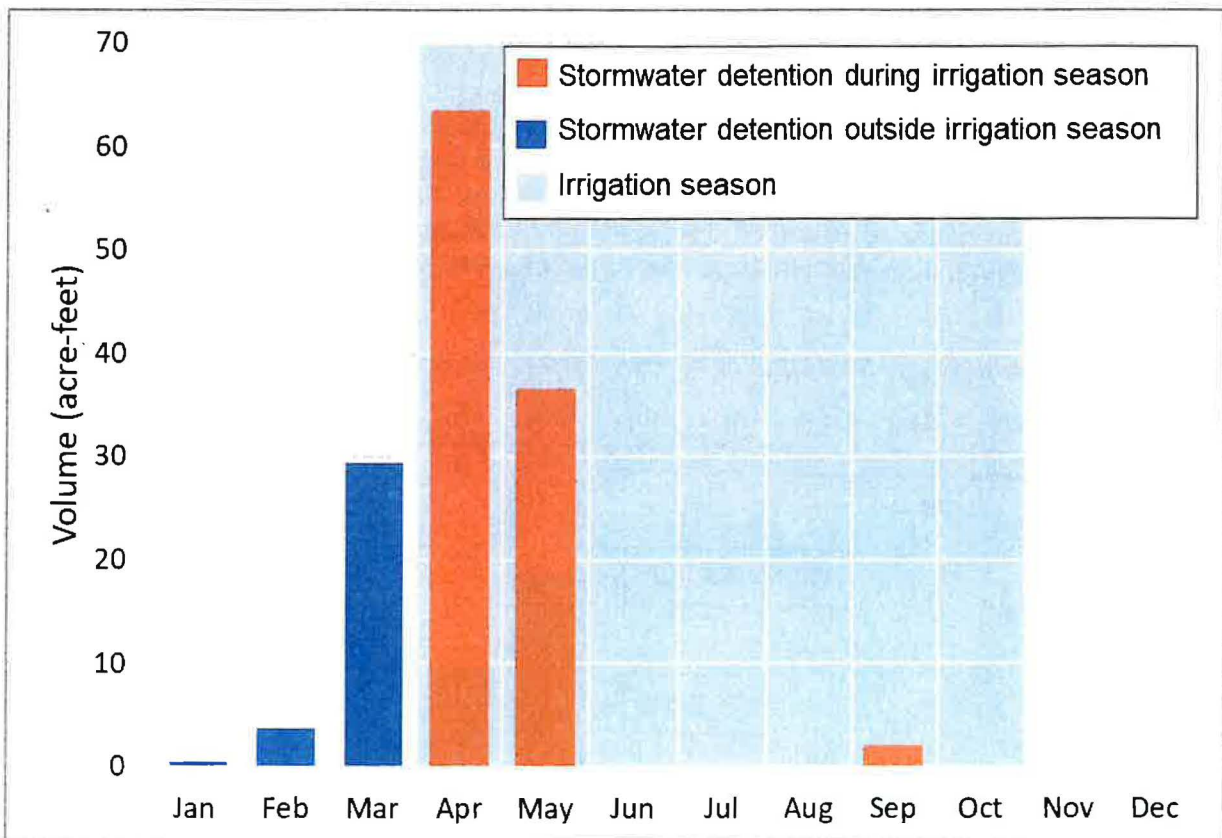


Figure 2. Median Monthly Stormwater Detention – 50th Percentile Scenario

Figure 3 shows the stormwater accrual monthly variability in the 12 years

⁶ Mill operations continue for an additional 2.25 years to process ore stockpiles, however, contact water detention during these periods is minimal, estimated at less than 1 acre-foot annually, and values were not included in calculation of median monthly stormwater detention.

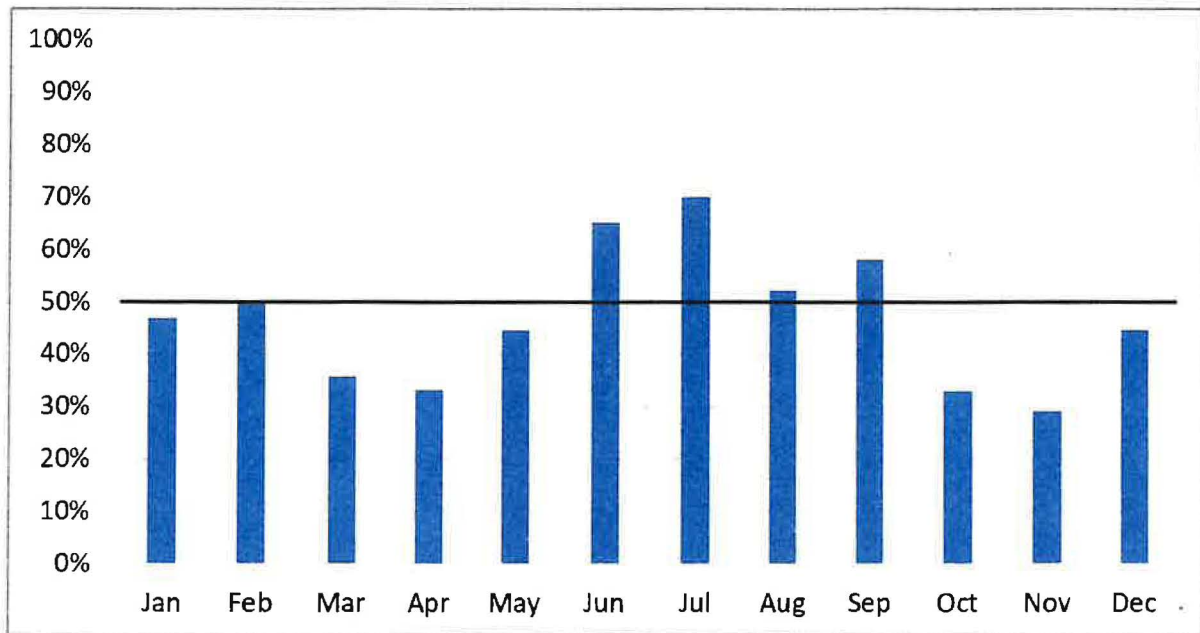
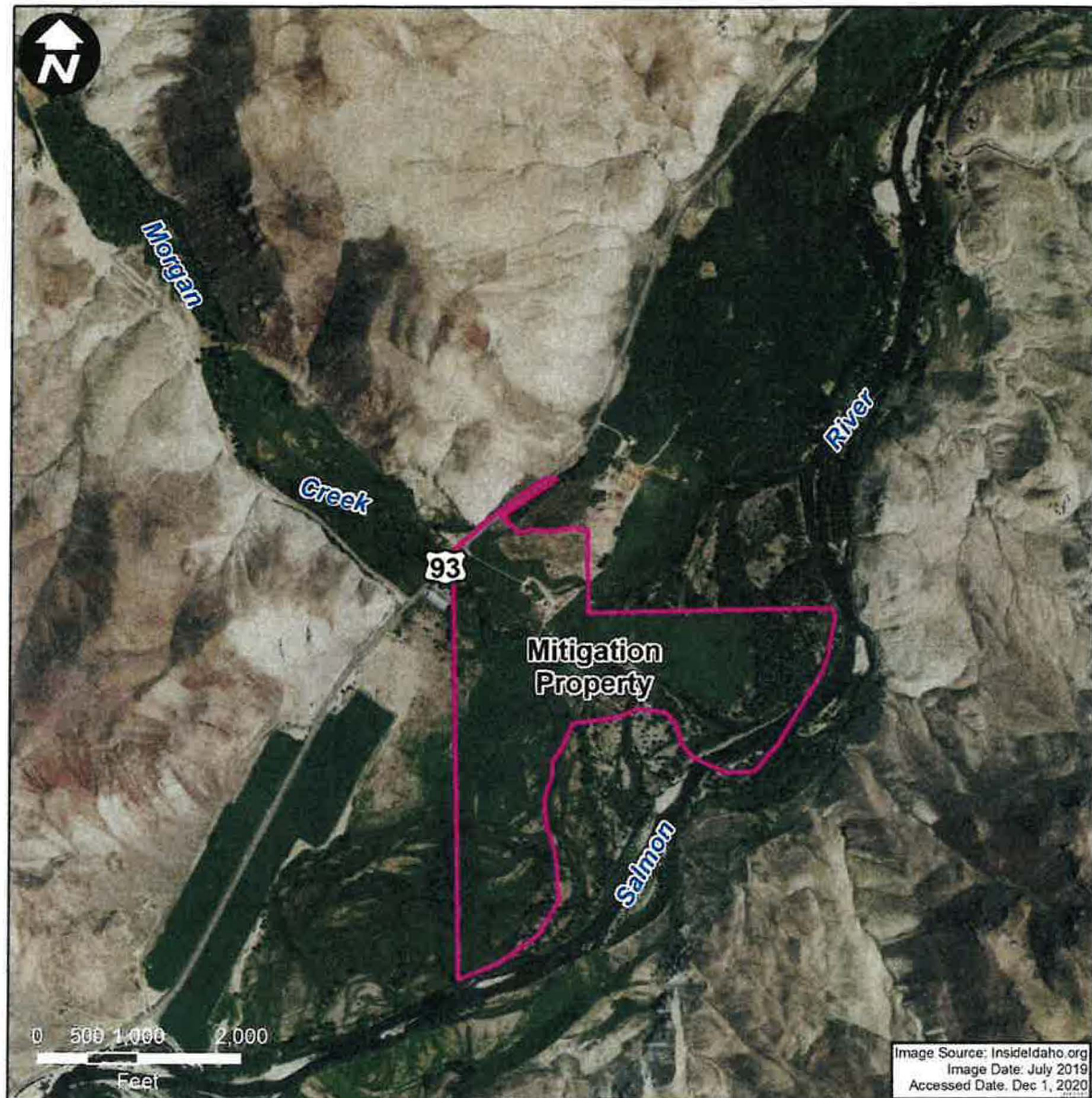


Figure 4. Frequency of Days Streamflow at Shoup Gage is below the WSWR (2004-2018)

Mitigation Plan

Detention of stormwater is necessary to protect water quality and offsets diversion demand from groundwater and the EFSFSR. Perpetua Resources proposes to mitigate for out-of-priority stormwater detention at the mine site by non-use of existing irrigation water rights with places of use and points of diversion upstream of the Wild and Scenic River reach. Non-diversion of existing irrigation water rights will increase streamflow in the Wild and Scenic River reach and provide mitigation for stormwater detention at the SGP.

Perpetua Resources has secured the Ronald and Corrine Jones property, near Challis, Idaho, and associated water rights through an option to purchase agreement (Figure 5, Figure 6). The Ronald and Corrine Jones property borders the Salmon River downstream from Challis and is a good candidate for mitigation purposes because the appurtenant water right portfolio (1) has a high diversion rate per acre, (2) exceeds the needed consumptive volume, (3) is on the Salmon River upstream of the Wild and Scenic River reach, and (4) is deliverable for the entire irrigation season beginning April 1. An additional benefit is that non-use of the right will benefit fish passage in Morgan Creek which is an important stream for anadromous fish and also flows through the property. Being located entirely upstream of the Wild and Scenic reach, mitigation at the property would increase streamflow throughout the Wild and Scenic reach and a significant length of intervening reach from below Challis to below Salmon, while Perpetua Resources' water detention, on a tributary to the South Fork Salmon River, would only affect the lower 19 percent of the Wild and Scenic reach.



The Jones property has irrigation water rights authorizing a diversion rate of 10.75 cfs for irrigation of 138.8 acres (Table 3). The consumptive mitigation value for these water rights is 2.5 acre-feet per acre, for a total mitigation volume of 347 acre-feet (138.8 acres x 2.5 acre-feet/acre) annually. This is more than three times the anticipated needed annual mitigation volume for stormwater detention at the SGP. Under this Mitigation Plan, the Jones property water would remain undiverted and allowed to flow down the Salmon River through the Wild and Scenic River reach. Water delivery history of the Jones water rights is described in the attached Salmon River and Morgan Creek Irrigation Water Deliveries to Jones Property.

interest, and does not injure other water rights"⁹. Perpetua Resources also believes this is consistent with the full economic development of Idaho water resources¹⁰.

The mitigation volume under the Jones water rights is more than adequate to offset the peak annual contact water volume, and therefore the volume requiring mitigation, that will be diverted under reasonably expected hydrologic conditions. The diversion rate, however, may be less than the peak depletion rate that requires mitigation on any given day (Table 1). In addition, as an irrigation water right, mitigation is provided during the irrigation season only, while contact water diversion and detention to protect water quality occurs both during and outside of the irrigation season. These minor deficiencies are offset by the significant benefits of the high rate of continuous mitigation during the irrigation season.

Mitigation by non-use of an irrigation water right is the most practical method to satisfy Perpetua Resources' potential mitigation obligation. Mitigation by non-use is the preferred method because of the clear advantages over other considered options:

1. **No Adverse Environmental Impact.** Mitigation by non-use has no detrimental environmental consequences, does not incur environmental disturbance, and does not require potential additional National Environmental Protection Act (NEPA) analysis.
2. **Anadromous Fish Benefit.** Streamflow augmentation and benefits to anadromous fish passage are significant with the proposed mitigation strategy. These benefits compensate for the limited occurrence of out-of-season stormwater capture and retention and/or stormwater diversion at rates greater than the mitigation flow rate during times when the WSWR is not met. The non-diversion will improve fish habitat and passage on Morgan Creek, an important anadromous fish watershed, and reduce diversions from the Salmon River in a reach that is also important to anadromous fish.
3. **Practical and Feasible.** The proposed mitigation is the most practical and feasible approach identified. Perpetua Resources, acting on the guidance of the July 27, 2020, IDWR letter, evaluated six mitigation alternatives that are described in the *Water Right Mitigation Alternatives Considered for the Stibnite Gold Project* memorandum (attached; delivered to IDWR and USFS, January 21, 2021). It was demonstrated that it is impractical to develop a mitigation plan that can offset all potential stormwater diversion and detention in real-time. It is also impractical, and indeed unprecedented, for a remote mountainous mine site to have water treatment capacity to adequately treat and discharge stormwater within 24 hours during a significant runoff event. Further, detaining contact water and utilizing it for industrial purposes offsets additional groundwater and surface water diversion otherwise needed to meet industrial demand. Acquisition of an active water right for mitigation is economically and operationally practical, provides continuous instream flows even when mitigation is not required, mitigates more water volume than anticipated to be detained at a reasonable flow rate during the irrigation season, and is easily administered.
4. **No Administrative Burden.** Continuous mitigation throughout the irrigation season does not place an administrative burden on the water district, IDWR, or USFS.

⁹ Idaho Administrative Procedures Act (IDAPA) 37.03.11, Section 043, page 12.

¹⁰ Idaho Constitution, Article XV, Section 7.

Table 4. Annual Stormwater Detention Volume and Excess Mitigation Provided

Mine Year (MY)	Annual Volume (acre-feet)				Over-Mitigation Percent
	Accrued	Mitigation Required (est) ¹	Mitigation Provided	Over-Mitigation Provided	
MY -1 ²	81	40	347	307	760%
MY 1	102	51	347	296	578%
MY 2	101	51	347	296	587%
MY 3	192	96	347	251	261%
MY 4	210	105	347	242	231%
MY 5	194	97	347	250	258%
MY 6	123	61	347	286	466%
MY 7	208	104	347	243	234%
MY 8	187	94	347	253	271%
MY 9	188	94	347	253	270%
MY 10	179	90	347	257	287%
MY 11	118	59	347	288	487%
MY 12	177	89	347	258	292%
Total	2,060	1,030	4,511	3,481	338%

Notes:

¹ Required mitigation volume estimated at 50 percent of annual stormwater accrual based on WSWR (Figure 1)

² Initial TSF fill (428 acre-feet) not included in annual volume because fill anticipated to be from groundwater, EFSFSR, and contact water. Fill will either occur at times when mitigation is not required or will be mitigated using available mitigation water right volume or one-time water bank rental volume.

Abbreviations:

EFSFSR = East Fork of the South Fork of the Salmon River

est = estimated

MY = mine year

TSF = tailings storage facility

WSWR = Wild and Scenic Water Right

10. **Not Fully Consumptive.** Some of the runoff that is detained is not consumed. A portion can be returned to the stream through the water treatment plant a short time after detention.
11. **Imperceptible Impact.** The flow impacts to the Salmon River resulting from SGP stormwater detention are anticipated to be imperceptible. Typical Salmon River flows at the mouth of the South Fork Salmon River during the March through May period

Water Right Mitigation Alternatives Considered for the Stibnite Gold Project

May 18, 2021



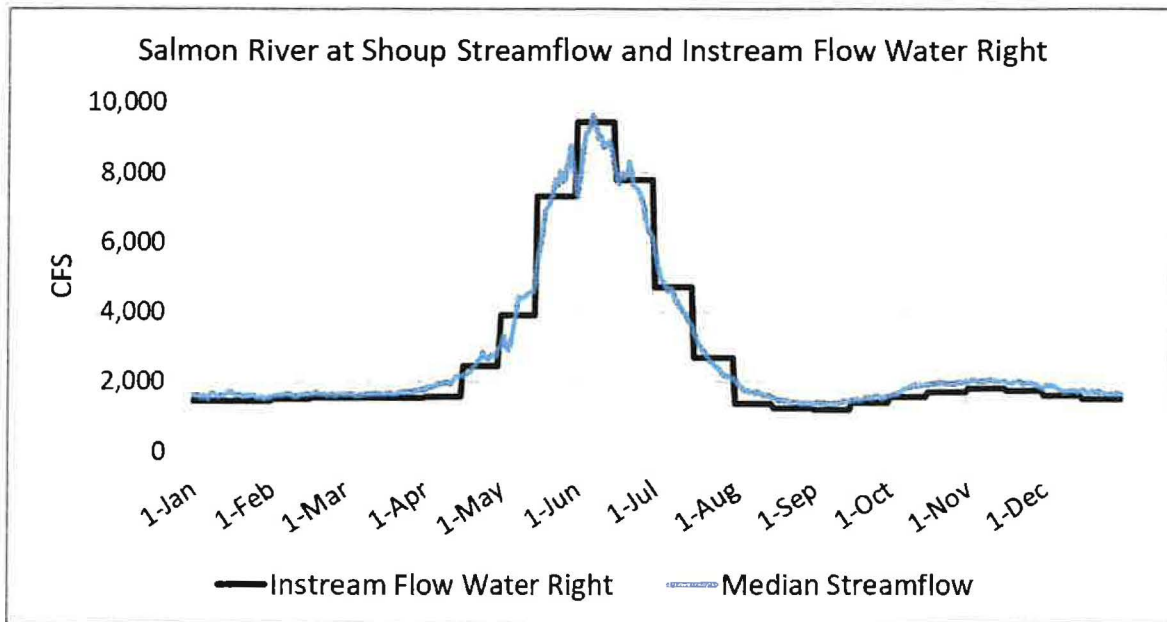


Figure 1. Salmon River at Shoup Streamflow and Wild and Scenic Right

The reach of the Salmon River subject to the Wild and Scenic Right extends upstream and downstream from the mouth of the South Fork Salmon River. As a result, stormwater diversion and detention at the SGP in the East Fork of the South Fork of the Salmon River (EFSFSR) watershed could reduce flow in the lower portion of the Wild and Scenic river reach.

Perpetua Resources proposes to develop new water rights to support the SGP. The new water rights will include direct diversions of groundwater, EFSFSR water, and contact water to industrial and domestic uses that are within the subordination limits. Because of water quality restrictions, however, Perpetua Resources also must divert and detain contact water when runoff rates exceed the combined capacity to treat and discharge and/or utilize the water for industrial purposes. In instances when stormwater must be diverted and detained, this water is temporarily held in stormwater ponds until it is used in the mill or treated and discharged. Perpetua Resources site-wide water balance predicts month-end stormwater pond volume. This modeling is used to understand monthly stormwater accrual volume and to support the water rights application.

The Wild and Scenic Right is partially subordinated to junior-priority water rights within the Salmon River Basin. The subordination is available to a limited amount of new water rights proposing direct use of water but is explicitly not available to new water rights proposing storage of water. The direct use of water proposed in the new Perpetua Resources water right permits will utilize the subordination provisions of the Wild and Scenic Right. For purposes of this Memorandum, we are assuming that diversion and detention of stormwater runoff to protect water quality at SGP will not be included in the Wild and Scenic Right subordination, and therefore, storage water rights at the SGP would not be authorized when flows in the Salmon River at Shoup are less than the instream flow water right unless mitigated.

downstream due to high flow velocities). The modeling suggests that more attenuation occurs during low-flow conditions, but water management can already fully offset stormwater runoff at such times.

Table 1. Diversion Rate Estimates

Storm Event	Storm Event Runoff Rate (cfs)		Effective Storm Event Runoff Rate (cfs) ¹	
	No Snow	Average Snow	No Snow	Average Snow
1 Year	5	27	0	15
10 Year	10	34	0	22
25 Year	12	36	0	24

Notes:

¹The effective storm event runoff rate is 12 cfs less the storm event because of mill use and treatment. This is a limited operational strategy to reduce flow impacts and only employed under specific conditions.

Abbreviations:

cfs = cubic feet per second

Monthly site-wide water balance modeling shows that annual stormwater diversion accrual volumes, under normal runoff conditions, will range from 62 acre-feet to 230 acre-feet, with an average of 158 acre-feet (Table 1).

Table 2. Modeled Stormwater Accrual Volume by Mine Year

Mine Year (MY)	Annual Volume (acre-feet) ¹
MY -1	81
MY 1	102
MY 2	101
MY 3	192
MY 4	210
MY 5	194
MY 6	123
MY 7	208
MY 8	187

Stormwater accrual volume is a function of meteorological conditions (temperature, precipitation quantity, and form), mine operations, and mine phase. Mine operations affect stormwater accrual by the quantity of contact water that can be used in the mill or treated in a given month. The mine phase affects reactive surface area of mine features available to interact with stormwater. The meteorological conditions affect the quantity of water available to runoff. *Figure 3* shows the stormwater accrual monthly variability in the 12 years of mine operations. The lower boundary (25th percentile) of the bars correspond to times of lower stormwater accrual that is partially driven by meteoric conditions that produce low available water. Presumably, these meteoric conditions correspond to lower streamflow at the Shoup gage that may be less than the instream flow water rights. While out-of-season accrual is still anticipated at the 25th percentile, associated volumes are very small and are generally near zero with the exception of February (less than 2 acre-feet) and March (approximately 11 acre-feet). Conversely, monthly stormwater accrual at the upper boundary partially correspond to times of higher water availability when the streamflow at Shoup gage may also be above average conditions.

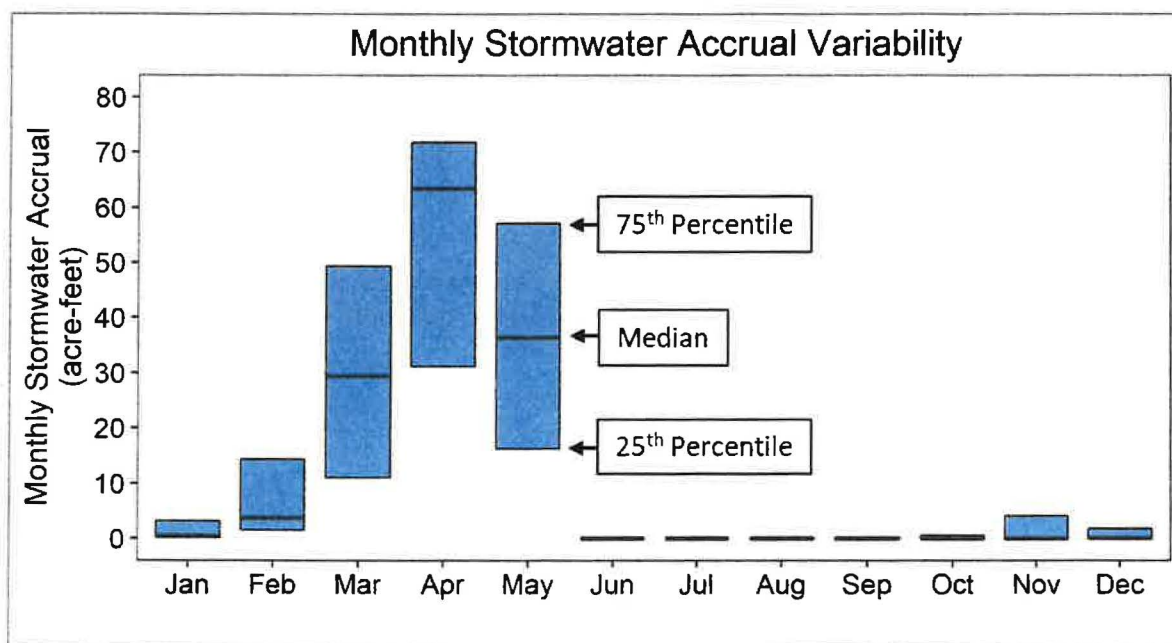


Figure 3. Monthly Stormwater Accrual Variability (12 Years of Operation)

As previously noted, mitigation is required only when flows are less than the instream flow rate listed in the Wild and Scenic Right. Streamflow data at the Shoup gage was analyzed for the period of 2004 through 2018 to quantify the monthly frequency of days when streamflow is less than the Wild and Scenic Right (*Figure 4*). Stream flows exceed the Wild and Scenic Right more than 50 percent of the time in the highest stormwater accrual months. As a result, the amount of stormwater accrual that is expected to require mitigation should be less than 50 percent of such projections in Table 2. Accordingly, the required mitigation volume should be less than 100 acre-feet in most years.

however, may be less than the peak depletion rate that requires mitigation on any given day (Table 1). In addition, as an irrigation water right, mitigation is provided during the irrigation season only, while contact water diversion and accrual to protect water quality occurs both during and outside of the irrigation season. These deficiencies are offset by the significant benefits of the high rate of continuous mitigation.

Under this mitigation alternative, Perpetua Resources controls the mitigation source, a priority emphasized during discussions with IDWR and, through acquisition of the water rights portfolio, ensures high “reliability of the source of replacement water over the term which it is proposed to be used”⁴.

2. **No Mitigation.** A water right is not required in Idaho for capture and use of runoff that does not enter a defined stream channel. As a result, Perpetua Resources does not need a water right to capture stormwater (contact water). Capture and detention of stormwater to prevent water quality impacts or flooding is standard practice for municipalities, industries, road departments, agriculture, and other entities throughout Idaho and the United States. In some instances, the diversion and detention of stormwater to protect water quality is specifically exempt from obtaining a water right. See, Idaho Code 42-201(8). Stormwater is often reused for irrigation purposes, infiltrated into groundwater or slowly released to a natural drainage following treatment. The proposed diversion and detention of contact water at the SGP is no different than the diversion and detention of stormwater elsewhere in the State of Idaho.

Alternatively, Perpetua Resources would apply for a mining water right that would authorize the diversion of all impacted stormwater for the beneficial uses of mining and water quality protection and not apply for a storage right. This strategy would not seek authorization for storage in the water right application and the diversion of stormwater would therefore be within the subordination clause of the Wild and Scenic Right.

In order to limit objections and provide the associated environmental benefits, Perpetua Resources is willing to apply for a water right for storage of impacted stormwater and provide mitigation for the detention and beneficial use of such contact water. If mitigation proves impractical or impossible, Perpetua Resources may pursue these other two options.

3. **Mitigation by Storage Release.** Mitigation is commonly accomplished in many areas of Idaho through storage release from onstream reservoirs. This is often an accounting exercise, where out-of-priority diversion are charged for storage use, often through a local rental pool. Such rental opportunities are not available in the Salmon River Basin, however, because there are no large storage reservoirs⁵.

Perpetua Resources could construct their own storage reservoir to store water for mitigation purposes. Because mitigation for storage is not required approximately 50

⁴ IDAPA 37.03.11, Section 043, page 12.

⁵ The absence of any large storage reservoirs in the Salmon River Basin was likely a key consideration by the parties in not subordinating future storage rights in the Basin.

increments and were anticipated to remain available for lease from the bank throughout the life of the SGP. The rights authorize irrigation of more than 2,000 acres.

Perpetua Resources evaluated leasing adequate portions of the USFS rights to offset both the annual consumptive volume and the projected peak depletion rate resulting from stormwater detention at the mine site. Similar to mitigation non-use of an irrigation water right (Alternative 1), lease of a USFS irrigation water right would be provided throughout the irrigation season, providing additional streamflow benefits at times when mitigation was not required.

Although a potential alternative, Perpetua Resources did not pursue this strategy because of IDWR concerns that Perpetua Resources would not have control of the water rights for the life of the project, USFS concerns about USFS water rights mitigating the Wild and Scenic Right (USFS water right), and the extended timeframe expected to be required for legal negotiations. IDWR was also concerned about the ability to deliver the water from the Stanley Basin to the Shoup gage, although it is not clear whether that is a valid concern. Finally, the season of use for Stanley Basin irrigation water rights is a shorter duration (May 1 through October 31) than proposed in Alternative 1 and only partially coincides with the period of contact water detention.

6. **Groundwater Pumping.** Perpetua Resources could construct a well field that could pump groundwater to the Salmon River for mitigation purposes. The wells could be located anywhere within the Salmon River Basin upstream from the mouth of the South Fork Salmon River, provided that mitigation could be delivered in a timely manner to offset impacts.

Concerns with groundwater pumping for mitigation include both wellfield capacity and the timing of pumping. Also, depending upon the location of such a wellfield, compliance with water quality requirements may be a concern. Although high-capacity wells can be developed in some locations within the Salmon River Basin, those areas are generally outside of the South Fork Salmon River watershed. In order to provide timely mitigation using a wellfield located near Stanley, Challis, or Salmon, water would likely need to be delivered into the river prior to stormwater detention. This would require continuous pumping when stormwater accrual could occur and could have a detrimental impact to local surface water and groundwater users. Groundwater pumping at the SGP and other locations within the South Fork Salmon River watershed could be considered, but the development of a 25 cfs well field in those areas is probably impractical, could have water quality concerns, and could have adverse effects on water resources in the vicinity of the well field.

Mitigation by non-use (Alternative 1) is the most practical alternative to mitigate for Perpetua Resources' potential mitigation obligation. This mitigation alternative provides reasonable, proactive assurance of over-mitigation of the potential annual mitigation obligation and provides continuous mitigation flows to surface waters during the irrigation season when water demand is high and through the summer and fall low streamflow periods. Continuous mitigation flow alleviates significant challenges of mitigating on an "as-needed" basis while providing significant environmental benefits. Perpetua Resources believes this mitigation

Operational adaptive management strategies could be considered that reduce the rate of stormwater accrual (

Table 1) and avoid stormwater accrual volume when the mitigation water right portfolio is out-of-season. Limiting or preventing out-of-season stormwater accrual is not operationally nor environmentally favorable and should not be the primary operational strategy. Non-accrual of stormwater when out-of-season stormwater is available increases freshwater dependency once stormwater reserves are depleted and may force increased surface water diversion from the EFSFSR during summer low-flow periods and/or additional groundwater pumping. An adaptive management strategy will require a monitoring plan that provides sufficient lead time to adjust operations (e.g., multiple day trailing average of Salmon River streamflow at Shoup gage) because adaptive management operations cannot initiate instantaneously.

Two adaptive management strategies were modeled to test the project's capability to potentially limit out-of-season stormwater accrual (

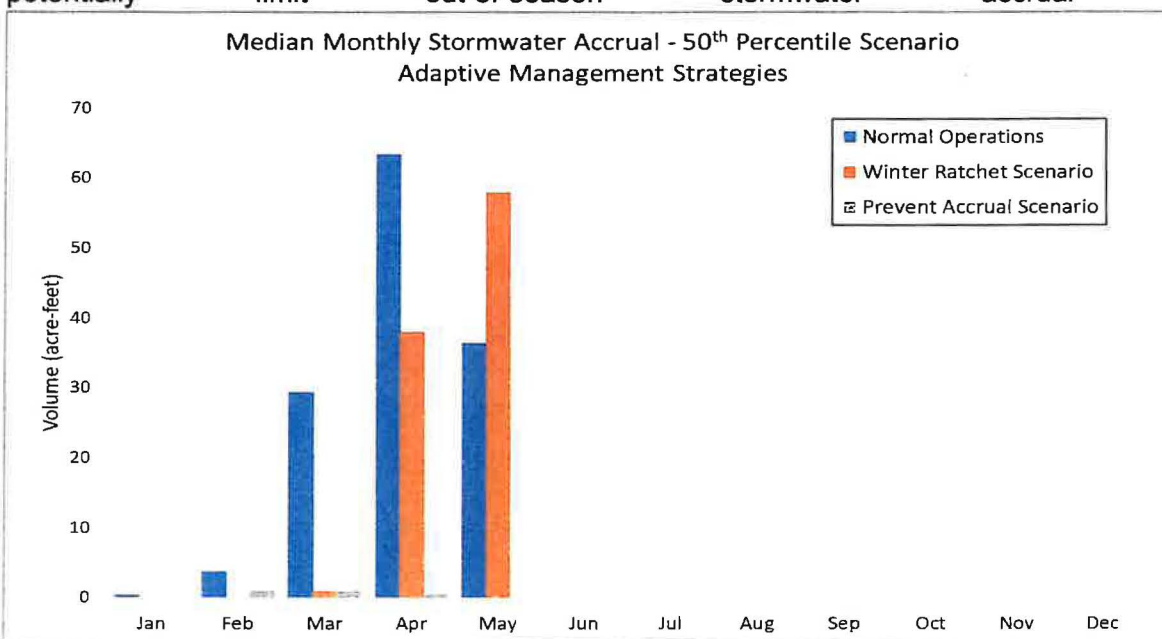


Figure 5). The “winter ratchet” scenario minimizes stormwater accrual between November and March by treating and discharging stormwater so that month end detention volume does not exceed the previous month’s volume. The “prevent accrual” scenario treats and discharges all excess stormwater. Even with these efforts, alleviation of all out-of-season stormwater accrual is not possible. Similarly, there may be times when mitigation is active during large stormwater runoff events, the accrual rate is greater than the combined mitigation rate, stormwater diverted to the mill and water treatment. Both adaptive management scenarios sacrifice a valuable water source to offset a relatively insignificant (0.025 percent⁹) flow depletion in the Salmon River and potentially incur economic and environmental costs.

⁹ The 0.025 percent is calculated with the 36 cfs stormwater runoff rate (Table 1) and the approximate 1,400 cfs average low flow at the Shoup gage.

Because water rights for storage volumes cannot be easily converted to a flow rate that can be counted against the flow rates to which the Wild & Scenic water rights are subordinate, IDWR will treat on-stream storage rights in the same way that instream flow water rights and non-consumptive water rights are treated in the partial decrees; they will not be deducted from the flow rate limitations to which the Wild & Scenic water rights will be subordinate.

Perpetua Resources acknowledges that the stormwater accrual differs from on-stream storage, however, the argument carries here that there is substantial difficulty to quantifying and administering stormwater accrual volume as a flow rate requiring one-to-one mitigation. Perpetua Resources advocates that the continuous flow rate mitigation at a rate of 10.75 cfs is compensatory for the anticipated rate of stormwater accrual volumes.

Perpetua Resources believes that the proposed mitigation strategy is the most reasonable alternative evaluated to protect water rights 75-13316 and 77-11941, is easily administered, avoids the accrual volume-to-flow rate complication (i.e., continuous mitigation flows provided), and has substantial environmental benefits to streamflow and aquatic habitat. Perpetua Resources is working in good faith with the USFS to achieve a mutually agreeable mitigation plan and gain this "consent of the water delivery entity". A previous example of such an arrangement is discussed next.

Precedent of Party Agreement of Mitigation of Instream Water Rights

The mitigation resolution of the 2015 shortfall of Idaho Power Company's Snake River instream flow water right at the Murphy gage is an example of a mitigation agreement. Water users were required to provide streamflow mitigation to Idaho Power Company to mitigate for this shortfall. The water users mitigated for the total volume of the shortfall, however mitigation was not provided in real-time nor at the depletion rate of the shortfall. The mitigation of Idaho Power Company's instream flow water right demonstrates that

- involved parties can enter into an agreement where the injured party can determine adequate mitigation conditions,
- mitigation does not need to be provided at the time of the depletion with the injured party authorization,
- mitigation does not need to be provided at the instantaneous flow rate of depletion.

Perpetua Resources' mitigation strategy proposes to over-mitigate the anticipated required volume and, when mitigation is required during April through October, will fully or partially mitigate the flow rate. There may be instances that mitigation is required when Perpetua Resources' mitigation flows are not active in November through March and/or instances when mitigation flow rate is less than the instantaneous stormwater accrual rate. These potential mitigation shortfalls are compensated by the benefits of over-mitigating the required mitigation volume and by continuous streamflow that provide instream water during baseflow periods. The 10.75 cfs of additional streamflow during summer low flow periods, when on-site contact water accrual is not anticipated, is arguably more valuable to aquatic ecosystems and recreationists than the depletion rate to streamflow caused by on-site stormwater detention during the freshet when much of the contact water detention will occur.

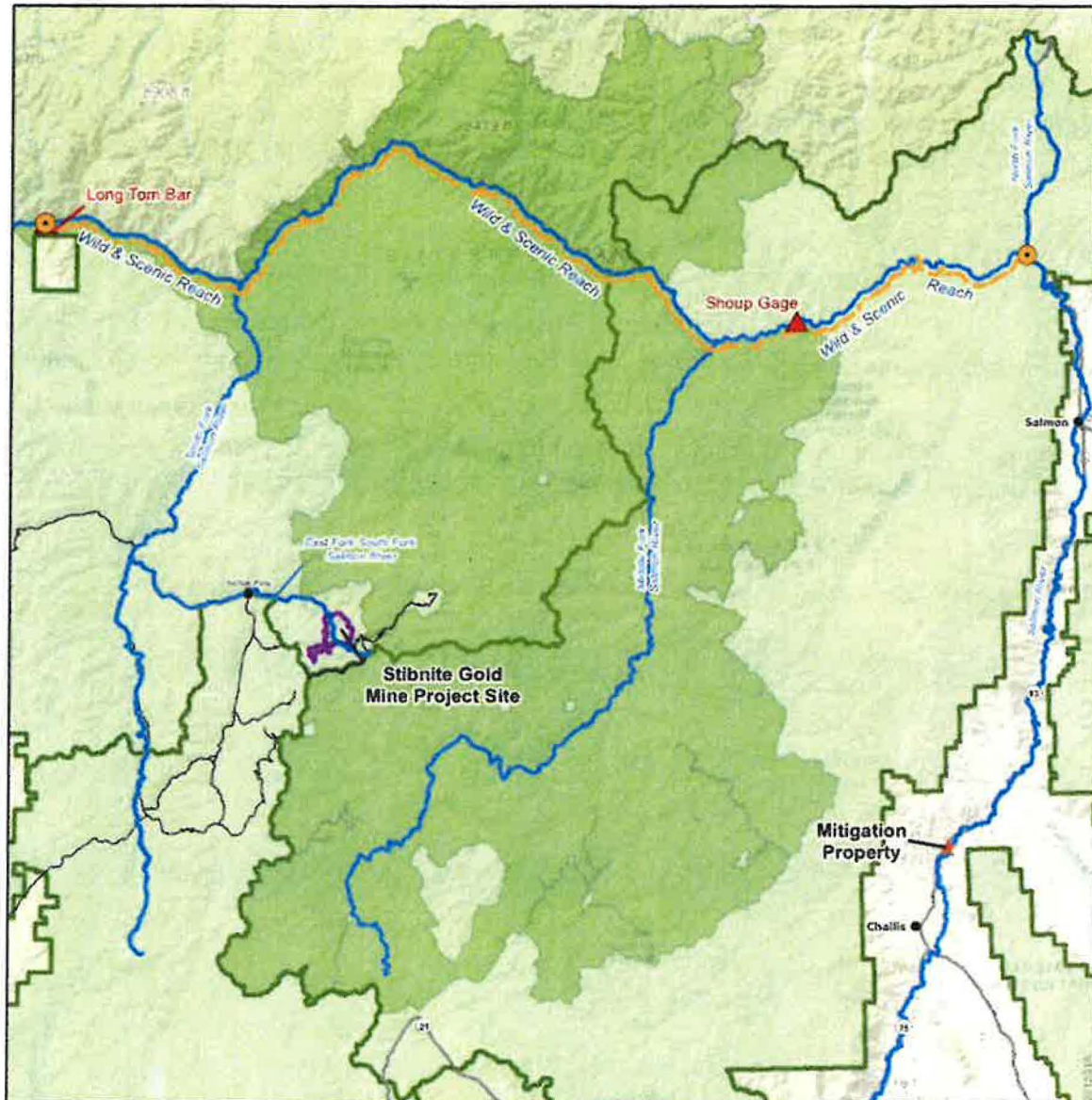


Figure 6. Regional Map



**Perpetua
Resources**

Perpetua Resources Corp.
405 S. 8th Street, Ste 201
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www.perpetuaresources.com

October 8, 2021

VIA EMAIL

Kevin Knesek
Deputy Forest Supervisor
US Forest Service
Payette National Forest
Email: kevin.s.knesek@usda.gov

Shelley Keen
Water Allocation Bureau Chief
Idaho Department of Water Resources
Email: Shelley.Keen@idwr.idaho.gov

Subject: Water Rights Mitigation for the Stibnite Gold Project and Protection of Wild and Scenic River Values on the Salmon River

Dear Mr. Knesek and Mr. Keen:

Prefacing Note: In a news release dated February 16, 2021, Midas Gold Corp. announced that it had changed its name to Perpetua Resources Corp. ("Perpetua Resources" or the "Company") effective February 15, 2021. Midas Gold Idaho, Inc., the Company's wholly owned subsidiary, also updated its name to "Perpetua Resources Idaho, Inc.". The name change not only follows the Company's recent announcement that it has relocated its corporate headquarters to Boise, Idaho, but the name also better aligns with the company's vision and reflects the natural evolution in this next phase of project development. This letter references a memorandum submitted to you on January 21, 2021, from Midas Gold Idaho, Inc., (Midas Gold) which is hereinafter referred to as Perpetua Resources Idaho, Inc. (Perpetua Resources).

On January 21, 2021, Midas Gold submitted to you a memorandum; *Water Right Mitigation Alternatives Considered for the Stibnite Gold Project*, prepared by SPF Water Engineering. The memorandum analyzed several alternatives for mitigating impacts to flows in the Salmon River (and associated instream flow rights held by USFS) that Midas Gold considered in developing a mitigation plan to be filed with a water rights application this year in support of the Stibnite Gold Project (SGP).

This letter further describes how Perpetua Resources proposes to implement the Water Right Mitigation Plan alternative selected in the memorandum (non-diversion of Jones irrigation water right). It also describes how that mitigation will conform with and protect Wild and Scenic River values in the Salmon River.



Critical Resources. Responsible Mining. Environmental Restoration.

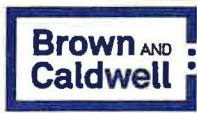


Protection of Wild and Scenic River Values

Although the timing of contact water detention and mitigation water do not exactly match, the mitigation water protects WSR values in the following ways.

1. Through non-use of a senior irrigation water right located upstream of the Salmon River WSR reach, the mitigation proposal adds water to the river during low-flow summer periods when river flows are significantly diminished by irrigation diversions. Salmon River flows during summer months are reduced by irrigation of thousands of acres in the Salmon River Basin upstream of the WSR reach. By adding water back to the river during this time period, the values of the WSR are enhanced. Additional flow during summer is beneficial to both fish and recreation.
2. Non-diversion of irrigation water protects Salmon River water quality. Irrigation return flows carry sediment, nutrients, and bacteria, and often have elevated temperatures. By leaving irrigation water in the river, Salmon River water quality is enhanced. Water quality is also protected by retaining contact water at the SGP.
3. The proposed stormwater diversion and detention at the SGP does not impact the free-flowing condition of the Salmon River or tributary streams (i.e., no in-channel detention features). Diversions would not be from natural channels or streams but from diffuse runoff and detention would occur in off-stream stormwater ponds, with water detained prior to entering a stream.
4. The flow impacts to the Salmon River resulting from SGP stormwater detention are anticipated to be imperceptible. Typical Salmon River flows at the mouth of the South Fork Salmon River during the March through May period when stormwater detention occurs range from 4,000 cubic feet per second (cfs) to 40,000 cfs, and flows are likely somewhat higher during periods of runoff. As an example, storm event-based modeling analysis estimated that a 25-year rain-on-snow event will produce 36 cfs of contact water for a 24-hour period. Relative to Salmon River flows at the South Fork Salmon River confluence, contact water management at the SGP for a storm of this magnitude has an instream flow impact of 0.09 percent to 0.9 percent. Such a small intermittent depletion in flow is not anticipated to impact WSR values and is more than offset by a continuous benefit of non-diversion of the mitigation water right from April to November as proposed by Perpetua Resources.
5. Although the WSR reach is 124 miles long (North Fork to Long Tom Bar), the impact to the WSR from the SGP stormwater diversions for which mitigation is being provided, will occur only in the lower 23 miles, downstream from the mouth of the South Fork Salmon River to Long Tom Bar, which comprises only 18.5 percent of the WSR reach. The mitigation water is provided for 202 miles, including 78 miles upstream of the WSR reach and 101 miles of the WSR reach upstream from the South Fork Salmon River that is the majority of the WSR reach (81.5 percent). Therefore, the proposed mitigation provides an instream flow and water quality benefit to many more river miles than are impacted by Perpetua Resources' proposed stormwater retention. The limited portion of the WSR reach affected by SGP activities is consistent with the size of the project drainage area





1290 West Myrtle Street, Suite 340
Boise, ID 83702

Subject: Beneficial Use of Contact Water and Mitigation
Date: October 8, 2021
To: Alan Haslam, VP Permitting, Perpetua Resources Idaho, Inc.
From: Dan Stanaway, Senior Associate, Brown and Caldwell

Perpetua Resources Idaho, Inc. (Perpetua Resources) has prepared this synopsis of the management and utilization of contact water at the Stibnite Gold Project (SGP) and the proposed mitigation for detention of contact water. Perpetua Resources will be managing contact water (i.e., stormwater runoff that has been in contact with mine facilities) to protect in-stream water quality and provide a water source for the mill. Contact water will be beneficially used by direct diversion to the mill or diverted and detained in contact water ponds prior to being utilized in the mill. During peak dewatering periods some contact water could be treated and discharged. Water right authorization for the beneficial use of contact water and storage is being sought in the forthcoming water right application.

Industrial water uses are within the subordination clause of the Wild and Scenic River water rights (WSWR) (75-13316, 77-11941) however, subordination is not available to new storage uses. Whether Perpetua Resources' direct diversion of contact water before it reaches a natural stream channel, a required practice to protect water quality, requires a water right, and if so, whether the subsequent detention of stormwater runoff is within the subordination provisions of the WSWR are open questions. Nevertheless, Perpetua Resources is assuming that detention of stormwater runoff to protect water quality at the SGP may not be included in the WSWR subordination when flows in the Salmon River at Shoup are less than the WSWR and is proposing mitigation by non-use of an irrigation water right upstream of the Wild and Scenic River reach.

This summary highlights key points that have been presented during presentations and in three documents prepared for the United States Forest Service describing the WSWR, the SGP water right application, and the proposed mitigation. These documents include the Water Right Mitigation Alternatives Considered for the Stibnite Gold Project, Water Rights Mitigation for the Stibnite Gold Project and Protection of Wild and Scenic River Values on the Salmon River, and Off-Stream Reservoir Alternative Analysis for Wild and Scenic Water Right.

Simulated Contact Water Annual Storage Volume

Contact water accrual varies by mine year based on mine development and climatic conditions. Annual contact water generation and accrual has been estimated in the site wide water balance model. Estimates of annual contact water accrual volumes range from 81 to 210 acre-feet under an average climate scenario (Table 1; further detail in Water Right Mitigation Alternatives Considered for the Stibnite Gold Project, page 5).

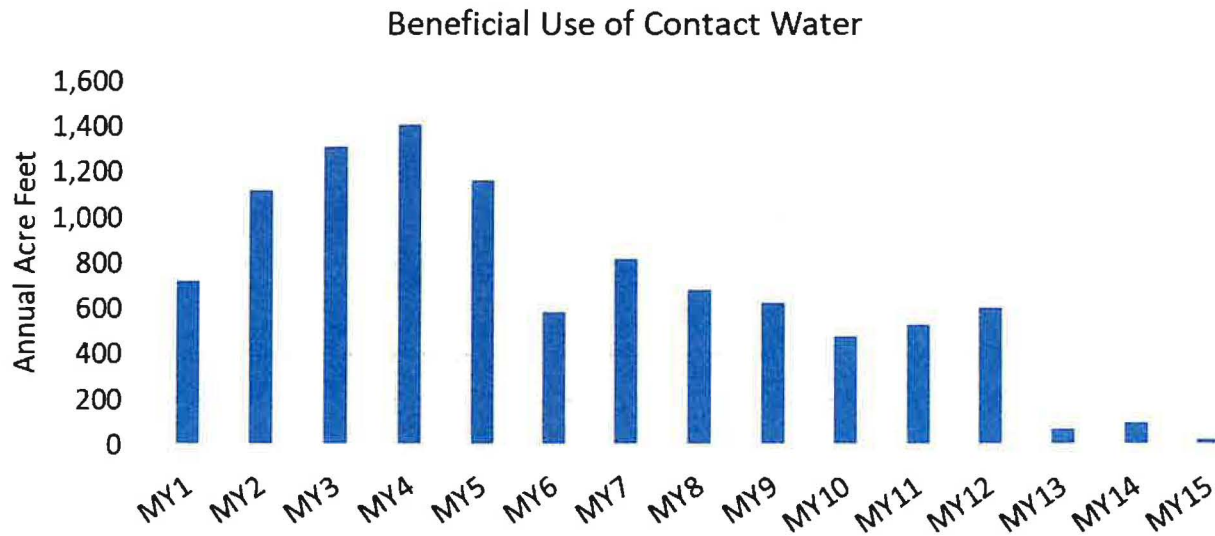


Figure 1. Beneficial Use of Contact Water Annual Volume

Mitigation of Detained Contact Water

Perpetua Resources has secured an option to purchase agreement on a property near Challis, Idaho on the Salmon River to mitigate the WSWR for the detention and beneficial use of contact water. It should be noted again that it is uncertain whether stormwater detention at the SGP qualifies as storage for water right purposes and whether this practice is subordinate to the WSWR.

This property has an irrigation water right portfolio that will provide a continuous 10.75 cfs during the irrigation season and a total mitigation volume of 347 acre-feet. The mitigation water right portfolio will provide significant over-mitigation of the anticipated annual volume of detained contact water (Table 3; originally in the *Midas Gold's Mitigation Property and Proposed Plan* presentation¹) but may at times be less than the instantaneous rate of contact water accrual to contact water ponds (Table 2) and is not active November to March when some contact water will be accrued (Figure 2; figure slightly modified from *Midas Gold's Mitigation Property and Proposed Plan* presentation).

Table 3. Annual Stormwater Detention Volume and Excess Mitigation Provided

Mine Year (MY)	Annual Volume (acre-feet)			Over Mitigation Provided	Over-Mitigation Percent
	Accrued	Mitigation Required (est) ¹	Mitigation Provided		
MY -1 ²	81	40	347	307	790%
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MY 2	101	51	347	296	587%
MY 3	192	96	347	251	261%
MY 4	210	105	347	242	231%
MY 5	194	97	347	250	258%

¹ Table has been updated with current values since original presentation.



322 E Front Street, Suite 648, Boise ID 83702 • PO Box 83720, Boise ID 83720-0098
Phone: 208-287-4800 • Fax: 208-287-6700 • Email: idwrinfo@idwr.idaho.gov • Website: idwr.idaho.gov

Governor Brad Little

Director Gary Spackman

November 29, 2021

PERPETUA RESOURCES IDAHO INC
PO BOX 429
DONNELLY, ID 83615-0429

RE: Transfer No. 85396- Water Right No(s). 77-7122, 85397- Water Right No(s). 77-7285, Transfer No. 85399- Water Right No(s). 77-7141, Transfer No. 85398- Water Right No(s). 77-7293, Exchange No. 85538- Water Right No(s). 77-7122
Applications for Permit No. 65-24089, 77-14377, 77-14378, 77-14379, 77-14381

Dear Applicant(s):

The Department of Water Resources has received your water right transfer applications and applications for permit. Please refer to the transfer/water right number referenced above in all future correspondence regarding these applications.

A legal notice of the application has been prepared and is scheduled for publication in the STAR NEWS on 12/2/2021 and 12/9/2021. Protests to these applications may be submitted for a period ending ten (10) days after the second publication.

If the applications are protested, you will be sent a copy of each protest. All protests must be resolved before the application can be considered for approval. If the protest(s) cannot be resolved voluntarily, the Department will conduct a conference and/or hearing on the matter.

If the applications are not protested, the Department will process your application and notify you of any action taken on the application. If your applications are approved, the Department will send you a copy of the approval documents.

Please contact this office if you have any questions regarding the application.

Sincerely,

Jean Hersley
Technical Records Specialist

CC: STOEL RIVES LLP

NOTICE OF PROPOSED CHANGE OF WATER RIGHT

TRANSFER NO. 85396

PERPETUA RESOURCES IDAHO INC, PO BOX 429, DONNELLY, ID 83615-0429 has filed Application No. 85396 for changes to the following water rights within VALLEY County(s): Right No(s). 77-7122; to see a full description of these rights and the proposed transfer, please see <https://research.idwr.idaho.gov/apps/waterrights/querynewtransfers>. The purpose of the transfer is to change a portion of the above rights as follows:

The purpose of the transfer is to change the point of diversion and change the place of use. The proposed location is for the new mining exploration area. Water will be used at the current place of use near Stibnite, ID, approx. 38 miles east of McCall, ID.

TRANSFER NO. 85399

PERPETUA RESOURCES IDAHO INC, PO BOX 429, DONNELLY, ID 83615-0429 has filed Application No. 85399 for changes to the following water rights within VALLEY County(s): Right No(s). 77-7141; to see a full description of these rights and the proposed transfer, please see <https://research.idwr.idaho.gov/apps/waterrights/querynewtransfers>. The purpose of the transfer is to change a portion of the above rights as follows:

The purpose of the transfer is to change the point of diversion, add points of diversion, and change the place of use. The new points of diversion are to be used with Application for Permit 77-14377. Water will be used at the current place of use near Stibnite, ID, approx. 38 miles east of McCall, ID.

TRANSFER NO. 85397

PERPETUA RESOURCES IDAHO INC, PO BOX 429, DONNELLY, ID 83615-0429 has filed Application No. 85397 for changes to the following water rights within VALLEY County(s): Right No(s). 77-7285; to see a full description of these rights and the proposed transfer, please see <https://research.idwr.idaho.gov/apps/waterrights/querynewtransfers>. The purpose of the transfer is to change a portion of the above rights as follows:

The purpose of the transfer is to change the point of diversion, add new points of diversion, and change the place of use. The proposed location is for the new mining exploration area. Water will be used at the current place of use near Stibnite, ID, approx. 38 miles east of McCall, ID.

TRANSFER NO. 85398

PERPETUA RESOURCES IDAHO INC, PO BOX 429, DONNELLY, ID 83615-0429 has filed Application No. 85398 for changes to the following water rights within VALLEY County(s): Right No(s). 77-7293; to see a full description of these rights and the proposed transfer, please see <https://research.idwr.idaho.gov/apps/waterrights/querynewtransfers>. The purpose of the transfer is to change a portion of the above rights as follows:

The purpose of the transfer is to change the place of use for mining use for 77-7293. The proposed POU incorporates the entire mining/ore processing area. This transfer proposes to only change the POU and was accompanied by Exchange 85538 which proposes to change the point of diversion for the same water right. Water will be used at the current place of use near Stibnite, ID, approx. 38 miles east of McCall, ID.

EXCHANGE NO. 85538

PERPETUA RESOURCES IDAHO INC, PO BOX 429, DONNELLY, ID 83615-0429 has filed Application No. 85538 for changes to the following water rights within VALLEY County(s): Right No(s). 77-7293; to see a full description of these rights and the proposed transfer, please see <https://research.idwr.idaho.gov/apps/waterrights/querynewtransfers>. The purpose of the transfer is to change a portion of the above rights as follows:

The purpose of the exchange of water is to relocate the source for 77-7293 from current Unnamed Stream to proposed East Fork South Fork Salmon River. This exchange proposes to only change the POD and was accompanied by Transfer 85398 which proposes to change the POU. Water will be used near Stibnite, ID, approx. 38 miles east of McCall, ID.

For additional information concerning the property location, contact Western Region office at (208)334-2190. Protests may be submitted based on the criteria of Idaho Code Sec. 42-222. Any protest against the proposed change must be filed with the Department of Water Resources, State Office, PO Box 83720, BOISE ID 83720-0098 together with a protest fee of \$25.00 for each application on or before 12/20/2021. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director

Published on 12/2/2021 and 12/9/2021

0.04 CFS

Use: DOMESTIC

01/01 to 12/31

0.04 CFS

Total Diversion:

0.04 CFS

Date Filed: 10-08-2021

Place Of Use: DOMESTIC,INDUSTRIAL

T15N R08E S4 NWSE,SWSE

This application proposes the diversion and use of water from ground water tributary to the Salmon Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because the diversion rate will be applied to the subordination amounts specified in the decree for the Wild & Scenic River listed above.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact the State office at (208) 287-4800; or for a full description of the right(s), please see

<https://idwr.idaho.gov/apps/ExtSearch/WRApplicationResults/>. Protests may be submitted based on the criteria of Idaho Code § 42-203A. Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, State Office, 322 E Front St, PO Box 83720, Boise, ID 83720 together with a protest fee of \$25.00 for each application on or before **12/20/2021**. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director

Published on 12/2/2021 and 12/9/2021

Hersley, Jean

From: Hersley, Jean
Sent: Wednesday, November 24, 2021 3:56 PM
To: Starclass@frontier.com
Subject: Legal Notice for the Star News- Valley County
Attachments: Legal Notice.docx

Dear LEGAL NOTICE DEPARTMENT:

Enclosed you will find a legal notice which we wish to have published in your newspaper on the dates indicated (once a week for two consecutive weekly issues). If you cannot publish the notice on the proposed dates, please contact us immediately.

An affidavit of publication must be submitted to the Department along with the publication bill. Please send the affidavit and bill to this office, PO Box 83720, Boise, Idaho, 83720-0098 before December 20, 2021. Your cooperation is appreciated.

Sincerely

Jean Hersley
Technical Records Specialist II
IDWR State Office
322 E Front St
Boise ID 83720
208-287-4942
jean.hersley@idwr.idaho.gov

Hersley, Jean

From: Hersley, Jean
Sent: Monday, November 29, 2021 9:09 AM
To: Pozzanghera, Casey; dgreen@idl.idaho.gov; Sujata Connell; Buyer, Remington; Clark, Cynthia Bridge; sspencer@fs.fed.us
Subject: Transfer No. 85396- Water Right No(s). 77-7122, 85397- Water Right No(s). 77-7285, Transfer No. 85399- Water Right No(s). 77-7141, Transfer No. 85398- Water Right No(s). 77-7293, Exchange No. 85538- Water Right No(s). 77-7122

Dear Interested Party:

The Department of Water Resources (IDWR) is seeking written comment and/or recommendations from your organization regarding the above referenced water right applications in the name of Perpetua Resources Idaho Inc. You can find a copy of the applications at: <https://idwr.idaho.gov/apps/ExtSearch/WRAJSearch/WRADJSearch.aspx>. The documents will be scanned by the end of today.

IDWR can finish reviewing unprotested applications as soon as the protest period has past. Therefore, your prompt response to this request is appreciated. If your organization desires to formally protest the approval of these applications, you may do so after the notice is published by filing a written protest along with a \$25.00 filing fee within 10 days of the final publication. The protest end date is December 20, 2021.

Please contact this office if you have any questions regarding the application.

*Jean Hersley
Technical Records Specialist II
Idaho Dept Water Resources
(208) 287-4942*

Hersley, Jean

From: Megan Tverdy <MTverdy@BrwnCald.com>
Sent: Tuesday, October 12, 2021 4:42 PM
To: Hersley, Jean
Cc: Alan Haslam; Kristan Robbins; tscanlan; Beaton, Kevin J.; Dale Kerner
Subject: Application for Transfer for water right 77-7141
Attachments: 77-7141 Stibnite Lodge Transfer Application COMPILED Draft 2021-04-12.pdf

Hi Jean,

Thank you for letting us know that this was submitted as incomplete. I have attached the complete transfer application for water right 77-7141 to this email.

Please let me know if you have any questions or need additional information.

Thank you,
Megan

Megan Tverdy

PSE Senior Coordinator, Project Support

Brown and Caldwell | Boise

T 208.389.7764 | C 208.841.1870 | MTverdy@brwncald.com



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Dear Applicant(s):

The Department of Water Resources has received your Application for Transfer for water right 77-7141. Preliminary review of the application indicates that it is incomplete and cannot be accepted for processing. The required information is described below.

- The Department only received the first 3 pages of the application. Please provide the complete application this includes the remainder of Part 1 and all of Part 2 and Part 3.

You can provide this information by responding to this email or mailing to IDWR, PO Box 83720, Boise, ID, 83720-0098. Please contact me if you have any questions regarding this matter.

Sincerely,

Jean Hersley
Technical Records Specialist II
Idaho Dept Water Resources
(208) 287-4942

Hersley, Jean

From: Alan Haslam <Alan.Haslam@Perpetua.us>
Sent: Tuesday, October 12, 2021 4:01 PM
To: Hersley, Jean
Cc: kevin.beaton@stoel.com; Kristan Robbins (krobbins@brwnald.com); Dale Kerner; Terry Scanlan (TScanlan@spfwater.com)
Subject: RE: Application for Transfer for water right 77-7141
Importance: High

Jean –
Thanks so much for letting us know that something was missing.
We'll dive into this and let you know ASAP.
Thanks,
Alan

Alan Haslam
VP PERMITTING



**Perpetua
Resources**

405 S 8th St. #201 Boise, ID 83702
T 208.901.3053 M 208.351.9813

TSX: PPTA NASDAQ: PPTA

[Facebook](#) | [Twitter](#) | [LinkedIn](#) | [Instagram](#)
www.perpetuaresources.com

From: Hersley, Jean <Jean.Hersley@idwr.idaho.gov>
Sent: Tuesday, October 12, 2021 3:57 PM
To: Alan Haslam <Alan.Haslam@Perpetua.us>
Cc: kevin.beaton@stoel.com
Subject: Application for Transfer for water right 77-7141

You don't often get email from jean.hersley@idwr.idaho.gov. [Learn why this is important](#)

Dear Applicant(s):

The Department of Water Resources has received your Application for Transfer for water right 77-7141. Preliminary review of the application indicates that it is incomplete and cannot be accepted for processing. The required information is described below.

- The Department only received the first 3 pages of the application. Please provide the complete application this includes the remainder of Part 1 and all of Part 2 and Part 3.

You can provide this information by responding to this email or mailing to IDWR, PO Box 83720, Boise, ID, 83720-0098. Please contact me if you have any questions regarding this matter.
Sincerely,

*Jean Hersley
Technical Records Specialist II
Idaho Dept Water Resources
(208) 287-4942*

Warning: This email originated externally. **DO NOT CLICK** links if the sender is unknown.

RECEIVED

OCT 08 2021

DEPARTMENT OF
WATER RESOURCES



**Perpetua
Resources**

Perpetua Resources Corp.

405 S. 8th Street, Ste 201

Boise, ID 83702

Tel: 208.901.3060

www.perpetuaresources.com

October 8, 2021

Shelley W. Keen, Chief
Water Allocation Bureau
Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098

Subject: Water Right Applications by Perpetua Resources for the Stibnite Gold Project

Dear Mr. Keen:

Perpetua Resources Idaho, Inc. (Perpetua Resources) is pleased to submit the nine enclosed water right applications for the Stibnite Gold Project (Project) in Valley County. These applications are the result of many years of planning, research, and modeling of water needs for the Project. Water uses proposed by the applications seek to optimize the use of available water resources in the Project vicinity while protecting water quality and environmental values. Existing water rights held by Perpetua Resources will be used to the maximum extent possible, with the balance of Project water needs provided from new appropriations.

The nine applications include four applications for transfer and five applications for permit. Seven of the applications are for water uses at the Project site and two applications are for off-site support facilities. The first application for permit, proposing appropriation of water for industrial purposes at the Project, is somewhat complex due to the multiple sources and uses involved and the potential requirement for mitigation. As a result, that application includes supporting documents to further explain and support the application. The remaining eight applications are relatively simple and readily described in this letter and on the application forms. Supporting documents in this application are:

- SGP Water Right Diversion Rate and Storage Volume
- Water Right Mitigation Plan for the Stibnite Gold Project
- Water Right Mitigation Alternatives Considered for the Stibnite Gold Project
- Water Rights Mitigation for the Stibnite Gold Project and Protection of Wild and Scenic River Values on the Salmon River
- Beneficial Use of Contact Water and Mitigation
- Salmon River and Morgan Creek Irrigation Water Deliveries to Jones Property

Each application is described in the following paragraphs, beginning with the application for permit proposing industrial uses at the Project site.



Critical Resources. Responsible Mining. Environmental Restoration.



proposes to change the place of use to the proposed mine and mill area. Up to 12 proposed supply wells and one existing well in the Hangar Flats vicinity are contemplated as points of diversion. Storage will occur in contact water ponds near the wells.

The application fee is \$500.00 based on the 0.5 cfs diversion rate. An ownership change fee is not included because the current owner (Stibnite Gold Company) merged with Idaho Gold Resources Company, LLC, the surviving company. Perpetua Resources Idaho, Inc. and Idaho Gold Resources Company, LLC are affiliates of Perpetua Resources Corp.

Application for Transfer - Mining Right 77-7122. Water right 77-7122 authorizes diversion of 0.33 cfs and 7.1 acre-feet annually from the EFSFSR for mining and diversion to storage purposes. The application for transfer proposes to change the point of diversion to the pump station on the EFSFSR and the place of use to the proposed mine and mill area.

The application fee is \$500.00 based on the 0.33 cfs diversion rate. An ownership change fee is not included because Idaho Gold Resources Company, LLC (the current owner) and Perpetua Resources Idaho, Inc. are both affiliates of Perpetua Resources Corp.

- **Application for Transfer - Mining Right 77-7293.** Water right 77-7293 authorizes diversion of 0.25 cfs and 20 acre-feet per year from an unnamed stream tributary (locally known as Hennessy Creek) to the EFSFSR for mining purposes. The application for transfer proposes to change the point of diversion to the pump station on the EFSFSR and the place of use to the proposed mine and mill area.

The application fee is \$500.00 based on the 0.25 cfs diversion rate. An ownership change fee is not included because the current owner (Stibnite Gold Company) merged with Idaho Gold Resources Company, LLC, the surviving company. Perpetua Resources Idaho, Inc. and Idaho Gold Resources Company, LLC are affiliates of Perpetua Resources Corp.

- **Application for Permit - Truck Shop and Ore Processing Facility Domestic Use.** A potable domestic water system will serve the truck shop and ore processing facility. An application for permit seeks 0.06 cfs of groundwater to supply this water system. The point of diversion will be an existing public water system well that was constructed in 2012.

The application fee is \$100.00 based on the 0.06 cfs diversion rate.

- **Application for Transfer of Domestic Right 77-7141.** A potable domestic water system will serve the worker housing facility, with a maximum capacity of 750 persons using 50 gallons per person per day. This use is equivalent to an average daily rate of 26 gallons per minute (gpm) (0.06 cfs) and annual volume of 42 acre-feet. An application for transfer of water right 77-7141 (0.20 cfs and 11.4 acre-feet per year) will seek to change

