

FEBRUARY 2024

NASDAQ:PPTA TSX:PPTA

## PERPETUA RESOURCES

Responsible Mining. Critical Resources. Clean Future.

www.perpetuaresources.com

### **STIBNITE GOLD PROJECT**

Coeur d'Alene







## THE STIBNITE GOLD PROJECT

Our goal is to transform an area abandoned after 100 years of mining activity into a national strategic asset for critical mineral and gold production through responsible mining and a sustainable approach to restore the environment for the benefit of all stakeholders.



### **THE PERPETUA WAY** RESPONSIBLE. RESTORATIVE. CRITICAL.

We are driven by the understanding that building a strong and successful business starts with doing business the right way.

> We know that economic success and environmental success are inseparable.

We designed our project to restore the environment, create opportunity and benefit communities.





### **NEW PERSPECTIVES**







### Perpetua Resources is changing the face of mining.

- Community Agreement in 2018
- ✓ Adopted ESG policy in 2019
- ✓ Updated ESG policy in 2021
- Published GHG emissions inventory 2021 & 2022
- ✓ Citizen's water monitoring program 2021
- Annual Sustainability Reporting
- ✓ 65k+ Trees Planted
- ✓ 8+ years No Reportable Spills
- Dark Skies commitments

#### 2021 ESG Commitments

Published Sustainability Roadmap





### **WORKING TOGETHER**

#### **Community Agreement**

Through a community agreement signed in 2018, the **Stibnite Advisory Council** brings together communities across central Idaho to discuss the challenges and opportunities presented by the Stibnite Gold Project.

- Direct access to company leadership
- Monthly meetings
- Identify opportunities and solutions
- Address questions or concerns
- Citizen's Water Monitoring Initiative (2021)





VILLAGE OF YELLOW PINE + CASCADE + DONNELLY + NEW MEADOWS + RIGGINS + COUNCIL + ADAMS COUNTY + IDAHO COUNTY

### **2022 SUSTAINABILITY REPORTING**



100%

Safe Fuel Hauls (since 2009)

25%

Energy at Stibnite from Solar Power (in 2022) 1,100+

**Community Presentations** (since 2015)

83%

Employees based in Idaho (as of Dec 2022)

**\$60k** In scholarships for local students (since 2015) 100%

of Employees participated in compliance and business integrity training (in 2022)

67%

Female Executive Management (as of Jan 2023)

33%

Diverse Board Members (as of Jan 2023)

https://perpetuaresources.com/wp-content/uploads/2022-Sustainability-Report.pdf

### SUSTAINABILITY ROADMAP

In 2022, Perpetua Resources published a **Sustainability Roadmap** to define our commitments to continually improve our environmental performance, build partnerships with communities and govern the company.

Improve and protect water quality.	Conserve water.	Limit our footprint.	Be a responsible link in the clean energy supply chain.	
Nurture connections with tribal communities & identify opportunities to collaborate.	Foster an open and transparent relationship with local communities.	Create economic partnerships that sustain beyond the life of the mine.	Work with communities & regulators to refine environmental outcomes of the Stibnite Gold Project.	
Develop a diverse and inclusive team.	Disclose and report current and future ESG emissions.	Set science-based GHG emissions target.	Protect our people and our communities.	Adopt a long-term Environment, Social and Governance (ESG) reporting framework.

https://perpetuaresources.com/wp-content/uploads/2022-Perpetua-Sustainability-Roadmap.pdf

# RESTORE AN ABANDONED SITE

#### 1890s

The Thunder Mountain gold rush brings mining to the area

#### 1900-1930

---The town of Stibnite is established

#### 1938

Mining at Yellow Pine pit stops salmon migration upstream

#### \* 1953-1960

With WWII & the Korean War over, mining slowed and Stibnite slowly faded

#### 1970s-1990s

Periodic gold mining by multipleowners and operators

#### 2009-2011

Land ownership consolidated by Midas Gold (now Perpetua Resources). Geology & environment within the Stibnite Gold Project area is studied.

### 1941-1950

Antimony & tungsten declared critical & strategic minerals for the war effort, mining for both occurs at Stibnite.

#### 1960s

Earthen dam failure resulting in - hundreds of tons of sediment eroding into surrounding streams & rivers, even to this day

#### 1990s-2000s

All mining stopped, limited reclamation by owners, operators and state and federal government.



#### neutral by the Americas.

It was Germany's use of high-velocity, tem armor-piercing projectiles with the sear tungsten carbide core that almost made met the north African campaign a successful one. of t

Tungsten production in China began in 1914, and it has been the largest tungsten producer. During the Sino-Japanese War its flow of tungsten was disrupted and stockpiles accumulated in Indochina. One of the great coups of the rearmament race was made by the United States when it purchased this entire stock and delivered it to this country just prior to Pearl Harbor. In the

race for tungsten hur tween victory and defe paying Portugal and S for the critical metal. buying policy of the keep Germany from o cal metal rendered it United States to pay a unit for WO<sub>2</sub>.

But to obtain enoug military program was mestic mines were reo plorations were made, the Yellow Pine dep Idaho.

"In the opinion of the Munitions Board, the discovery of that tungsten mine at Stibnite, Idaho in 1942 shortened World War II by at least 1 year and saved the lives of a million American soldiers."

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The Government in The US Senate Congressional Record, build access roads and open up 1956 The Yellow Pine deposit was a lifes. for this country, but it was geologically a strange phenomenon like a bowl of gin

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### **HISTORICAL** LEGACY

After 100+ years of mining activity, many environmental legacies remain.

#### **TAILINGS**

10.5 million tons of legacy spent ore and unlined tailings interact with ground and surface water



**MEADOW CREEK** 4,900 ft rock lined ditch with limited habitat function





#### **YELLOW PINE PIT**

The East Fork of the South Fork dumps into a legacy mine pit. Currently, ~80 feet of sediment has collected at the bottom



#### **FISH** PASSAGE

**Fish migration** is blocked by the Yellow Pine pit



#### HABITAT 13.000+ ft poor habitat quality



#### **BLOWOUT CREEK VALLEY** 14-foot drop in water table, loss of

wetlands function

#### **BLOWOUT CREEK**

Largest source of sedimentation in the watershed



### **RESTORATION OF BROWNFIELDS SITE**

### SOLUTIONS FOR THE ENVIRONMENT



Early repair of the largest source of sedimentation

METAL LEACHING

Pick up, reprocess, reuse and safely store 10.5M tons of tailings and spent ore



Re-establish fish migration and provide permanent river restoration



## LEGACY

During the World War II era, the East Fork of the South Fork of the Salmon River (EFSFSR) was diverted to facilitate mining of the Yellow Pine pit, cutting off fish passage.

#### TODAY

The East Fork of the South Fork of the Salmon River flows directly into the Yellow Pine pit, blocking fish passage.



### CURRENT CONDITIONS

#### **Existing Yellow Pine pit**

East Fork South Fork Salmon River (EFSFSR) dumps into the Yellow Pine pit. Fish passage blocked for over 80 years. Sediment from Blowout Creek settles in Yellow Pine pit



### **DURING MINING**

#### **EFSFSR Tunnel Passage**

- Immediate fish passage for approximately 15 years.
- Proven technologies for passage, monitoring and restoration.
- Passage for all 3 key species chinook salmon, bull trout and steelhead to miles of stream habitat currently blocked.







**EFSFSR**: East Fork South Fork Salmon River

### **EFSFSR OVER YPP**

#### **Proposed Stream Liner**

- 180 to 360-foot-wide floodplain
- Liner buried 11-16 feet



Drawing Not to Scale

Proposed Stream Liner Details (DRAFT)								
Reach Mine Facility		Approximate Liner Width (ft)*	Layers o	Total Liner Depth				
	Mine Facility		Protection	Armor Layer	Stream Bed and	Below the Floodplain		
			(Transition) Layer (ft)	(ft)	Floodplain Material (ft)	Surface (ft)		
EF3								
HC2	Yellow Pine pit	170 to 345	1.0 to 3.0	5.8 to 6.0	4.2 to 6.8	11.0 to 15.8		
MN2								



### **River and Fish Passage Restored** PERMANENT FISH ACCESS restored for the first time in 80 years.

PERMANENT FISH ACCESS restored for the first time in 80 years. HABITAT RESTORATION built into project beginning in year 11.



OUF

### **LEGACY** *Water reservoir failed in 1965.*

#### TODAY

The failed reservoir is the most significant source of sediment in the watershed. It degrades water quality and fish habitat and diminishes wetland functionality.



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### **BLOWOUT CREEK RESTORATION**

#### CURRENT



#### **INTERMEDIATE**

#### **IMPROVEMENTS**



- Improve water quality in Meadow Creek and EFSF Salmon River.
- Improve habitat conditions.
- ✓ Raise water table in the hanging valley by 14 ft
- ✓ Stabilize the water table
- ✓ Reestablish wetlands habitat.







## LEGACY

Tailings (beige) were covered with spent heap leach ore (brown) after being deposited, unlined, in the Meadow Creek Valley.

#### TODAY

Revegetation attempts have been made; however, legacy materials continue to degrade water quality and leach metals into the surface water and groundwater.

## SPENT ORE DISPOSAL AREA

### **REMOVE & REPROCESS LEGACY TAILINGS**

Restoration follows construction

and operation of TSF and Hangar Flats DRSF within portions of the SODA footprint.

#### **CURRENT**



#### **RESTORATION**

Floodpla)

**Reprocess** 3 million tons of historical tailings & **repurpose** the 7.5 million tons of spent heap leach ore, removing an existing potential source of water degradation.



NOT 151 SCALE

TSF: Tailings Storage Facility | DRSF: Development Rock Storage Facility | SODA: Spent Ore Disposal Area

### WATER QUALITY TODAY

#### Meadow Creek Valley, circa 1940s





### COMMITTMENT TO EARLY RESTORATION

The Administrative Settlement Agreement and Order on Consent (ASAOC) is necessary to allow a third-party to voluntarily address environmental conditions at an abandoned mine site.

The ASAOC does not approve mining activity, it <u>only</u> provides for cleanup activity of legacy waste and is separate from the NEPA process reviewing the Stibnite Gold Project

### **SOLUTIONS START NOW**

#### **Perpetua Takes Action to Restore the Site**

Perpetua signed an ASAOC with federal agencies in 2021, in order to perform agreed upon early actions to improve water quality conditions at Stibnite.

**Comprehensive Clean Up:** Immediate, timecritical needs are addressed over 4 years; once the Stibnite Gold Project is permitted, and all parties agree, the Agreement allows for a comprehensive site cleanup.

**Phase 1:** The first phase of work began in July 2022 and was continued during the summer of 2023.



#### **CLEANUP STARTS TODAY** A PATH FORWARD FOR STIBNITE

In a signed agreement with federal agencies, Perpetua has volunteered to remove and safely store over 325,000 tons of legacy tailings & waste and divert and line streams to help keep clean water clean.



Stibnite Gold Project ASAOC Phase 1 Removal Actions

Legacy Mining Wastes

Perennial Stream

Other Stream

Lakes

#### Legend

 $\otimes$ 

Removal - Destination Location Removal - Source Location Potential Borrowsites Adit Investigation Location

Stream Diversion



DMEA

**Spoil Site** 

Bradlev

**Fiddle Borrow Site** 

DMEA Waste Rock Dump Removal Area

DMEA Ad

Repository

langar

**Smelter Flats** 

Diversion

Hennessy

Diversion

Northwest Bradley

**Dumps Removal** 

**Northwest Bradley** 

**Dumps Spoil Site** 

Bradley Man Camp Dumps Removal

Offices & Facilities

Garnet Cre

Lower Meadow Creek

**Tailings Removal** 

Camp

### **INDUSTRY** AND THE **ENVIRONMENT** CAN **WORK TOGETHER**

Invest \$1 billion in Idaho **Provide** well-paid jobs to Idahoans Grow economic opportunity with an estimated \$43 million in direct annual payroll during operations & \$86 million in local and state taxes\*

### **ECONOMY** + ENVIRONMENT

**Reprocess** historical tailings **Restore** fish passage **Repair** historically impacted waterways **Remediate** areas contributing to water degradation Rehabilitate habitat and natural vegetation

Reuse materials on site



\*Based on the 2014 Pre-Feasibility Stud



### **IDAHO JOBS**

IN IDAHO, ~2 INDIRECT JOBS CREATED FOR EVERY DIRECT JOB IN MINING.

- 2-3-year construction period\*
  Approx. 600-700 direct jobs in Idaho
  Average wage: \$70,000
  Average annual payroll ~ \$34 million
- 12-15-year operating life\*
  Approx. 500-600 direct jobs in Idaho\*
  Average wage: \$80,000\*
  Average annual payroll ~\$42 million
  \* (Life of mine average)
- **3-5-year final reclamation and closure\***Approx. **50-200 direct jobs in Idaho**Average wage: **\$60,000**



NOTE: Based on the 2014 PFS, which is intended to be read as a whole and sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the PFS and FS. See "Regulatory Information" at the end of this presentation.



### ~\$1 BILLION INVESTMENT

~\$1 billion total construction and investment
 37 miles of road: new and upgraded roads including 5 bridges
 72 miles of transmission line: new and upgraded 138 kV power line and 5 new substations
 57,000 cubic yards concrete
 5,580 tons of rebar
 7,730 sq ft of masonry
 9,555 tons of structural steel: 106,000 sq ft steel decking, 3,200 linear ft ladders and stairs, 26,500 linear ft handrail, 768,000 sq ft. roofing and siding

\* Information is based on the 2014 PFS which is intended to be read as a whole, sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the PFS. See "Regulatory Information" at the end of this presentation.

### **ECONOMIC OPPORTUNITIES**

#### **DIRECT BENEFITS\***

- \$232 million in average annual expenditures
- \$42 million in annual payroll (operations)
- \$329 million in federal corporate income taxes
- \$86 million in state and local taxes and mine license fees
- \$3.8 million in local taxes for schools, government, law enforcement, etc

#### **DIRECT, INDIRECT AND INDUCED BENEFITS\***

- \$506 million in Federal Taxes
- \$218 million in State and Local Taxes
- \$152 million in sales transactions in the regional economy
- \$298 million annually in sales transactions in Idaho

#### \$100M spent in Idaho 2014-2022













<sup>\*</sup> Information is based on the 2014 PFS which is intended to be read as a whole, sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the PFS. See "Regulatory Information" at the end of this presentation.

# CRITICAL RESOURCES

### **GOLD** 4.8 MILLION OUNCES OF GOLD (Reserve)

#### **ANTIMONY 148 MILLION POUNDS OF ANTIMONY** (Reserve) Total resource ~216 million pounds

Total resource ~6 million ounces.



51 Sb Antimony 21.760

The **Stibnite Gold Project** would be the 4<sup>th</sup> largest US gold operation by grade and likely produce between ~4-5 million ounces of gold. \*

Half of all gold is used for jewelry. Other uses include currency and industrial purposes, in aerospace, technology and medical equipment. The **Stibnite Gold Project** would be the only domestic source of mined antimony, expected to produce ~115 million pounds.\*

> Critical for the defense and technology sectors, the United States uses **56.7 million pounds** of antimony each year, but we are **heavily dependent on China** to supply this strategic mineral.



\* Based on the 2020 Feasibility Study (FS), which is intended to be read as a whole and sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the FS. See "Regulatory Information" at the end of this presentation.



## ATIMONY: Securing & Powering the Future

### **CRITICAL to NATIONAL SECURITY.**

**ANTIMONY TRISULFIDE**: Derived from a high purity form of the critical mineral antimony, antimony trisulfide (stibnite) is an essential component in hundreds of munition types, including primers for small and medium caliber munitions, mortars, artillery, mines, flares, grenades, shoulder launched munitions and missiles



Ukraine War Is Depleting U.S. Ammunition Stockpiles



90% Antimony controlled by China, Russia and Tajikistan.



Only domestic reserve and known domestic mil-spec antimony trisulfide is in Idaho. Perpetua Resources could re-establish domestic antimony production and protect America's future.

Perpetua Resources is estimated to produce enough antimony trisulfide to completely satisfy Defense needs and ~35% of U.S. annual commercial antimony demand in the first six years of production<sup>1.</sup>

Should antimony production in Idaho fail to move forward, there are no immediate alternatives for a domestic source of mil-spec antimony trisulfide and no alternatives for naturally occurring antimony trisulfide that could come online in the near-term at the cost and quantity that the U.S. Department of Defense needs.

**2022 - Department of Defense awarded Perpetua up to \$24.8M** in Defense Production Act funding.

**2024 - Department of Defense conditionally awarded Perpetua up to \$34.6M** in additional Defense Production Act funding.



### **ANTIMONY IN THE DEFENSE SECTOR**

Antimony is critical for national defense



#### **U.S. DEPARTMENT OF DEFENSE** \$59.4M – Defense Production Act Title III \$15.5M – U.S. Army, Defense Ordnance

"Perpetua's Stibnite-Gold Project produced antimony trisulfide for the U.S. ammunition industrial base during World War II and the Korean War, and it is the sole domestic geologic reserve of antimony that can meet Department of Defense (DoD) requirements."

U.S. Department of Defense, Dec 19, 2022



**ANTIMONY TRISULFIDE**: Antimony trisulfide, aka "stibnite", is derived from a high purity form of the critical mineral antimony.

It is an essential component in hundreds of munition types, including primers for small and medium caliber munitions, mortars, artillery, mines, flares, grenades, shoulder launched munitions and missiles.

- Ammunitions
- Ammunition Primers
- **Explosive Formulations**
- Night Vision Goggles
- Military Clothing
- Communication Equipment
- Infrared Sensors
- Precision Optics
- And more



### US CRITICAL MINERAL SUPPLY CHAIN RISK.

**Critical Minerals** are metals and non-metals essential to economic and national security and are vulnerable to supply chain disruptions

- **Antimony** is one of 50 federally listed critical minerals and a strategic defense material
- China & Russia dominate the world antimony supply (>70%)
- U.S. has no primary antimony production
- **Perpetua Resources could re-establish domestic antimony** production and protect America's future
- **2021 Executive Order on Critical Supply Chains** and subsequent report, signals need to evaluate supply chains for critical minerals, semiconductors and battery storage technology
- **2022** <u>National Defense Authorization Act</u> noted concern that nonallied nations control the U.S. supply of antimony and called for reporting on the national stockpile of antimony
- **2022 Through the Defense Logistics Agency**, Perpetua received 2 Small Business Innovation and Research (SBIR) grants to advance study of domestic mil-spec antimony trisulfide
- 2022 Department of Defense awarded Perpetua up to \$24.8M in Defense Production Act funding
- 2024 Department of Defense conditionally awarded Perpetua up to \$34.6M in additional Defense Production Act funding

#### 2022 World Mine Production and Reserves



Source: 2023 USGS Mineral Commodity Summaries

Perpetua Resources is estimated to produce enough antimony trisulfide to completely satisfy Defense needs and ~35% of U.S. annual commercial antimony demand in the first six years of production<sup>1.</sup>

1. Based on the first 6 years of the 2020 Feasibility Study (FS) which is intended to be read as a whole and sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the FS. See "Regulatory Information" at the end of this presentation.

### **DEPARTMENT OF DEFENSE** up to \$59.4M

U.S. Department of Defense has conditionally awarded Perpetua Resources up to \$59.4M in Defense Production Act Title III funding to support advancing the construction readiness of a domestic antimony source.

- Reimbursement for certain costs incurred over 24 months
- Advances construction readiness and the environmental and technical studies required for permitting process.
- No changes to the project design.
- No changes to the authorities of the permitting agencies.

"Perpetua's Stibnite-Gold Project produced antimony trisulfide for the U.S. ammunition industrial base during World War II and the Korean War, and it is the sole domestic geologic reserve of antimony that can meet Department of Defense (DoD) requirements."

U.S. Department of Defense, Dec. 19, 2022





### EXPECTED TO AVERAGE ~35% OF U.S. DEMAND<sup>1,2</sup>

#### **Stibnite Gold Project Recovered Antimony**<sup>2</sup>



#### Stibnite Gold Project - Year of Operation

#### Perpetua Resources plans to re-establish domestic antimony production, protecting America's future

1. Source: 2023 USGS Antimony commodity summary

Antimony (Ibs)

2. Based on the 2020 Feasibility Study (FS) which is intended to be read as a whole and sections should not be read or relied upon out of context. The information in this presentation is subject to the assumptions, exclusions and qualifications contained in the FS. See "Regulatory Information" at the end of this presentation. For a summary of differences between the FS and TRS, see "Cautionary Note and Technical Disclosure" at the beginning of this presentation.

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### **CRITICAL FOR THE AMERICAN FUTURE**

**ANTIMONY (Sb):** A "critical mineral" that is vital to U.S. national security and will support the transition to a green economy



Night Vision Goggles Military Clothing Infrared Sensors Hardening Lead: Bullets & Shrapnel Armor Piercing Projectiles Ammunition Primers



Circuit boards Semi-conductors Electrical switches Fluorescent lighting High-quality clear glass



Copper wiring insulation Lead-acid batteries Liquid-metal batteries Solar panels Wind turbines



### **AMERICAN INNOVATION & AMERICAN MINERALS**

#### **LIQUID METAL BATTERY**

The liquid metal battery fundamentally changes the way power grids operate and enables the transition to carbon-free power grids.

#### **MISSING PIECE FOR NET ZERO GRID**

Ambri's antimony-based, liquid metal battery is the large-capacity, low-cost, reliable, responsible, stationary energy storage for the future.

**ANTIMONY AND CALCIUM**: Developed by a team from MIT, the liquid metal battery technology relies on a calcium ally anode, molten salt electrolyte and a cathode of solid antimony.

**HIGH-CAPACITY**: Grid scale, daily cycle, modular to meet gigawatt deployment.

**LONG-LIFE**: 20+ year useful life.

**LOWER COST**: 30-50% below equivalent lithium-ion (2020-2030).

**IMMEDIATE**: <500 millisecond response time.



#### **A GREEN ENERGY PARTNERSHIP**

Antimony from the Stibnite Gold Project will be used to produce high-capacity, long-term, reliable, and safe clean energy storage batteries.

At the current scope, the partnership will provide enough antimony to **Power ~ 1 Million U.S. homes with solar power for the 20-year battery lifespan.** 

### RESPONSIBLE, SECURE SOURCE of ANTIMONY

#### **MISSING PIECE FOR DECARBONIZED GRID**

- Perpetua has committed to supply a portion of the antimony from the Stibnite Gold Project to Ambri, the liquid metal battery company.
- The current commitment of antimony from the Project can power over 13 Gigawatt hours of energy storage.
- Perpetua and Ambri will also partner to identify opportunities to reduce carbon emissions through renewable energy generation combined with battery storage during operations



### **STIBNITE GOLD LOGISTICS FACILITIES**

Scott Valley, Administrative and Transportation Facility

#### **IN-TOWN JOBS**

Human Resources

Purchasing & Accounting

Administration & Management

Warehousing & Storage

Laboratory

#### **REDUCE TRAFFIC**

Use as point of transportation for staff and site load consolidation

Reduces dust and sediment generated by vehicles

Reduces risk of accidents along route

Reduce greenhouse gas emissions





### **SITE ACCESS**

#### **CURRENT ROUTE (Johnson Creek Alternative)**

The current travel routes to Stibnite, via Johnson Creek to Yellow Pine and Stibnite.

#### **CONSIDERATIONS**

- Public input and feedback
- Proximity to fish-bearing waterways
- Impact on residents and recreationalists
- Safety risks to employees and the public

#### PREFERRED ALTERNATIVE, THE BURNTLOG ROUTE PROMOTES SAFETY

#### 38 miles total.

- 23 miles improving existing road (Burnt Log Road, Meadow Cr. Lookout Rd, & Thunder Mountain Road)
- 15 miles of new road

#### **Benefits**

- Avoids travel along waterways
- 18 fewer miles within 0.5 mile of streams.
- Avoids large avalanche paths along Stibnite Rd.

#### **Safety Considerations**

- All sensitive loads travel under strict best practice protocol and are accompanied by trained spill teams, which along with berms and ditches, minimize spill risk reaching waterways or the Frank Church boundary.
- ~4.3 miles alongside boundary area of the Frank Church
  - 3.3 miles are new road, drain away from the Wilderness, and are not visible from the Wilderness.
  - 1 mile of existing road will receive additional protective ditches and drain away from the wilderness.



### **TRANSPORTATION PLAN**

- Concentrate traffic 6am-8pm Mon-Fri
- Bus workforce from Logistics Facility to project site (Estimate 90% of workforce)
- Approximately 25 round trips per day
- Pilot vehicles will accompany fuel & sensitive loads
- Bypass downtown McCall
- Perpetua Resources will address upgrades at HWY 55 at Warm Lake, Boydston and Dienhard

**BENEFITS:** 

Less traffic Less dust Lower accident risk Lower spill risk Less noise

Current Burntlog Roa

The Stibnite Gold Project represents an estimated 1-3% increase in 2017 traffic levels on Highway 55.



### **PERPETUA TRAFFIC IMPACTS - OPERATIONS**

To/From SH-55 to the Stibnite Gold Logisitics Facility

Main Road	Direction of Travel	Annual Average Daily Traffic <sup>1</sup>			Percent Vehicles	Number	Percent
		Existing AADT	Perpetua Added Trips	Total	from Perpetua	of Heavy Vehicles	Heavy Vehicles
SH-55	North of Warm Lake	4,900	52	4,952	1.1	8	0.1
	South of Warm Lake	4,900	104	5,004	2.1	17	0.3
Warm Lake Rd	N/A	1,670	156	1,826	8.5	25	1.4

<sup>1</sup> Supplemental Draft Environmental Impact Statement (SDEIS), 2022

### **TRANSMISSION LINE UPGRADE**

Project will upgrade ~72 miles of transmission line at company's expense





#### INCREASED POWER AND RELIABILITY

- Upgrade current 69-kV to 138-kV
- New and upgraded substations
- Costs will be incurred by Company, not Idaho Power rate payers.
- We proposed changes to the route to reduce environmental impact and improve location for local residents.



### TAILINGS SAFETY 101

#### THE STIBNITE GOLD PROJECT TAILINGS STORAGE FACILITY WILL BE:

Best Practice For Tailings Facility -Design

No known failures for facilities with these design characteristics

Added benefits

- Downstream constructed
- Made with compacted rockfill
- ✓ Fully lined
- Reviewed by an independent expert
- Buttressed to double the factor of safety
- Designed and regulated in the U.S. 90% contained by mountains



### **TAILINGS FACILITY STABILITY**

FOS: Factor of Safety



### **TSF/BUTTRESS DESIGN CONFIGURATION**



- Rockfill with downstream raises to maintain freeboard
- ✓ Composite-lined
- ✓ Surface water diverted
- Underdrains
- Over-liner drainage/pore pressure relief



#### **TSF**: Tailings Storage Facility

### FINANCIAL ASSURANCE

MAKING SURE FUNDING FOR RESTORATION IS AVAILABLE INCASE OF DEFAULT

Before mining can begin, we must set aside protected funds to guarantee the reclamation of the project.

- Laws have recently changed; projects must now set aside funding for reclamation calculated based on the actual cost of reclamation and closure which includes on site-specific conditions and third-party contractor costs. The calculation also includes an extra percentage for contingency and long-term water treatment.
- 2. Perpetua has suggested that financial assurance for the Stibnite Gold Project incorporate **restoration standards** where possible.
- 3. Financial Assurance for the Stibnite Gold Project will be **evaluated in phases and reviewed** at a minimum of every five years to ensure the amounts are correct and adaptive.
- 4. Perpetua will **not** be using a **"Corporate Guarantee"** as a tool for financial assurance and instead will look to traditional forms like bonding and trust.



## The STIBNITE GOLD PROJECT

#### PLAN DESIGNED TO PROVIDE:

- ✓ Natural resource restoration via private investment
- ✓ Restoration of salmon migration into upper EFSF Salmon River
- ✓ Over 500 direct well-paid jobs for Idahoans
- ✓ The only domestically mined source of antimony, a mineral of critical national significance

2010 Begin Study and Engineering
2016 Begin Regulatory Review under NEPA
2020 Public Comment Period for the DEIS
2022 Supplemental Draft EIS published
2024 Record of Decision anticipated 1

**NEPA:** National Environmental Policy Act **DEIS:** Draft Environmental Impact Statement **EFSFSR:** East Fork South Fork Salmon River



1 See forward-looking statements at the end of this presentation. Based on the USFS schedule published in January 2024.

### WHAT WE HEARD IN 2020

Improve water quality

**Reduce water temperature** 

#### **Reduce the project footprint**

Based on public and agency feedback on the Draft EIS, Perpetua submitted project refinements to the USFS in December of 2020. The improvements create better environmental outcomes and are responsive to public input. The agency has decided to advance the improved project design forward for additional public review.

### PROJECT IMPROVEMENTS

**Improved Water Quality** permanent water treatment is no longer needed through elimination of Fiddle DRSF, added liners, etc.

**Improved Water Temperature** to reach levels closer to or even below baseline.

**10% reduction** in total volume mined (44 million tons)

**70% reduction** in Hangar Flats pit size (the pit can be completely backfilled)

**7% reduction** in disturbance from open pits (37 acres)

**168-acre reduction** in disturbance without Fiddle DRSF



### **2022 SUPPLEMENTAL DEIS**





<sup>1</sup> Under NEPA, a "Preferred Alternative" is identified by a Federal Agency in a DEIS to let the public know which action the agency is leaning toward selecting as final.



### IT IS TIME.

The Supplemental Draft Environmental Impact Statement identified Perpetua's plan as the **Preferred Alternative**.<sup>1</sup>

- ✓ Improved water quality.
- ✓ Eliminated need for permanent water treatment.
- ✓ Improved water temperature.
- ✓ Transportation route safest for community and the environment.
- $\checkmark\,$  Meets the purpose and need.



<sup>1</sup> Under NEPA, a "Preferred Alternative" is identified by a Federal Agency in a DEIS to let the public know which action the agency is leaning toward selecting as final.

#### **IT ALL STARTS HERE.**

Restore the site.

Improve water quality

### IT IS TIME.

Improve water quality in EFSF Salmon River.

- ✓ 47% reduction in arsenic in EFSF Salmon River on-site. (40% off-site) (Tables on 4.9-18)
- ✓ 60% reduction in antimony in EFSF Salmon River on-site (57% off-site) (Tables on 4.9-18)
- ✓ 5C stream temperature reduction from DEIS.
- ✓ 9% increase in river functional units

"The 2021 MMP would improve some of the existing water quality conditions observed in Meadow Creek and the East Fork SFSR by removing and repurposing legacy mine wastes."

(Supplemental Draft Environmental Impact Statement, ES-16)



IT ALL STARTS HERE.

Restore the site. Restore the river.

### **IT IS TIME.**

#### **Improve River and Fish Conditions**

- ✓ 20+ miles of habitat opened
- ✓ 8 miles of bull trout habitat
- ✓ 13 miles of Chinook critical habitat

"The restoration activities, particularly providing volitional passage in the East Fork SFSR, would result in <u>a major</u>, <u>permanent</u>, regional, and beneficial effect <u>on Chinook salmon</u>, steelhead, bull trout, <u>and westslope cutthroat trout within the</u> <u>vicinity of the mine</u>."

(Supplemental Draft Environmental Impact Statement, 4.12.2.2 2021 MMP; p.4-334)





### **IT IS TIME.**

6 years of listening and working with regulators has reduced the project impacts.

- ✓ 13% reduction in on-site disturbance
- ✓ 51% on-site Project footprint on previously disturbed legacy areas.
- ✓ 10% reduction in volume mined
- ✓ 70% reduction in Hangar Flats pit volume + complete backfill
- ✓ ~60% reduction in mercury emissions
- ✓ 23% reduction in traffic by adding lime production to site.





### **IT IS TIME.**

#### Safe transport via Burntlog route.

- $\checkmark$  38 miles of new and existing road
- ✓ Reduced risk of hazards
- ✓ Reduced safety risks
- ✓ 18 fewer miles within .5 mile of streams.

"The <u>Burntlog Route would avoid environmental</u> and human health and safety risks associated with the Johnson Creek Route which passes through identified areas for avalanches, landslides, and floods. This route would provide another route for SGP ingress/egress, would decrease SGP and public traffic interaction with Yellow Pine and Johnson Creek area residents; and <u>would</u> decrease the potential for spill risk adjacent to fish-bearing streams."





### PERMITTING – NEXT STEPS





### PERPETUA RESOURCES RESPONSIBLE. RESTORATIVE. CRITICAL.



# THANK YOU.



www.perpetuaresources.com

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