



Perpetua Resources Stibnite Gold Project

Point of Compliance Determination

Introduction

The Stibnite Gold Project (SGP) is a proposed gold mine located in Valley County, approximately 12 miles east of Yellow Pine, Idaho. The SGP is located on private land and public land within the Boise and Payette National Forests. The proponent, Perpetua Resources Idaho, Inc. (Perpetua), has 29,827 acres of mining claims comprised of both unpatented (28,477 acres) and patented (1,350 acres) claims (Perpetua 2022). The SGP is also located within the historical Stibnite Mining District, an area characterized by previous mining activities including legacy mining features such as underground mine workings, rock dumps, tailings deposits, and open pits, most notably the Yellow Pine Pit. Perpetua first submitted a Plan of Restoration and Operations (PRO) for the project to the U.S. Forest Service (USFS) and the Idaho Department of Lands (IDL) in 2016. Plan alternatives were first evaluated in the SGP Draft Environmental Impact Statement (EIS). Subsequently, Perpetua submitted a Refined Proposed Action (ModPRO2) to the USFS in 2021, which was evaluated in a Supplemental Draft EIS released for public comment in October 2022. EIS materials are available at: <https://www.fs.usda.gov/project/?project=50516>.

The SGP will result in the development of several separate mining areas in which mining, ore processing, and reclamation will occur. These areas include an ore processing facility, Hanger Flats Pit, West End Pit, and Yellow Pine Pit. In addition to ancillary infrastructure such as haul roads and water management features, the mine will also include a tailings storage facility (TSF) and TSF buttress, located upgradient of the Hanger Flats Pit. Proposed active operations would occur over approximately 23 years, including 15 years of operations followed by 5 years of reclamation and closure. Reclamation and closure include backfilling of the Hanger Flats and Yellow Pine Pits prior to placement of a low permeability membrane cover. The TSF is a fully lined facility, and both the TSF and TSF buttress will also receive a low permeability membrane cover. Site-wide reclamation activities include recontouring, placement of growth media, and reconstruction of surface water features.

Perpetua has proposed best management practices (BMPs) in accordance with the Idaho Ground Water Quality Rule to contain and reduce environmental impacts associated with the SGP. These include (Perpetua 2022):

- Reduce formation of contact water to protect water quality and downstream aquatic habitat;
- Prevent surface water and groundwater contact with mining materials; and
- Manage and treat mine-impacted water to ensure compliance with water quality standards.

Stibnite Gold Project, DEQ Point(s) of Compliance Determination

The Idaho Ground Water Quality Rule (IDAPA 58.01.11.401) allows a mine operator of a new or expanding mine to request the DEQ set point(s) of compliance (POC) at which the mine operator must meet groundwater quality standards as described in IDAPA 58.01.11.200. Perpetua submitted a POC application for the SGP mining area on December 15, 2022. The application was determined to be complete by DEQ as expressed in a letter to Perpetua dated January 19, 2023. In the completion letter, DEQ requested further information from Perpetua regarding the proposed POC location. Perpetua provided further information in a response letter dated March 7, 2023.

Perpetua Proposed Point(s) of Compliance and Indicator Wells

The application for point(s) of compliance submitted by Perpetua proposes two (2) POCs and thirteen (13) indicator wells. No well installation or monitoring progression was proposed in the application. The application subdivided the SGP POC monitoring network into five areas, based on surface watershed boundaries: Meadow Creek, Middle East Fork South Fork Salmon River (EFSFSR) between Meadow Creek and Yellow Pine Pit (YPP), Middle EFSFSR below YPP, Sugar Creek, and Lower EFSFSR.

1. Meadow Creek POC Area

The Perpetua proposed monitoring network for the Meadow Creek POC area consists of three indicator wells: one paired location with wells screened in alluvium and bedrock, and another downgradient location screened in alluvium.

2. Middle EFSFSR between Meadow Creek and YPP Area

The proposed monitoring network for the Middle EFSFSR between Meadow Creek and YPP Area consists of indicator wells: one paired location with wells screened in alluvium and bedrock, and another downgradient location screened in alluvium.

3. Middle EFSFSR below YPP Area

The proposed monitoring network for the Middle EFSFSR below YPP Area consists of four indicator wells: two paired locations with wells screened in both alluvium and bedrock.

4. Sugar Creek Area

The proposed monitoring network for the Sugar Creek Area consists of three indicator wells: one paired location with wells screened in alluvium and bedrock, and another upgradient location screened in alluvium.

5. Lower EFSFSR Area

The proposed monitoring network for the Lower EFSFSR Area consists of two POC wells: a paired location with wells screened in both alluvium and bedrock.

DEQ Determination for POC and Indicator Wells

DEQ's review of the application and supporting documents concludes that the application's proposed POC groundwater monitoring network is insufficient to adequately assure groundwater is protected outside the mine areas, specifically considering the interconnection of groundwater and surface water at the site. DEQ's POC monitoring network determination is provided in Table 2 and shown in attached Figures 1 and 2. The DEQ POC determined monitoring network consists of 9 POC wells (1 existing) and 10 indicator wells (2 existing) installed in alluvium and bedrock groundwater systems. Following is a breakdown of DEQ's POC and indicator well monitoring requirements, which are organized by mining area to specifically monitor downgradient concentrations of predicted contaminant plume(s) prior to groundwater discharge to surface water:

1. Tailings Storage Facility (TSF), TSF Buttress, and Hanger Flats Pit Monitoring Network

The TSF/Buttress/Hanger Flats Pit POC monitoring network consists of five monitoring wells: three alluvial POC wells, one alluvial indicator well, and one bedrock indicator well. Approximate monitoring locations are given in Table 2 and shown in Figure 1.

2. Ore Processing Facility Area POC Monitoring Network

The Ore Processing monitoring network consists of two wells: one paired location with an alluvial POC well and a bedrock indicator well. Approximate monitoring locations are given in Table 2 and shown in Figure 1.

3. Fiddle Creek Area POC Monitoring Network

The Fiddle Creek monitoring network consists of one POC monitoring well completed in alluvium. The approximate monitoring location is given in Table 2 and shown in Figure 1.

4. West End Pit Area POC Monitoring Network

The West End Pit monitoring network consists of three monitoring wells: one paired indicator location with wells completed in alluvium and bedrock and one alluvial POC well. Another downgradient well pair in Sugar Creek will also monitor potential impacts from this mining area, which are predicted to commingle with contaminant migration from the Yellow Pine Pit. Approximate monitoring locations are given in Table 2 and shown in Figure 2.

5. Yellow Pine Pit Area POC Monitoring Network

The Yellow Pine Pit monitoring network consists of eight monitoring wells: four paired locations with wells completed in alluvium and bedrock. This network includes two alluvial POC wells, one bedrock POC well, two alluvial indicator wells, and three bedrock indicator wells. Approximate monitoring locations are given in Table 2 and shown in Figure 2.

New POC Well Installation Work Plan and Schedule

A well installation work plan and schedule for the new POC and indicator wells will be provided to DEQ for approval no later than 30 calendar days prior to commencement of drilling

activities.

The work plan will specify approximate new well locations, drilling method(s), expected borehole depths, well construction details and development procedures. Exact well locations will be determined during a well siting visit arranged by Perpetua with DEQ staff in attendance. Following installation of the wells, Perpetua shall provide a well completion report (well lithology, construction details, completion logs, sampling/development record, coordinates, and elevation in a readily accessible coordinate system, etc.) for inclusion in the first annual report following installation of the well(s).

Perpetua will provide DEQ with daily activity reports during well drilling and installation activities. Daily activity reports should include the drilling progress, type of materials encountered (geologic formations), all depths at which formation water is encountered, unexpected conditions, and any other information that may aid DEQ in evaluating the well. Daily reports are to be sent to megan.clark@deq.idaho.gov or other designated DEQ employee. DEQ also requests that to the extent possible coordination calls be held prior to execution of major deviations from the approved Well Installation Work Plan.

Perpetua is responsible for acquiring access to wells and/or areas owned or controlled by other federal, state, or private entities for sampling or well installation. If access is unobtainable for some reason, DEQ will consider alternate locations for well placement.

Groundwater Monitoring and Reporting

With DEQ's POC determination, Perpetua is required to monitor groundwater quality and report results. Groundwater monitoring and reporting should be performed in accordance with IDAPA 58.01.11.401.04.a-c.

Groundwater Monitoring Plan

Groundwater monitoring should be performed in accordance with a Groundwater Monitoring Plan, which Perpetua shall submit to DEQ for review and approval within 60 days from the date of this determination. The monitoring plan should include, but is not limited to, a sampling and reporting schedule, analyte list (consistent with Table 1 of this POC determination), well sampling procedures, data quality procedures (described in a quality assurance project plan (QAPP)), and a background groundwater quality analysis.

Constituents to Monitor

The constituents listed in Table 1, with the addition of dissolved fraction metals, will be monitored for each sampling event and reported annually. Constituents may be removed or added to the list after a written request from Perpetua or governing Agency and agreement between all parties or at the request of DEQ.

Quality Assurance Project Plan (QAPP)

All groundwater monitoring activities should be conducted in accordance with a QAPP, which should be submitted with the Groundwater Monitoring Plan for DEQ review and approval. The

QAPP should be prepared in accordance with EPA Requirements for Quality Assurance Project Plans and must include, at a minimum, all elements related to Project Management, Data Generation and Acquisition, Assessment and Oversight, and Data Validation and Usability described in the EPA requirements (EPA 2001).

Background Groundwater Quality Analysis

According to IDAPA 58.01.11.401.04.a-b, groundwater monitoring data must represent the quality of background groundwater that has not been affected by the proposed mining activity. As part of the Groundwater Monitoring Plan, Perpetua must submit a background groundwater quality analysis for DEQ review and approval-. The analysis will provide background concentration limits (BCL) for each existing POC location and constituent. The analysis will provide sufficient detail to be reproducible and an electronic copy of the data used the for the analysis should also be included.

Development of BCLs will follow DEQ's statistical guidance (DEQ 2014) or other statistical methods, as pre-approved by DEQ, for determining background. For background determinations please note: DEQ will allow the existing POC and indicator wells to be used to establish background water quality, determined on a well-by-well basis, until such a time a well is deemed by DEQ to be impacted by mining activities.

Data Summary Notice

If data indicate numerical groundwater quality standards (IDAPA 58.01.11.200.01) or DEQ approved background level standards (IDAPA 58.01.11.200.03) may be exceeded at the POC boundary area, DEQ requires a data summary notice be prepared and submitted to DEQ no later than 60 days after the last sample is collected during a particular field event (e.g., monthly, quarterly, spring, fall). The summary will include notification of any groundwater quality standard or DEQ approved BCL exceedance and all data collected during the event.

Annual Report

An annual report is due on or before March 31 of each year for the preceding year or as required under the approved Groundwater Monitoring Plan. The report is to include a summary of data collected during the reporting period, discussion of any anomalous or unexpected data, and an updated database containing all available validated water quality data from all POC and indicator wells in an electronic, easily editable format such as Excel or Access files.

Identification of any possible data gaps, or unanticipated changes in water quality, flow direction, or site conditions, should also be presented and discussed. As such, DEQ will determine based upon the information submitted, Perpetua's compliance with groundwater quality standards and the effectiveness of the best management practices for the mine activities. The report shall identify proposed or approved background concentrations for constituents identified in Table 1. Perpetua shall also include a well completion report for all wells drilled during the reporting cycle.

Public Comment Summary and Responses

DEQ conducted a public comment period from May 4, 2023, until July 3, 2023, and received comments from: (1) Perpetua Resources, and (2) combined comments from the Idaho Conservation League (ICL), Idaho Rivers United (IRU), and Save the South Fork Salmon (SSFS). DEQ's response to comments is attached hereto as Exhibit A.

DEQ incorporated applicable comments into this final POC determination. This includes updates to the analyte list and a revision to specify that an exceedance at a POC will require a data summary notice be submitted to DEQ. Comments regarding specific well locations and construction will be taken into consideration by DEQ during review of the Well Installation Work Plan and during the pre-drilling site visit, during which final monitoring well locations will be selected. Other comments, such as those regarding hydrogeologic conditions in specific portions of the site, will be considered during analysis of groundwater monitoring results and model evaluation.

References

DEQ (Idaho Department of Environmental Quality). 2014. Statistical Guidance for Determining Background Ground Water Quality and Degradation. Boise, ID: DEQ.

EPA (Environmental Protection Agency). 2001. *EPA Requirements for Quality Assurance Project Plans*. Washington, DC: EPA.

Idaho Administrative Procedures Act (IDAPA). 2020. Groundwater Quality Rule. IDAPA 58.01.11. Accessed April 2023. <https://adminrules.idaho.gov/rules/current/58/580111.pdf>

Perpetua (Perpetua Resources Idaho, Inc.) 2022. *Stibnite Gold Project Point of Compliance Application*. Boise, ID: Perpetua.

Table 1.
Groundwater Analyte List

Analyte	Analytical Method	Fraction	Unit	Numeric Water Quality Standards		
				Groundwater		
				Idaho GWQS (mg/L)	Primary/Secondary Standard ^{a, b}	
General Parameters						
Depth to Groundwater	Field Measurement	--	ft bgs	--	--	--
pH	Field Measurement	N	S.U.	6.5 to 8.5	b	Secondary
Specific Conductivity	Field Measurement	N	mS/cm	--	--	--
Dissolved Oxygen	Field Measurement	N	mg/L	--	--	--
Oxidation Reduction Potential	Field Measurement	N	mV	--	--	--
Alkalinity	SM 2320B	N	mg/L	--	--	--
Total Hardness	USEPA SW6020B	T	mg/L	--	--	--
Total Suspended Solids	SM 2540D	N	mg/L	--	--	--
Total Dissolved Solids	SM 2540D	N	mg/L	500	b	Secondary
A/C Balance (+/-5%)	SM 1030E	N	%	--	--	--
Total Organic Carbon	SM 5310C	D	mg/L	--	--	--
Temperature	Field Measurement	N	°C	--	--	--
Turbidity	USEPA E180.1	N	NTU	--	--	--
Major Ions						
Calcium	USEPA 6010C	T/D	mg/L	--		--
Chloride	USEPA E300.0	N	mg/L	250	b	Secondary
Magnesium	USEPA 6010C	T/D	mg/L	--		--
Potassium	USEPA 6010C	T/D	mg/L	--		--
Sodium	USEPA 6010C	T/D	mg/L	--	--	--
Sulfate	USEPA E300.0	N	mg/L	250	b	Secondary
Nitrate	USEPA 353.2	N	mg/L	10	a	Primary
Metals						
Aluminum	USEPA SW6020A	T/D	mg/L	0.2	b	Secondary
Antimony	USEPA SW6020A	T/D	mg/L	0.006	a	Primary
Arsenic	USEPA SW6020A	T/D	mg/L	0.05	a	Primary
Cadmium	USEPA SW6020A	T/D	mg/L	0.005	a	Primary
Copper	USEPA SW6020A	T/D	mg/L	1.3	a	Primary
Iron	USEPA SW6020C	T/D	mg/L	0.3	b	Secondary
Lead	USEPA SW6020A	T/D	mg/L	0.015	a	Primary
Manganese	USEPA SW6010C	T/D	mg/L	0.05	b	Secondary
Mercury	USEPA SW1631E	T/D	mg/L	0.002	a	Primary
Thallium	USEPA SW6020A	T/D	mg/L	0.002	a	Primary
Zinc	USEPA SW6020A	T/D	mg/L	5	b	Secondary

Notes:

a Primary numeric GWQS (Groundwater Quality Rule IDAPA §58.01.11 [Idaho Department of Administration 2021]).

b Secondary numeric GWQS (Groundwater Quality Rule IDAPA §58.01.11 [Idaho Department of Administration 2021]).

Acronyms and Abbreviations:

-- = not available

°C = degree Celsius

A/C = anion/cation

D = dissolved

ft bgs = feet below ground surface

GWQS = groundwater quality standard

IDAPA = Idaho Administrative Procedures Act

mg/L = milligram per liter

mS/cm = milliSiemens per centimeter

mV = millivolt

N = primary sample

NTU = nephelometric turbidity unit

SM = standard method

S.U. = standard unit

T = total

USEPA = United States Environmental Protection Agency

Table 2. Point of Compliance Monitoring Network

Well ID	Screened Formation	Status	Proposed By	Dec_Long	Dec_Lat	Installation Schedule	Data Objectives
Yellow Pine Pit Wells							
Final Determination POC Wells							
POC-1A	Alluvium	New	POC – Perpetua	-115.341708	44.937625	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
POC-1B	Bedrock	New	POC – Perpetua	-115.341685	44.937702	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
GW-4A	Alluvium	New	Ind. – Perpetua POC – DEQ	-115.331934	44.935138	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
Final Determination Indicator Wells							
GW-40A	Alluvium	Existing	Ind. – Perpetua	-115.337068	44.934097	--	Monitor alluvial groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from Yellow Pine Pit.
GW-40B	Bedrock	New	Ind. – Perpetua	-115.337083	44.934136	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from Yellow Pine Pit.
GW-38A	Alluvium	Existing	Ind. – Perpetua	-115.336036	44.934892	--	Monitor alluvial groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from Yellow Pine Pit.
GW-39B	Bedrock	New	Ind. – Perpetua	-115.336036	44.934892	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from Yellow Pine Pit.
GW-4B	Bedrock	New	Ind. – Perpetua	-115.331907	44.935065	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from Yellow Pine Pit and West End Pit.
West End Pit Wells							
Final Determination POC Wells							
GW-18A	Alluvium	New	Ind. – Perpetua POC – DEQ	-115.325001	44.937978	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
Final Determination Indicator Wells							
GW-46A	Alluvium	New	Ind. – DEQ	-115.321017	44.935917	At least 3 years prior to possible or predicted impacts from operations.	Monitor alluvial groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from West End Pit.
GW-46B	Bedrock	New	Ind. – DEQ	-115.320976	44.935883	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Verify predicted contaminant migration from West End Pit.
Fiddle Creek Wells							
Final Determination POC Wells							
GW-15A	Alluvium	Existing	Ind. – Perpetua POC – DEQ	-115.331208	44.920747	--	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected. Monitor potential impacts from mining activities above the Yellow Pine Pit and tunnel diversion, and downgradient of growth media stockpile and haul road.
Ore Processing Facility Wells							
Final Determination POC Wells							
GW-42A	Alluvium	New	Ind. – Perpetua POC – DEQ	-115.328906	44.915179	At least 3 years prior to possible or predicted impacts from operations.	Monitor alluvial groundwater quality and flow direction, and potential impacts from the ore stockpiles and crusher operation north of the Ore Processing Facility.
Ore Processing Facility Wells							

Table 2. Point of Compliance Monitoring Network

Well ID	Screened Formation	Status	Proposed By	Dec_Long	Dec_Lat	Installation Schedule	Data Objectives
Final Determination Indicator Wells							
GW-42B	Bedrock	New	Ind. – Perpetua	-115.328882	44.915269	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality and flow direction, and potential impacts from activities associated with ore processing.
Tailings Storage Facility, Buttress, and Hanger Flats Pit Wells							
Final Determination POC Wells							
GW-44A	Alluvium	New	POC – DEQ	-115.331132	44.909042	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected. Verify predicted downgradient end of contaminant migration from Hangers Flat Pit and Buttress source areas.
GW-43A	Alluvium	New	Ind. – Perpetua POC – DEQ	-115.329127	44.903653	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
GW-33A	Alluvium	New	Ind. – Perpetua POC – DEQ	-115.329584	44.900575	At least 3 years prior to possible or predicted impacts from operations.	Monitor groundwater quality to assure IDAPA 58.01.11 standards are met at and beyond this location and assure surface water quality is protected.
Final Determination Indicator Wells							
GW-33B	Bedrock	New	Ind. – Perpetua	-115.329698	44.900626	At least 3 years prior to possible or predicted impacts from operations.	Monitor bedrock groundwater quality, flow direction, and verification of the POC groundwater fate and transport model.
GW-45A	Alluvium	New	Ind. – DEQ	-115.331946	44.900297	At least 3 years prior to possible or predicted impacts from operations.	Monitor alluvial groundwater quality, flow direction, and verification of the POC groundwater fate and transport model. Monitor highest predicted contaminant concentrations directly downgradient Hangers Flat Pit and Buttress source areas.

Notes:
Approximate well coordinates are provided in decimal degrees, Dec_Long – decimal degrees longitude, Dec_Lat – decimal degrees latitude
POC – Point of Compliance
Ind. – Indicator well

Figure 1. POC Monitoring Network Wells TSF/Buttress/Hanger Flats Pit Area and Ore Processing Area

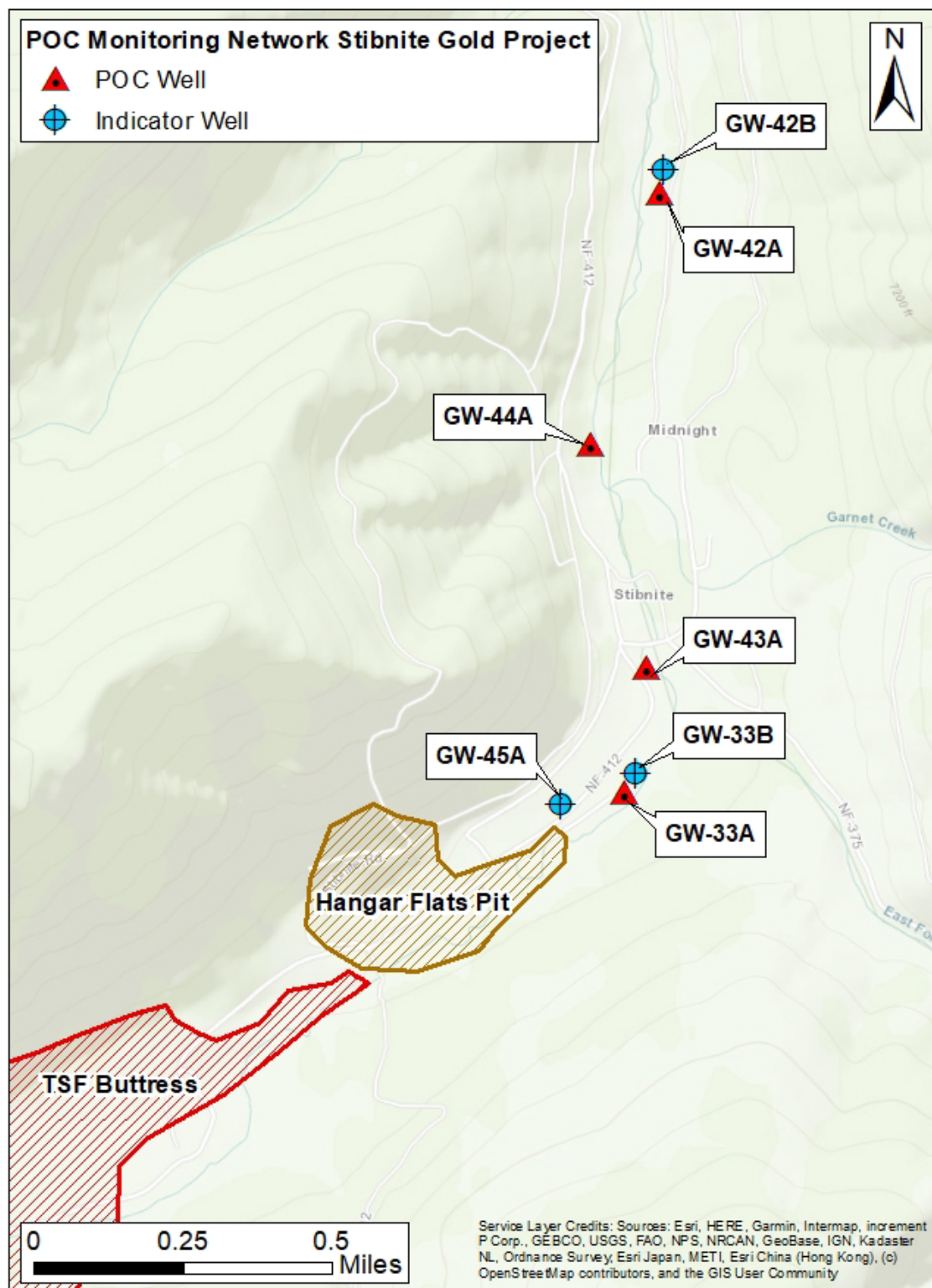


Figure 2. POC Monitoring Network Wells Fiddle Creek, Yellow Pine Pit, and West End Pit Areas

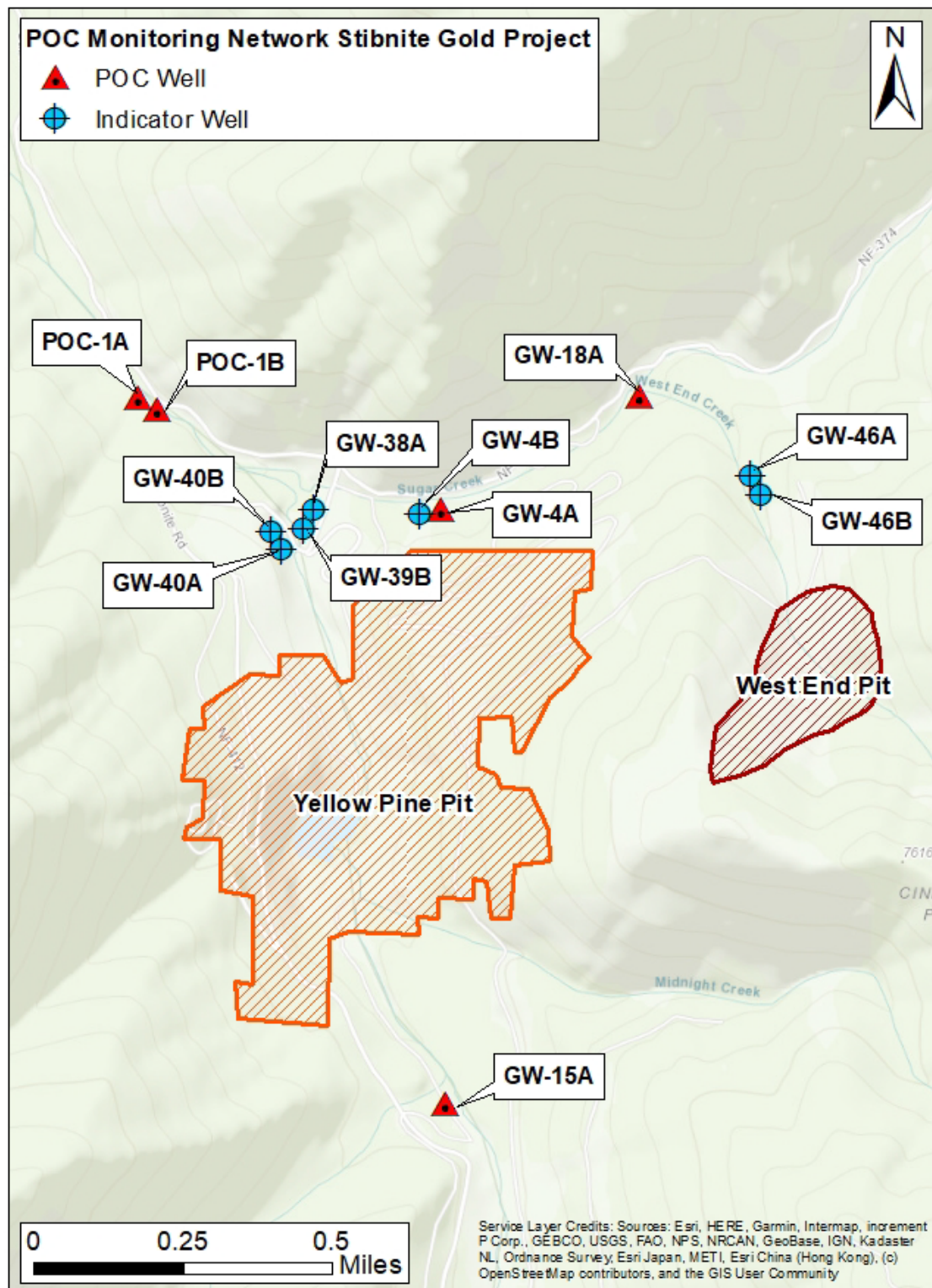


EXHIBIT A

**DEQ Response to Comments – Stibnite Gold Project (SGP) Point of Compliance (POC) Draft
Determination**

Response to Comments from Idaho Conservation League, Idaho Rivers United, and Save the South Fork Salmon

1. Technical Comments

- a. Comment Summary: Request for additional indicator monitoring well(s) downgradient of the Hangar Flats pit and near the Gestrin feature.

Response: The Gestrin feature is an inferred zone of higher permeability identified by pump tests and used to refine hydraulic conductivity values in the Stibnite Hydrologic Site Model (SHSM) (BC 2021). The feature is incorporated in model layers 1, 2, and 3, which represent alluvium and the alluvial-bedrock interface. The higher permeability zone is not present in deeper model layers 4 and 5, which represent bedrock in the model area. The Gestrin feature is not a geologic structure and, based on the locations of mine features and the Gestrin feature, it will likely be mined through. Additionally, the Hangar Flats Pit extends into bedrock, and particle tracking simulations do not suggest significant contaminant migration through bedrock model layers downgradient of the Hangar Flats Pit (Perpetua Response to Stibnite Gold Project Point of Compliance (POC) Application, March 7, 2023, Fig. 36 – 44 (BC 2023b)). In general, while local bedrock fractures may discharge to alluvium or surface water, site geology and bedrock aquifer tests do not suggest an extensive fractured bedrock system with preferential flow paths. Further, the exact location of indicator wells GW-45A and GW-33A/B will be determined in a subsequent work plan approved by DEQ and the well locations will be considered in relation to the Gestrin feature. Results from proposed indicator wells (GW-45A and GW-33A/B) will be used to confirm model results, and corrective actions will be implemented if triggered, including potential installation of additional wells.

- b. Comment Summary: Request that the impact of pumping wells on flow paths be evaluated during mining operations.

Response: Model results for pit dewatering at Hangar Flats indicate a predicted decrease in alluvial groundwater concentrations after mine year 5. Predicted drawdowns from modeling indicate flow paths towards the middle of the pits, with rapid recovery during reclamation. Additionally, in the proposed network, monitoring of water quality and water elevations will be required, and any adjustments necessary based on reported concentrations or flow paths will be made. Furthermore, well GW-44A was placed to confirm the downgradient boundary of the predicted contaminant plume and is intended to capture groundwater impacts not detected in GW-33A and GW-43A.

- c. Comment Summary: Request for additional alluvial monitoring point upgradient of wetlands located in between the TSF buttress and GW-33A.

Response: It is unclear which wetlands ICL is referencing in this comment. However, many on-site wetlands are within the mining area footprint and will be restored during mine closure, in accordance with the *Wetlands and Riparian Resources Specialist Report* (USDA 2022).

- d. Comment Summary: Request for additional bedrock detection monitoring in the section of EFSFSR between Garnet and Fiddle Creeks.

Response: Bedrock groundwater should be sufficiently monitored in this area at GW-42B. However, if monitoring at this location or GW-33B suggests increases in concentrations higher than predicted, or if data provide clarity regarding the groundwater recharge mechanism along this reach, further monitoring and investigation will be considered.

- e. Comment Summary: Request for monitoring downgradient of Gestrin feature.

Response: See response to item 1.a.

- f. Comment Summary: Additional monitoring upgradient of POC well GW-18A, prior to fault intersection with and potential discharge to Sugar Creek.

Response: An extensive bedrock groundwater flow system has not been found underlying the site. Bedrock flow is limited to within fractures and faults. Bedrock fractures and fault zones at the site generally contain some non-transmissive zones of gouge and other low-permeability alteration materials, which likely inhibit regional-scale groundwater flow. However, DEQ recognizes that locally transmissive bedrock features may discharge to alluvium and surface water. The location of GW-18A is in the general area of where the fault described by ICL intersects Sugar Creek. The exact location of GW-18A will be specified in a subsequent work plan, which will be approved by DEQ. The location of GW-18A as it relates to fault intersection with Sugar Creek will be considered in selection of the well location.

- g. Comment Summary: Request that bedrock indicator wells downgradient of West End Pit are sufficiently deep to monitor impacted releases.

Response: This comment will be incorporated into the subsequent well installation work plan, which will be approved by DEQ.

2. Background Quality Analysis

Comment Summary: Request for public comment on background quality analysis.

Response: Section 401.05 of the Idaho “Ground Water Quality Rule” (Rule) states: “The Department may provide public notice and an opportunity for public comment prior to setting or changing the point(s) of compliance.” However, no part in Section 401 of the Rule requires public notice and an opportunity for public comment on groundwater monitoring or reporting, which occur when DEQ sets the point(s) of compliance. Public notice and response to comment(s) on workplans or annual reports submitted to DEQ as part of POC compliance represents an undue burden. Regardless, subsequent documents submitted to DEQ as required under monitoring and reporting will be available under the Idaho Public Records Law, Idaho Code § 74-101, *et seq.*

3. Monitoring Schedule and Environmental Monitoring Plan

- a. Comment Summary: Request specific language for monitoring schedule.

Response: Section 401.05 of the Rule states: “The Department shall require ground water monitoring and reporting whenever the Department sets point(s) of compliance.” In accordance with that requirement, under “Groundwater Monitoring and Reporting” in the POC determination, DEQ requires Perpetua to submit a background groundwater quality analysis for DEQ review and approval. The report will provide background concentration limits for each POC and COI, derived from monitoring data that represents the quality of background groundwater that has not been affected by the proposed mining activity. Development of background concentration limits will follow DEQ’s *Statistical Guidance for Determining Background and Ground Water Quality and Degradation* (Statistical Guidance) (DEQ 2014) or other statistical methods, as pre-approved by DEQ, for determining background. Section 3.4 of DEQ’s Statistical Guidance recommends a sample size of 12 independent samples for most statistical methods outlined in the guidance. This sample size is typically achieved by, at minimum, 3 years of quarterly sampling.

- b. Comment Summary: Request for public comment on environmental monitoring plan.

Response: See response to item 2.

4. Data Summary Notice

Comment Summary: Request language to require exceedance notification.

Response: Language in the Final determination will be modified to require notification of any exceedance. Language will be updated to state:

“If data indicate numerical groundwater quality standards (IDAPA

58.01.11.200.01) or DEQ approved background level standards (IDAPA 58.01.11.200.03) may be exceeded at the POC boundary area, DEQ ~~may request~~, *requires (emphasis added)* a data summary notice be prepared and submitted to DEQ no later than 60 days after the last sample is collected during a particular field event (e.g., monthly, quarterly, spring, fall)."

5. Annual Report

Comment Summary: Request for groundwater model update every 3-5 years.

Response: While modeling updates are not specifically required, the POC monitoring network is designed to represent the quality of groundwater passing the point(s) of compliance (58.01.11.401.04.a.i) and evaluate modeling results, predict the quality of groundwater at point(s) of compliance, and determine the effectiveness of best management practices. Should water monitoring results from indicator wells or POC wells indicate possible groundwater contamination, DEQ requires actions including, but not limited to, investigation and evaluation, which may indicate the need to update groundwater modeling.

6. Constituents to Report

- a. Comment Summary: Request for additional explanation regarding Constituents of Interest (COI) determination process and for inclusion of additional COIs (lead, chromium, and selenium).

Response: COIs were determined by applying standard monitoring requirements from previous POC Determinations issued by DEQ. This list includes field parameters, common ions, and metals or other naturally occurring constituents which are typically associated with mining activities. In combination, these constituents can be used to monitor mining activities for compliance with the Rule and identify specific contaminant sources within the mining area. Further, background concentrations and geochemical modeling results submitted by Perpetua as part of the POC application were utilized to determine any additional constituents which are predicted to be elevated in waste rock, process water, or mobilized as a result of operations. In response to the three constituents mentioned in the comment, lead will be added to the list of COIs due to occasional detections in concentrations exceeding the MCL during the baseline study. However, based on background data and geochemical modeling, chromium and selenium are not elevated nor predicted to increase as a result of operations. Therefore, these constituents will not be added to the monitoring plan.

- b. Comment Summary: Clarification regarding how long monitoring will continue downgradient of the West End pit lake.

Response: Section 401 of the Rule provides no requirements or process to end monitoring required as part of a POC determination. To date, no POC determinations issued by DEQ under Section 401 of the Rule have completely ceased monitoring. Regardless, any change to the POC under Section 401.08 requires DEQ approval and is handled as an application submitted pursuant to Section 401.02.1.

7. Compliance and Enforcement Violations

Comment Summary: Request for clarifying information on the approach to POC compliance and enforcement.

Response: In addition to the reporting requirements specified in Section 401.04 of the Rule, Perpetua will be required to comply with all requirements of the Rule. Sections 400.02 and 400.03 of the Rule provide measures to be taken in response to degradation or contamination exceeding a groundwater quality standard. In an instance where compliance is not addressed as required by the Rule, DEQ would follow the enforcement process¹ in accordance with the DEQ Enforcement Procedures Manual.²

¹ <https://www.deq.idaho.gov/public-information/laws-guidance-and-orders/enforcement-process/>

² <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4746>

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- Idaho Department of Environmental Quality (DEQ). 2014. *Statistical Guidance for Determining Background and Ground Water Quality and Degradation*.
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- SRK Consulting, Inc. 2022. *Stibnite Gold Project Point of Compliance (POC) Water Quality Modeling Report*.
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Response to Comment from Perpetua Resources Corp.

1. Legacy of Stibnite

- a. Comment Summary: The draft POC fails to acknowledge the legacy conditions of the mine site.

Response: Existing contamination will be taken into consideration when establishing compliance limits.

- b. Comment Summary: Obligations under the draft POC are unknown.

Response: The obligations under the final POC determination can be found in Idaho's Groundwater Quality Rule, IDAPA 58.01.11, *et seq.*

2. Distinct Mining Areas

Comment Summary: DEQ inappropriately set five mining areas.

Response: Idaho's Ground Water Quality Rule explicitly recognizes that where distinct mining activities occur, the Department may identify separate mining areas.³ Pursuant to its duty to ensure there is no violation of water quality standards to any interconnected surface waters,⁴ as well as its discretion to identify separate mining areas and establish points of compliance,⁵ the draft POC identified five (5) separate mining areas. No change will be made to the draft POC's determination of mining areas.

3. Location of Indicator Well GW-45A

Comment Summary: A well at this location cannot be accommodated.

Response: Well locations presented in the draft POC determination are approximate. As discussed in the "New POC Well Work Plan and Installation Schedule" section of the POC determination, Perpetua will specify approximate well locations in a well installation work plan and schedule, which will be provided to DEQ. Exact well locations will be determined during a well siting visit with Perpetua and DEQ staff. DEQ intends to accommodate mine design features and will work with Perpetua

³ "The area on or within which one (1) or more mining activities occur. The Department shall determine the boundaries of the mining area as provided in Section 401. Distinct mining activities may constitute separate mining areas." IDAPA 58.01.11.07.22 (emphasis added).

⁴ See IDAPA 58.01.11.401.03.

⁵ IDAPA section 401 directs the Department to "set a point of compliance, or points of compliance" to protect beneficial uses and meet ground water quality standards. IDAPA 58.01.11.401.01 (emphasis added).

during monitoring well siting to identify an appropriate location for indicator well GW-45A.

4. Indicator Wells in lieu of POC Wells

Comment Summary: Arguing that DEQ should only determine one mining area at the site, Perpetua proposed that all POC wells, except POC Wells GW-1A/B, be converted to indicator wells.

Response: DEQ has discretion to establish points of compliance and the POC wells established by DEQ are necessary to ensure there is no violation of water quality standards to any interconnected surface waters. No changes to the POC wells will be made in the final determination. However, as new information is acquired⁶ the number or location of points of compliance may be amended.⁷

⁶ Relevant new information includes, but is not limited to, data from required groundwater monitoring, data from newly installed wells, additional groundwater or interconnected surface water requirements set under other authorities, and any changes to the mine operation and reclamation plans.

⁷ See IDAPA 52.01.11.401.08.