

**STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD**

In the Matter of Water Quality Certification for

**PINE CREEK MINE, LLC
PINE CREEK MINE HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 12532

Sources: Morgan Creek thence Pine Creek

County: Inyo

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

**State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
P.O. Box 2000
Sacramento, CA 95812-2000**

Table of Contents

COMMON ACRONYMS AND ABBREVIATIONS III

1.0 PROJECT DESCRIPTION 1

2.0 FEDERAL ENERGY REGULATORY COMMISSION PROCEEDINGS 2

3.0 REGULATORY AUTHORITY 2

4.0 RATIONALE FOR WATER QUALITY CERTIFICATION CONDITIONS 5

5.0 CONCLUSION 9

WATER QUALITY CERTIFICATION CONDITIONS 10

CONDITION 1. INITIAL WATER IMPOUNDMENT 10

CONDITION 2. WATER QUALITY 11

CONDITION 3. RUN-OF-MINE OPERATIONS 12

**CONDITION 4. CONSTRUCTION, MAINTENANCE, AND OTHER PROJECT
RELATED ACTIVITIES 12**

CONDITION 5. IMPOUNDMENT DRAINING AND REFILL 13

CONDITION 6. BIOLOGICAL RESOURCES 14

CONDITION 7. ROADS 15

CONDITION 8. HAZARDOUS SUBSTANCES 16

CONDITION 9. ANNUAL REVIEW MEETING AND REPORTING 16

CONDITIONS 10 – 32 17

REFERENCES 22

List of Figures

Figure 1. Pine Creek Mine Hydroelectric Project Location Map 23

Figure 2. Easy-Go Adit Concrete Plug Diagram 24

Figure 3. Existing Discharge to Morgan Creek 25

Common Acronyms and Abbreviations

<i>BMI</i>	<i>benthic macroinvertebrates</i>
<i>Regional Water Board</i>	<i>Regional Water Quality Control Board</i>
<i>CDFW</i>	<i>California Department of Fish and Wildlife</i>
<i>CEQA</i>	<i>California Environmental Quality Act</i>
<i>certification</i>	<i>water quality certification</i>
<i>cfs</i>	<i>cubic feet per second</i>
<i>CWA</i>	<i>Clean Water Act</i>
<i>Deputy Director</i>	<i>Deputy Director for the Division of Water Rights</i>
<i>EA</i>	<i>Environmental Assessment</i>
<i>ESA</i>	<i>Endangered Species Act</i>
<i>FERC</i>	<i>Federal Energy Regulatory Commission</i>
<i>IS</i>	<i>Initial Study</i>
<i>NEPA</i>	<i>National Environmental Policy Act</i>
<i>NPDES</i>	<i>National Pollutant Discharge Elimination System</i>
<i>PCB</i>	<i>Polychlorinated Biphenyl</i>
<i>PQL</i>	<i>Practical Quantitation Limit</i>
<i>Procedures</i>	<i>State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State</i>
<i>State Water Board</i>	<i>State Water Resources Control Board</i>
<i>USEPA</i>	<i>United States Environmental Protection Agency</i>

1.0 Project Description

The proposed Pine Creek Mine Hydroelectric Project (Project) is located in Pine Creek Mine, northwest of Bishop, in northwestern Inyo County, California. The proposed Project is located at the top of Pine Creek Canyon above the confluence of Morgan and Pine creeks, in the Owens River Basin (Figure 1). Pine Creek Mine, LLC (PCM) is the reported current assignee of the Pine Creek Mine (mine) parcels¹, as well as the claimant of the subsurface portions of the mine in the surrounding Inyo National Forest land, which is owned and managed by the United States Department of Agriculture, Forest Service (Forest Service).

The underground portions of the mine comprise over 100 miles of tunnels historically used for tungsten mining. The Project proposes to use the head created by storing water in the mine tunnels by plugging the Easy-Go Adit (Figure 2). The water source for the Project is water draining from the underground mine workings. The water emanates from fissures, fractures, and boreholes formed and encountered during the tunneling and mining activities.

A steel-reinforced concrete plug is approximately 12-feet-wide, by 12-feet-high, by 30-feet-thick, and was constructed by PCM in 2002 to control water accumulating in the Easy-Go Adit. The plug was constructed approximately 2,500 feet inside the mine from the Easy-Go mine portal (Figure 2). When unimpeded, water that surfaces in the mine's underground tunnels, flows out of the mine at the Easy-Go mine portal with an average discharge of approximately 10 cubic feet per second (cfs).

The mine's existing shaft-tunnel-vault system creates the opportunity to modify the existing plug and facilities at the Easy-Go Adit to control flow and store water accumulated throughout the mine's workings to generate hydroelectric power. The concrete plug in the Easy-Go Adit can store up to 1,320 feet of gross head of water underground behind the plug elevation. Although PCM performed a single test on the plug and determined it is capable of holding the proposed volume of water, the plug does not currently store or divert water inside the mine. Currently, water draining from within the mine flows unimpeded through an opening in the plug and discharges to a rock ditch that leads to the intake sump of a 150-kilowatt hydroelectric facility (Pine Creek Mine Water Discharge System Sites 1 and 2 Project²) and then to a holding pond (Pond 7), which then flows over a concrete spillway into Morgan Creek (Figure 3).

To construct the Project, PCM would install an 18-inch-diameter, 120-foot-long steel penstock, from a valve in the existing concrete plug to a 1,500-kilowatt Pelton turbine generator, which would be located approximately 2,400 feet inside the mine. A 2,400-foot-long underground transmission line and 60-foot above ground line would connect

¹ Bishop Tungsten Development, LLC is the parcels' owner of record.

² Federal Energy Regulatory Commission (FERC) Conduit Exemption Project No. 13163, which is owned and operated by Bishop Tungsten Development, LLC.

the generator to an existing PCM-owned substation and an existing 640-foot transmission line. Except for upgrades to the existing substation and staging of equipment/materials, no construction activities are proposed outside of the mine tunnels.

PCM proposes to operate the Project in a “run-of-mine” mode whereby flow releases from the Project would approximate water inflows to the mine. Surfaced water flow from the mine into the Pine Creek Mine Water Discharge System Sites 1 and 2 Project currently range from 7 to 14 cfs (average of 10 cfs). PCM proposes to ensure run-of-mine operation using a pressure sensor on the supply line to the turbine or a static bypass line connected to the pressurized section of the tunnel. During Project operation, approximately 200 acre-feet of water would be impounded by the concrete plug. The Project discharge would flow through the existing rock trench and enter the intake for the Pine Creek Mine Water Discharge System Sites 1 and 2 Project, and discharge to Morgan Creek, which then flows into Pine Creek approximately 1,000 feet downstream of the discharge point.

2.0 Federal Energy Regulatory Commission Proceedings

On February 12, 2016, PCM filed an application with the Federal Energy Regulatory Commission (FERC) for an original license for the Project, also known as FERC Project No. 12532. On July 8, 2016, PCM filed with FERC a revised license application. FERC issued its *Environmental Assessment, Pine Creek Mine Hydroelectric Project – FERC Project No. 12532-006* (EA) on February 12, 2018, to comply with National Environmental Policy Act (NEPA) requirements.

3.0 Regulatory Authority

3.1 Water Quality Certification and Related Authorities

The federal Clean Water Act (33 U.S.C. §§ 1251 et seq.) was enacted “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (33 U.S.C. § 1251(a).) The Clean Water Act relies significantly on state participation and support, in light of States’ “primary responsibilities and rights” to “prevent, reduce, and eliminate pollution.” (*Id.*, § 1251(b).) Federal agencies must “co-operate with the State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.” (*Id.*, § 1251(g).)

Section 401 of the Clean Water Act requires any applicant for a federal license or permit that may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification from the relevant state agency that the project will comply with state water quality laws. (*Id.*, § 1341(a)(1), (d).) The state’s certification may set conditions implementing Clean Water Act requirements, including the requirements of Section 303 of the Clean Water Act for water quality standards and implementation plans, or to implement “any other appropriate requirement of State law.”

(*Id.*, § 1341(d).) Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project. (*Ibid.*) If the state agency denies certification, the federal agency cannot approve the project.

The State Water Resources Control Board (State Water Board) is the state agency responsible for Section 401 certification in California. (Wat. Code, § 13160.) The State Water Board has delegated authority to act on applications, or requests, for certification to the Executive Director of the State Water Board. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

In addition, Water Code section 13383 provides the State Water Board with the authority to “establish monitoring, inspection, entry, reporting, and recordkeeping requirements... and [require] other information as may be reasonably required” for activities subject to certification under section 401 of the Clean Water Act. For activities subject to certification that involve the diversion of water for beneficial use, the State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029 (State Water Board 2012). In the *Redelegation of Authorities Pursuant to Resolution No. 2012-0029* memo issued by the Deputy Director on October 19, 2017, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights (State Water Board 2017).

On August 26, 2019, PCM filed a request with the State Water Board for water quality certification for the Project under section 401 of the Clean Water Act. State Water Board staff provided public notice of the request pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website.

On August 14, 2020, State Water Board staff requested comments from the Lahontan Regional Water Quality Control Board (Lahontan Regional Water Board) on the draft certification. (See Cal. Code Regs., tit. 23, § 53855, subd. (b)(2)(B).) On August 14, 2020, comments were received from the Lahontan Regional Water Board on the draft certification. The comments have been incorporated into the final certification.

3.2 Water Quality Control Plan and Related Authorities

The California Regional Water Quality Control Boards (Regional Water Boards) have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to State Water Board and United States Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict. (*Id.*, § 13170.) For a specified area, the water quality control plans designate the beneficial uses of water to be protected, water quality objectives established for the reasonable protection of those beneficial uses or the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (*Id.*, §§ 13241,

13050, subds. (h), (j).) The beneficial uses together with the water quality objectives that are contained in the water quality control plans and state and federal anti-degradation requirements constitute California's water quality standards.

The Lahontan Regional Water Board adopted, and the State Water Board and USEPA approved, the *Water Quality Control Plan for the Lahontan Region* (Basin Plan). The Basin Plan designates the beneficial uses of water to be protected along with the water quality objectives necessary to protect those uses. The Basin Plan designates the beneficial uses of water to be protected, water quality objectives for the reasonable protection of the beneficial uses and the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Wat. Code, §§ 13241, 13050, subds. (h), (j).) The beneficial uses, together with the water quality objectives contained in the water quality control plans, and applicable federal anti-degradation requirements, constitute California's water quality standards for purposes of the Clean Water Act. The Basin Plan identifies potential and existing beneficial uses for Pine Creek as: municipal and domestic supply; agricultural supply; industrial service supply; groundwater recharge; freshwater replenishment; hydropower generation; water contact recreation; noncontact water recreation; commercial and sportfishing; cold freshwater habitat; wildlife habitat; and spawning, reproduction, and development. Morgan Creek is considered both a "minor surface water" and a tributary to Pine Creek in accordance with the Basin Plan and is assigned the following potential and existing beneficial uses: municipal and domestic supply; agricultural supply; industrial service supply; groundwater recharge; freshwater replenishment; hydropower generation; water contact recreation; noncontact water recreation; commercial and sportfishing; cold freshwater habitat; wildlife habitat; rare or endangered species habitat; water quality enhancement; and spawning, reproduction, and development.

3.3 Construction General Permit

PCM may need to obtain coverage under the ***General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*** (Construction General Permit)³ for activities that disturb one or more acres of soil or activities that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activity subject to the Construction General Permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

³ State Water Board Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by State Water Board Order No. 2010-0014-DWQ and State Water Board Order No. 2012-0006-DWQ. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Last accessed August 19, 2020.

3.4 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

On April 2, 2019, the State Water Board adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures), which became effective on May 28, 2020. The Procedures provide California's definition of wetland, wetland delineation procedures, and procedures for submitting applications for activities that could result in discharges of dredged or fill material to waters of the state. The Procedures ensure that State Water Board regulatory activities will result in no net loss of wetland quantity, quality, or permanence, compliant with Executive Order W-59-93. PCM must comply with the Procedures when conducting dredge or fill activities that may impact waters of the state, including wetlands.

3.5 California Environmental Quality Act

The State Water Board is the lead agency for the purposes of California Environmental Quality Act (CEQA) compliance. (Pub. Resources Code, §§ 21000 – 21177.) The State Water Board released a draft Initial Study/Negative Declaration on June 24, 2020. The comment period ended on July 27, 2020, with comments received from the Native American Heritage Commission (NAHC), California Department of Fish and Wildlife (CDFW), and Lahontan Regional Water Board. The State Water Board considered all comments and prepared written response to comments.

The documents and other materials that constitute the public record are located at the State Water Board, Division of Water Rights, 1001 I Street, Sacramento, California. The State Water Board will file a Notice of Determination with the Office of Planning and Research within five days of issuance of this certification.

4.0 Rationale for Water Quality Certification Conditions

Certification conditions were developed to ensure that the Project complies with water quality requirements and other appropriate requirements of state law, including protecting beneficial uses of California's waters by complying with water quality objectives in water quality control plans and policies for water quality control, and other applicable water quality requirements. Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) provides that the conditions contained in this certification be incorporated as mandatory conditions of the new license issued by FERC for the Project.

When preparing the conditions in this certification, State Water Board staff reviewed and considered:

- The amended final license application, requests for certification, and any updates or amendments thereto;

- Comments submitted by agencies and interested parties on PCM's Preliminary License Proposal;
- The FERC Environmental Assessment (EA) prepared pursuant to NEPA, including comments received on the EA;
- Forest Service Section 4(e) Conditions, *Preliminary Terms and Conditions for the Pine Creek Mine Hydroelectric Project, dated September 30, 2016*;
- Forest Service Section 4(e) Conditions, *Addendum to Preliminary Terms and Conditions for the Pine Creek Mine Hydroelectric Project, dated November 27, 2017*;
- State Water Board Initial Study/Negative Declaration, including comments received on the Initial Study/Negative Declaration;
- Beneficial uses and associated water quality objectives in the Basin Plan;
- Project-related controllable water quality factors; and
- Other information in the record.

The following describes the rationale used to develop the conditions in this certification that are needed to protect water quality and beneficial uses from Project-related impacts.

Rationale for Condition 1 – Initial Water Impoundment

The initial impoundment, or fill, of water for the Project will require the concrete plug in the Easy-Go Adit to be capped or the flow of water through the adit to otherwise be reduced considerably. The mine currently discharges an average flow of 10 cfs. It is anticipated to take approximately 10 days to impound the required 200 acre-feet of water required to produce the hydraulic head desired to generate power. To prevent potential temporary adverse impacts to Morgan Creek and Pine Creek during the initial fill, Condition 1 requires PCM to develop and implement an Initial Fill Plan that includes minimum flows and ramping rate requirements, in consultation with the California Department of Fish and Wildlife (CDFW), Forest Service, Lahontan Regional Water Board, and State Water Board staff.

Rationale for Condition 2 – Water Quality

According to the FERC EA, mining operations at Pine Creek Mine were conducted from 1916 until 2000. The Easy-Go Adit was constructed in the 1960's and encountered significant quantities of water. Impounding water in the mine tunnels has the potential to affect pH, and concentration of metals and other pollutants in the water due to increased contact time with the mine's underground tunnel system. Water quality monitoring will identify any unforeseen effects on water quality from impounding water in the mine.

Condition 2 requires PCM to develop and implement a Water Quality Monitoring and Management Plan in coordination with Forest Service, CDFW, Lahontan Regional Water Board, and State Water Board staff, to ensure discharges from the mine do not

affect the beneficial uses or water quality of Morgan Creek or Pine Creek. If monitoring results demonstrate that the Project is not affecting the beneficial uses and water quality of Morgan Creek or Pine Creek, Condition 2 allows PCM to request discontinuation of the water quality monitoring.

Rationale for Condition 3 – Run-of-Mine Operations

PCM is proposing a run-of-mine operation, wherein the outflow through the concrete plug would be approximately the amount of water percolating through the mine at any point in time. It is critical that the system for maintaining run-of-mine operation be appropriate and reliable. Condition 3 requires PCM to develop a Run-of-Mine Operations Plan that details how the Project would maintain and document run-of-mine operations.

Rationale for Condition 4 – Construction, Maintenance, and Other Project-Related Activities

Protection of the instream beneficial uses identified in the Basin Plan requires effluent limitations and other limitations on discharges of pollutants from point and nonpoint sources to Morgan Creek. Erosion from Project-related construction and maintenance activities has the potential to result in discharges that violate water quality standards. Condition 4 requires PCM to comply with the Construction General Permit, as applicable, or to develop and implement Water Quality Protection Plans to protect water quality and beneficial uses. Water Quality Protection Plans will be developed for construction, maintenance, or other Project-related activities with the potential to cause erosion, stream sedimentation, release of hazardous materials, or otherwise impair water quality that are not covered by another condition of the certification.

Rationale for Condition 5 – Impoundment Draining and Refill

Draining and refilling the reservoir as part of periodic maintenance for the Project will present similar concerns as the initial fill. Developing a plan addressing provisions for ramping rates, minimum flows, maximum flows, and time of year for filling and draining of the reservoir will help ensure protection of aquatic life in Pine Creek. The Impoundment Draining and Refill Plan will outline provisions for the draining and filling of the impoundment associated with inspection, maintenance, or other needs throughout the term of the FERC license.

Rationale for Condition 6 – Biological Resources

If Project operation adversely affects the quality of receiving waters, there may be impacts to fish populations and benthic macroinvertebrates (BMI) in Pine Creek. Biological measurements are the most direct indicator of the health and the well-being of fish and wildlife populations. Biological monitoring can detect changes, identify additional information needs, and guide adaptive management of Project operations. Biological metrics can be used to assess the long-term impact from physical and

chemical degradations (e.g., bioassessments). Corresponding biological data and environmental information can also be used to evaluate the impact of management actions on fish and wildlife health.

Data collected as part of Condition 2 (Water Quality) will be used to monitor and assess potential water quality impacts from Project operations, which may indicate the need to begin biological monitoring. Condition 6 outlines a process whereby the Deputy Director may require PCM to develop and implement a Biological Monitoring and Management Plan in consultation with Forest Service, CDFW, and State Water Board staff. If required, the Biological Monitoring and Management Plan will outline monitoring and adaptive management for fish and BMI in Pine Creek.

If monitoring results confirm that the Project is not adversely affecting fish or BMI populations, Condition 6 allows PCM to request to discontinue biological monitoring.

Rationale for Condition 7 – Road Management

Operation and maintenance of Project roads have the potential to impact water quality. The potential for water quality impacts depends on factors such as local topography, roadbed material, and drainage characteristics. To avoid and minimize these potential water quality impacts, Condition 7 requires PCM to develop and implement a Road Management Plan. Condition 7 will help ensure operation and maintenance of the Project's roads do not cause discharges to surface waters that violate water quality standards.

Rationale for Condition 8 – Hazardous Substances

The Project would result in an increase in the generation, storage, and disposal of hazardous materials and wastes. During Project construction, oil, gasoline, or diesel fuel may be used. If not properly managed, oil and other hazardous substances have the potential to negatively impact aquatic and terrestrial species through toxic exposure causing direct mortality or injury, reduced survival and reproduction from contamination, and degradation or loss of habitat. It is crucial to prevent the release of hazardous materials into the environment and waterways for the protection of water quality and associated beneficial uses, including aquatic species. Condition 8 requires PCM to develop and implement a Hazardous Substance Management Plan to ensure proper storage and disposal of hazardous materials related to the Project to avoid direct or indirect release into waterways. Condition 8 also requires PCM to ensure appropriate equipment and supplies are available to respond to spills and take appropriate corrective actions, including contacting appropriate agencies in the event of a spill.

Rationale for Condition 9 – Annual Review Meeting and Reporting

Monitoring required by this certification will help resource agencies and State Water Board staff evaluate the Project's effects on water quality and beneficial uses throughout the FERC license term. Annual consultation meetings will bring PCM,

resource agencies, and interested parties together to discuss monitoring results and resource trends, and develop adaptive management actions, if necessary, to protect water quality and beneficial uses. Condition 9 requires PCM to conduct annual consultation meetings with resource agencies and other interested parties to review monitoring reports and discuss ongoing and forecasted operations, including revisions or modifications to monitoring and/or operations that may be needed to protect water quality and beneficial uses. Condition 9 also requires PCM to submit an Annual Report to the Deputy Director summarizing PCM's operations for the past year.

Rationale for Conditions 10 through 32

In order to ensure that the Project operates to meet water quality standards as anticipated, to ensure compliance with other relevant state and federal laws, and to ensure that the Project will continue to meet state water quality standards and other appropriate requirements of state law over its lifetime, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all certifications, which are included in this certification.

5.0 Conclusion

The State Water Board finds that, with the conditions and limitations imposed under this certification, the Project will comply with applicable state water quality standards and other appropriate requirements of state law.

Water Quality Certification Conditions

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT OPERATION OF THE PINE CREEK MINE HYDROELECTRIC PROJECT (Project) will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law under the following terms and conditions.

CONDITION 1. Initial Water Impoundment

No later than one year following license issuance and at least three months prior to commencing the initial fill of water into the Project's reservoir in the Easy-Go Adit, the Licensee shall submit an Initial Fill Plan to the Deputy Director for the Division of Water Rights (Deputy Director) for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Licensee shall develop the Initial Fill Plan in consultation with United States Department of Agriculture, Forest Service (Forest Service), California Department of Fish and Wildlife (CDFW), Lahontan Regional Water Quality Control Board (Lahontan Regional Water Board), and State Water Resources Control Board (State Water Board) staff. The Initial Fill Plan shall be developed and implemented to protect aquatic life (e.g., prevent dewatering and stranding) and provide adequate notification to downstream water users. At a minimum, the Initial Fill Plan shall include:

- Purpose of the Initial Fill Plan;
- Proposed ramping rates and minimum flows during initial fill of the Project reservoir to protect aquatic life;
- Schedule for initial fill;
- Methods or information used to determine ramping rates and minimum flows (e.g. studies, tests, monitoring, etc.);
- Monitoring and reporting the Licensee will perform to verify adequate protection of aquatic life (e.g., stranding, dewatering, fish behaviors, and mortality). Monitoring required in other conditions of this certification may be used if appropriate;
- Criteria for evaluating the effectiveness of the ramping rates and minimum flows;
- Notification of downstream water users or a description of why such notification is not necessary;
- Documentation supporting a valid basis of right to the storage and use of water for the Project; and
- A summary of any comments received in development of the plan and how the comments were addressed.

Flow measurement locations and methods shall comply with the requirements in Condition 3.

The Initial Fill Plan shall be implemented upon receipt of Deputy Director and any other required approvals. The Licensee shall file with FERC the Deputy Director-approved Initial Fill Plan, and any approved amendments thereto.

CONDITION 2. Water Quality

No later than one year following license issuance, the Licensee shall submit a Water Quality Monitoring and Management Plan (Water Quality Plan) to the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Licensee shall develop the Water Quality Plan in consultation with the Forest Service, CDFW, Lahontan Regional Water Board, and State Water Board staff. At a minimum, the Water Quality Plan shall include:

- A statement of goals and objectives for the plan;
- A description of proposed monitoring and associated protocols, including monitoring locations, frequency (e.g., monthly), equipment to be used, and the quality assurance project plan;
- Comprehensive list of the parameters that will be monitored in the mine's effluent, Morgan Creek, and Pine Creek. At a minimum, parameters shall include temperature, pH, turbidity, total dissolved solids, dissolved arsenic, dissolved zinc, dissolved tungsten, and dissolved mercury;
- A list of applicable numeric and narrative water quality objectives;
- Identification of corrective measures and a timetable for implementation, if monitoring results indicate that the Project may be impairing water quality;
- A summary of any comments received in development of the plan and how the comments were addressed; and
- A format and schedule for reporting on water quality monitoring efforts, including an evaluation and summary of monitoring data results and any proposed corrective measures.

The Licensee shall propose updates to the Water Quality Plan based on the monitoring results. If monitoring results demonstrate that the Project is not adversely affecting the beneficial uses or water quality of Morgan Creek and Pine Creek, the Licensee may request to reduce the frequency, parameters, or discontinue water quality monitoring. Any modifications to the Water Quality Plan shall be developed in consultation with the Forest Service, CDFW, Lahontan Regional Water Board, and State Water Board staff. Any modifications to the Water Quality Plan require approval by the Deputy Director prior to implementation. The Licensee shall file with FERC the Deputy Director-approved Water Quality Plan, and any approved amendments thereto. The Licensee shall implement the Water Quality Plan upon receipt of Deputy Director and other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 3. Run-of-Mine Operations

No later than one year following license issuance and at least three months prior to beginning Project operations, the Licensee shall submit a Run-of-Mine Operations Plan (Run-of-Mine Plan) to the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Licensee shall develop the Run-of-Mine Plan in consultation with the Forest Service, CDFW, Lahontan Regional Water Board, and State Water Board staff. At a minimum, the Run-of-Mine Plan shall include:

- A statement of goals and objectives for the plan;
- A description of proposed run-of-mine operations, including minimum and maximum discharges to Morgan Creek by the Project, and ramping rates during any maintenance of the concrete plug that requires flows outside of the minimum and maximum approved for run-of-mine operations as part of this plan;
- A description of monitoring, including monitoring locations, frequency, equipment, and maintenance;
- A contingency plan to address potential monitoring equipment failure;
- A summary of any comments received in development of the plan and how the comments were addressed; and
- A detailed reporting schedule that includes summarizing, evaluating, and reporting the data associated with run-of-mine operation.

The Licensee shall propose updates to the Run-of-Mine Plan based on the monitoring results. Any modifications to the Run-of-Mine Plan require approval by the Deputy Director prior to implementation. The Licensee shall file with FERC the Deputy Director-approved Run-of-Mine Plan, and any approved amendments thereto. The Licensee shall implement the Run-of-Mine Plan upon receipt of Deputy Director and other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 4. Construction, Maintenance, and Other Project Related Activities

When applicable, the Licensee shall comply with the State Water Board's *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit)⁴ (State Water Board, 2009), and amendments thereto. For construction and maintenance activities with the potential to impact water quality or beneficial uses that are not subject to the Construction General Permit, the Licensee shall prepare and implement site-specific Water Quality Protection Plans for Deputy Director review and consideration for approval. Water Quality Protection Plans must demonstrate compliance with sediment, turbidity, and other applicable water

⁴ State Water Board Water Quality Order No. 2009-0009-DWQ and National Pollutant Discharge Elimination System No. CAS000002, as amended by State Water Board Order No. 2010-0014-DWQ and State Water Board Order No. 2012-0006-DWQ.

quality objectives in the *Water Quality Control Plan for the Lahontan Region* (Basin Plan). The Water Quality Protection Plans shall be consistent with the most current USFS *National Best Management Practices for Water Quality Management on National Forest System Lands* (USFS, 2012) and other appropriate documents.

The Licensee shall submit Water Quality Protection Plans to the Deputy Director for review and approval at least 120 days prior to the desired start date of the applicable construction or maintenance activity. The objective of the Water Quality Protection Plans shall be to identify and implement control measures for construction, maintenance, or other activities with the potential to cause erosion, stream sedimentation, fugitive dust, soil mass movement, release of hazardous materials, or other water quality impairment.

Water Quality Protection Plans shall be based on actual site geologic, soil, and hydrologic conditions, and at a minimum shall include:

- A description of site conditions and the proposed activity;
- Detailed descriptions, design drawings, and specific topographic locations of all control measures in relation to the proposed activity, which may include:
 - Measures to divert runoff away from disturbed land surfaces;
 - Measures to collect and filter runoff from disturbed land surfaces, including sediment ponds at the diversion and powerhouse sites;
 - Measures to prevent the release of hazardous substances or other water quality impairments; and
 - Measures to dissipate energy and prevent erosion;
- Revegetation measures for disturbed areas, which shall include use of native plants and locally-sourced plants and seeds; and
- A monitoring, maintenance, and reporting schedule.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved Water Quality Protection Plans, and any approved amendments thereto. The Licensee shall implement the Water Quality Protection Plans upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 5. Impoundment Draining and Refill

At least four months prior to draining of the impoundment for maintenance, inspection (e.g., concrete plug, turbine, etc.), or other reason, the Licensee shall submit an Impoundment Draining and Refill Plan to the Deputy Director for review and consideration for approval. The Deputy Director may waive the four-month timeline based upon a request from the Licensee with appropriate supporting information. The Deputy Director may require modifications as part of any approval. The Plan shall be developed in consultation with the Forest Service, CDFW, and State Water Board staff. At a minimum, the Impoundment Draining and Refill Plan shall include:

- The purpose of the plan;
- Plan for draining of the impoundment, including proposed flows and ramping rates to protect water quality and beneficial uses, and associated monitoring and reporting;
- Refill plan, which should include all elements of the Initial Fill Plan (Condition 1) and any lessons learned from implementation of the initial fill of the impoundment; and
- A summary of any comments received in development of the plan and how the comments were addressed.

The Licensee shall file with FERC the Deputy Director-approved Impoundment Draining and Refill Plan, and any approved amendments thereto. The Licensee shall implement the Impoundment Draining and Refill Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 6. Biological Resources

If monitoring results from Condition 2 (Water Quality) indicate that Project operations are adversely affecting the water quality of receiving waters, the Deputy Director may require the Licensee to perform biological monitoring and/or implement of corrective measures identified in the Water Quality Plan or otherwise appropriate actions. Within six months of the Deputy Director's notification requiring the Licensee to perform biological monitoring, the Licensee shall submit a Biological Monitoring and Management Plan to the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Licensee shall develop the Biological Monitoring and Management Plan in consultation with Forest Service, CDFW, and State Water Board staff. At a minimum, the Biological Monitoring and Management Plan shall include:

- Monitoring for native resident fish and benthic macroinvertebrates (BMI) in Pine Creek;
- Method, duration, and frequency of monitoring;
- Standardized sampling and data protocols for fish and BMI monitoring. For BMI monitoring, the Licensee shall use the Surface Water Ambient Monitoring Program Protocols or its successor program, or an alternative methodology approved by the Deputy Director. The BMI protocols shall include population heterogeneity, composition, and trends;
- Format, schedule, and reporting to document, summarize, and analyze monitoring results. The reports shall include identification of any impacts to biological resources and recommendations to address such impacts. The Deputy Director may direct the Licensee to implement measures to address impacts associated with the Project. The Licensee shall propose any updates to the Biological Monitoring and Management Plan based on the monitoring results.

Reports shall be submitted to, Forest Service, CDFW, and State Water Board staff; and

- A summary of any comments received in development of the plan and how the comments were addressed.

The Licensee shall file with FERC the Deputy Director-approved Biological Monitoring and Management Plan, and any approved amendments thereto. The Licensee shall implement the Biological Monitoring and Management Plan and any amendments thereto upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

If monitoring results confirm that the Project is not adversely affecting BMI or the health of the fish community, the Licensee may request to discontinue the biological monitoring. Any modifications to the Biological Monitoring and Management Plan require approval by the Deputy Director prior to implementation.

CONDITION 7. Roads

No later than one year following license issuance, the Licensee shall file a Road Management Plan with the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Road Management Plan shall be developed in consultation with Forest Service and State Water Board staff. The Road Management Plan shall describe the maintenance and construction of Project roads in a manner that is protective of water quality. At a minimum, the Road Management Plan shall include:

- An inventory and map of all roads associated with the Project, including locations of drainage structures, streams, and surface waterbodies;
- An assessment of Project roads to determine if any drainage structures or road segments are impacting or have the potential to impact water quality;
- Proposed measures and an implementation schedule to rehabilitate existing damage and minimize erosion from Project roads;
- Proposed measures designed to improve drainage should be consistent with the most current United States Department of the Interior, Bureau of Land Management ***BLM Manual, MS 9113 - Roads***⁵ (BLM, 2015) or California Department of Transportation ***Stormwater Quality Handbook: Project Planning and Design Guide***⁶ (Caltrans, 2017) guidance;

⁵ Available online at:

https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual9113.pdf Last accessed August 24, 2020.

⁶ Available online at: <https://dot.ca.gov/-/media/dot-media/programs/design/documents/final-ppdgjuly-2017-revnmta4292019borderscr.pdf> Last accessed August 24, 2020.

- A process for the Licensee to propose updates or modifications to the plan for activities unknown at the time of plan approval, such as new road construction or decommissioning;
- A schedule and plan for inspection and maintenance of Project roads throughout the term of the license; and
- A summary of any comments received in development of the plan and how the comments were addressed.

The Licensee shall file with FERC the Deputy Director-approved Road Management Plans, and any approved amendments thereto. The Licensee shall implement the Road Management Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 8. Hazardous Substances

No later than one year following license issuance and at least 60 days before land-disturbing activities commence, the Licensee shall file a Hazardous Substance Management Plan with the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. The Hazardous Substance Management Plan shall be developed in consultation with Forest Service and State Water Board staff. The Hazardous Substance Management Plan shall describe the storage, handling, and disposal of hazardous substances used for operation, maintenance, construction, and any other Project-related activities. At a minimum, the Hazardous Substance Management Plan shall include:

- An inventory and location of all hazardous substances, including but not limited to fuels, oils, pesticides, herbicides, paint, and batteries stored at the Project site and surrounding area;
- An inventory and location of spill containment and cleanup equipment maintained for the Project;
- Proposed measures for spill prevention and remediation, including best management practices to contain spills; and
- A summary of any comments received in development of the plan and how the comments were addressed.

The Licensee shall file with FERC the Deputy Director-approved Hazardous Substance Management Plan, and any approved amendments thereto. The Licensee shall implement the Hazardous Substance Management Plan upon receipt of Deputy Director and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 9. Annual Review Meeting and Reporting

No later than one year following license issuance, the Licensee shall establish an annual meeting that is open to the public to review and discuss implementation of the

Project license. At a minimum and at least 45 days prior to the meeting, the Licensee shall invite Lahontan Regional Water Board, Forest Service, CDFW, State Water Board staff, and other interested parties to participate in the annual review meeting. At least 30 days prior to the meeting, the Licensee shall also file public notice of the meeting on the Project's docket within FERC's [eLibrary](#)⁷. Materials shall be made available to interested parties and agencies as part of the notice.

The first annual review meeting shall be held no later than the first full calendar year following license issuance. At the annual review meetings, the Licensee shall:

- Review the status of implementing the FERC license and certification conditions;
- Review monitoring data from all monitoring conducted the previous year;
- Review elements of current year maintenance plans and any non-routine maintenance;
- Discuss foreseeable changes to Project facilities or features; and
- Discuss necessary revisions or modifications to plans approved as part of this certification, including potential monitoring and habitat protection measures for fish species that are listed as threatened or endangered under the California Endangered Species Act (ESA) and/or federally ESA, or Species of Special Concern designated by CDFW, if found in Morgan Creek or Pine Creek.

No later than 60 days following the annual meeting, the Licensee shall submit an annual report to the Deputy Director that summarizes the annual review meeting and any maintenance activities, minimum and maximum flows, monitoring results, and other Project management activities implemented by the Licensee to avoid or address water quality impacts.

If monitoring results confirm that the Project is not affecting water quality objectives in Morgan Creek or Pine Creek, the Licensee may submit a request to the Deputy Director to modify the annual review meeting and reporting timing interval. Any modifications to the annual review meeting and reporting schedule require approval by the Deputy Director prior to implementation. The Licensee shall file with FERC the Deputy Director-approved annual review meeting and reporting schedule, and any approved amendments thereto.

CONDITIONS 10 – 32

CONDITION 10. The Licensee shall ensure no net loss of wetland or riparian habitat functions and compliance with the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Board 2019) and the *California Wetlands Conservation Policy* (Governor's Executive Order W-59-93).

⁷ The FERC eLibrary web address is: https://elibrary.ferc.gov/idmws/docket_search.asp

CONDITION 11. Any plan developed as a condition of this certification will require review and consideration for approval by the Deputy Director, unless otherwise specified. The State Water Board's approval authority, including authority delegated to the Deputy Director or others, includes the authority to withhold approval or to require modification of a proposal, plan, or report prior to approval. The State Water Board may take enforcement action if the Licensee fails to provide or implement a required item in a timely manner. If a time extension is needed to submit an item for Deputy Director approval, the Licensee shall submit a written request for the extension, with justification, to the Deputy Director no later than 60 days prior to the deadline. The Licensee shall file with FERC any Deputy Director-approved time extensions. The Licensee shall not implement any plans or reports until after receiving Deputy Director approval and any other necessary regulatory approvals.

CONDITION 12. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) to incorporate changes in technology, sampling, or methodologies; (2) if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair beneficial uses; (3) to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act; (4) to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to meet water quality objectives and protect beneficial uses of water; and (5) to require additional monitoring and/or other measures, as needed, to ensure that continued operation of the Project meets water quality objectives and protects the beneficial uses of Pine Creek Mine.

CONDITION 13. Future changes in climate projected to occur during the FERC license term may significantly alter the baseline assumptions used to develop the conditions of this certification. The State Water Board reserves authority to add to or modify the conditions of this certification, to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to Project-affected stream reaches.

CONDITION 14. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this certification.

CONDITION 15. In addition to the specific conditions in this certification, the Project shall be operated in a manner consistent with all applicable requirements of the Basin Plan.

CONDITION 16. In addition to the specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

CONDITION 17. Unless otherwise specified in this certification or at the request of the Deputy Director, data and/or reports shall be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

CONDITION 18. This certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish & Game Code §§ 2050 – 2097) or the federal ESA (16 U.S.C. §§ 1531 – 1544). If a “take” will result from any act authorized under this certification or water rights held by the Licensee, the Licensee must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Licensee is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

CONDITION 19. The Licensee shall submit any change to the Project, including operations, facilities, technology changes or upgrades, or methodology, which may have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state and/or federal agencies. If the State Water Board is not notified of a change to the Project, it will be considered a violation of this certification. If such a change would also require submission to FERC, the change must first be submitted and approved by the Executive Director of the State Water Board unless otherwise delegated in this certification or other State Water Board approval.

CONDITION 20. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies, penalties, process, or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 21. In response to a suspected violation of any condition of this certification, the State Water Board or Lahontan Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. (Wat. Code, §§ 1051, 13165, 13267, and 13383.)

CONDITION 22. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local approvals. The Licensee is responsible for compliance with all applicable federal, state, or local laws or ordinances and shall obtain authorization from applicable regulatory agencies prior to the commencement of Project activities.

CONDITION 23. Any requirement in this certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 24. Upon request, a construction schedule shall be provided to the State Water Board staff. The Licensee shall provide State Water Board and Lahontan Regional Water Board staff access to Project sites to document compliance with this certification.

CONDITION 25. A copy of this certification shall be provided to any contractor and all subcontractors conducting Project-related work, and copies shall remain in their possession at the Project site(s). The Licensee shall be responsible for work conducted by its contractor, subcontractors, or other persons conducting work related to the Project.

CONDITION 26. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

CONDITION 27. Activities associated with operation and maintenance of the Project that threaten or potentially threaten water quality shall be subject to further review by the Deputy Director and Executive Officer of the Lahontan Regional Water Board. Any proposal for Project maintenance or repair work involving Project-affected water bodies, including dewatering of impoundments and impoundment drawdowns to facilitate repair or maintenance work, shall be filed with the Deputy Director for prior review and consideration for approval.

CONDITION 28. The Licensee shall comply with the terms and conditions in the State Water Board's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; State Water Board Order 2009-0009-DWQ, as amended by State Water Board Orders 2010-0014-DWQ and 2012-0006-DWQ), and ongoing amendments during the life of the Project.

CONDITION 29. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 30. This certification is subject to modification or revocation upon administrative or judicial review, including but not limited to review and amendment pursuant to California Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

CONDITION 31. This certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent application for certification was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application for certification specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

CONDITION 32. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.



Eileen Sobeck
Executive Director

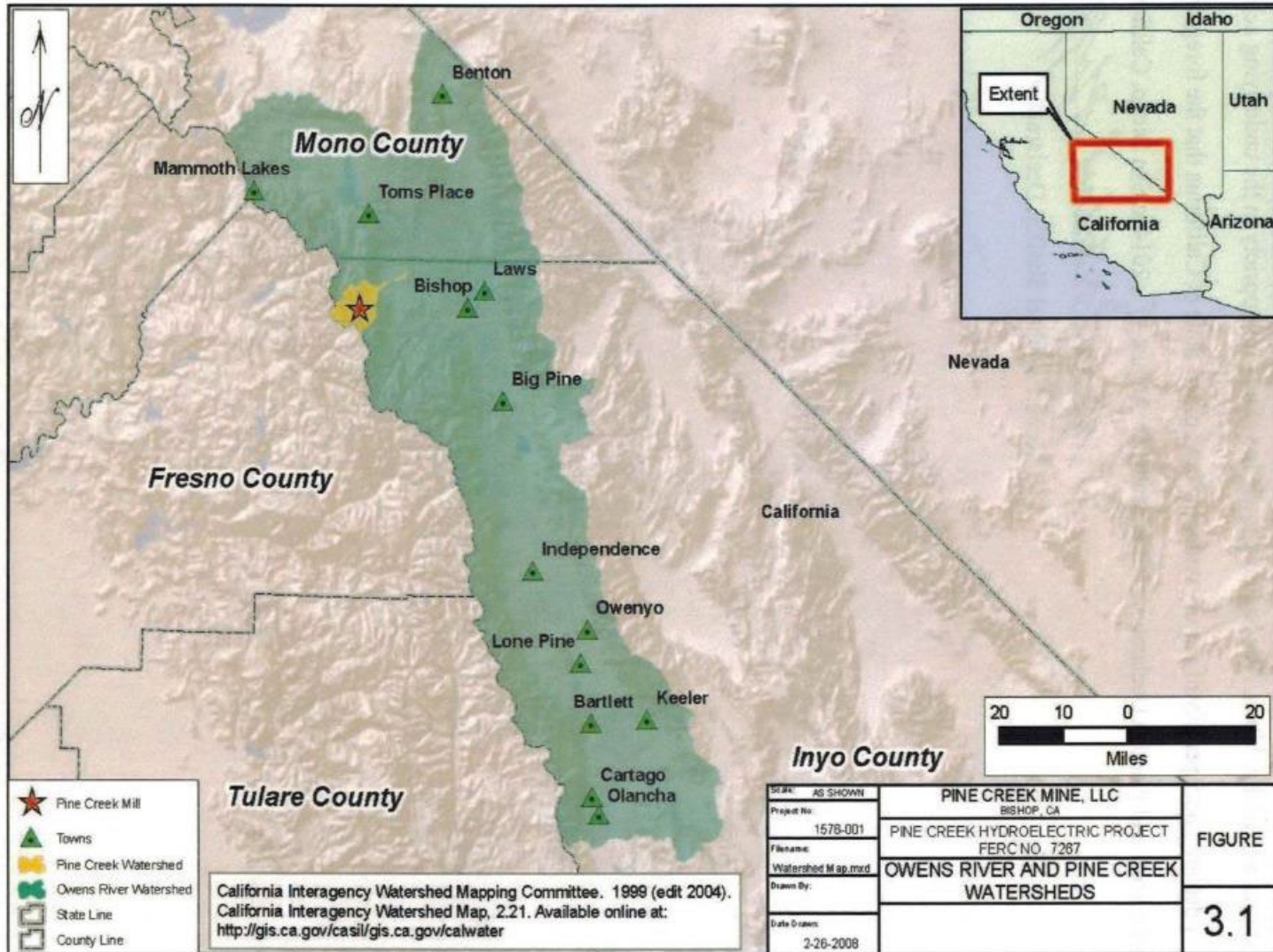
August 25, 2020

Date

References

- California Department of Transportation (Caltrans). 2017. *Stormwater Quality Handbook: Project Planning and Design Guide*.
- Federal Energy Regulatory Commission (FERC). 2018. Environmental Assessment, Pine Creek Mine Hydroelectric Project-FERC Project No. 12532-006 (PCM).
- Pine Creek Mine, LLC (PCM, LLC). 2016a. [Final Application for Original License: Pine Creek Mine Tunnel Hydroelectric Project; FERC Project No. 12532](#). FERC eLibrary no. 20160212-5280. Available at <https://elibrary.ferc.gov/>.
- _____. 2016b. [Revised Final Application for Original License: Pine Creek Mine Tunnel Hydroelectric Project; FERC Project No. 12532](#). FERC eLibrary no. 20160708-5031. Available at <https://elibrary.ferc.gov/>.
- Lahontan Regional Water Quality Control Board (RWQCB). 1995. [Water Quality Control Plan for the Lahontan Region, North and South Basins](#). Available at https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch1_intro.pdf.
- State Water Board. 2009. *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)*. Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ.
- State Water Board. 2012. *Delegation of Authority to State Water Resources Control Board Members Individually and to the Deputy Director for Water Rights*. Resolution No. 2012-0029.
- State Water Board. 2017. *Surface Water Ambient Monitoring Program: Quality Assurance Program Plan*.
- State Water Board. 2017. *Redelegation of Authorities pursuant to Resolution No. 2012-0029*.
- State Water Board. 2019. *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*.
- United States Department of the Interior, Bureau of Land Management (BLM). 2015. *BLM Manual, MS 9113 - Roads*.
- United States Forest Service (USFS). 2012. *National Best Management Practices for Water Quality Management on National Forest System Lands. Volume 1: National Core BMP Technical Guide (FS-990a)*.

Figure 1. Pine Creek Mine Hydroelectric Project Location Map



Source: Pine Creek Mine Hydroelectric Project License Application, Pine Creek Mine, LLC, July 2016

Figure 2. Easy-Go Adit Concrete Plug Diagram

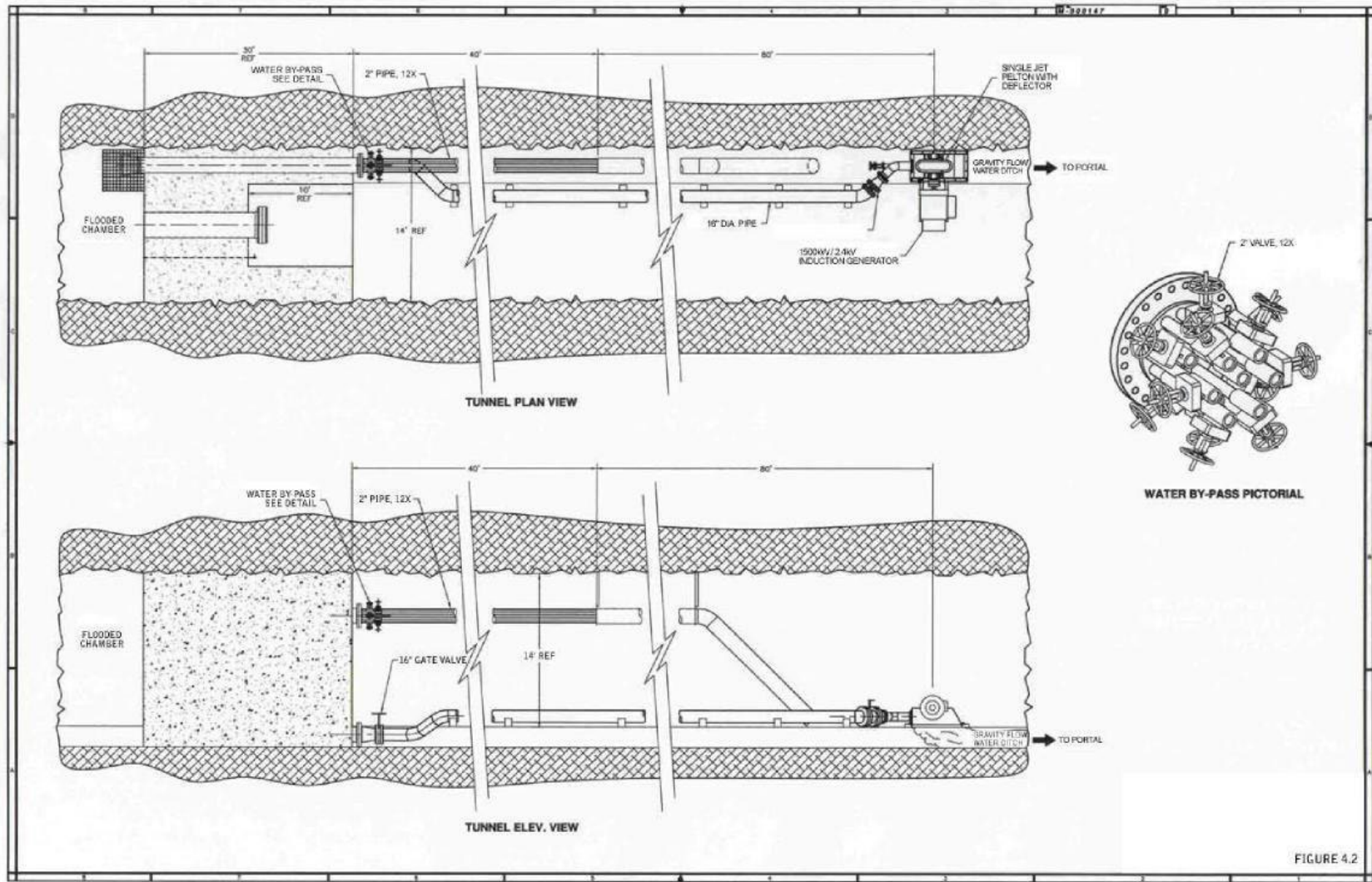
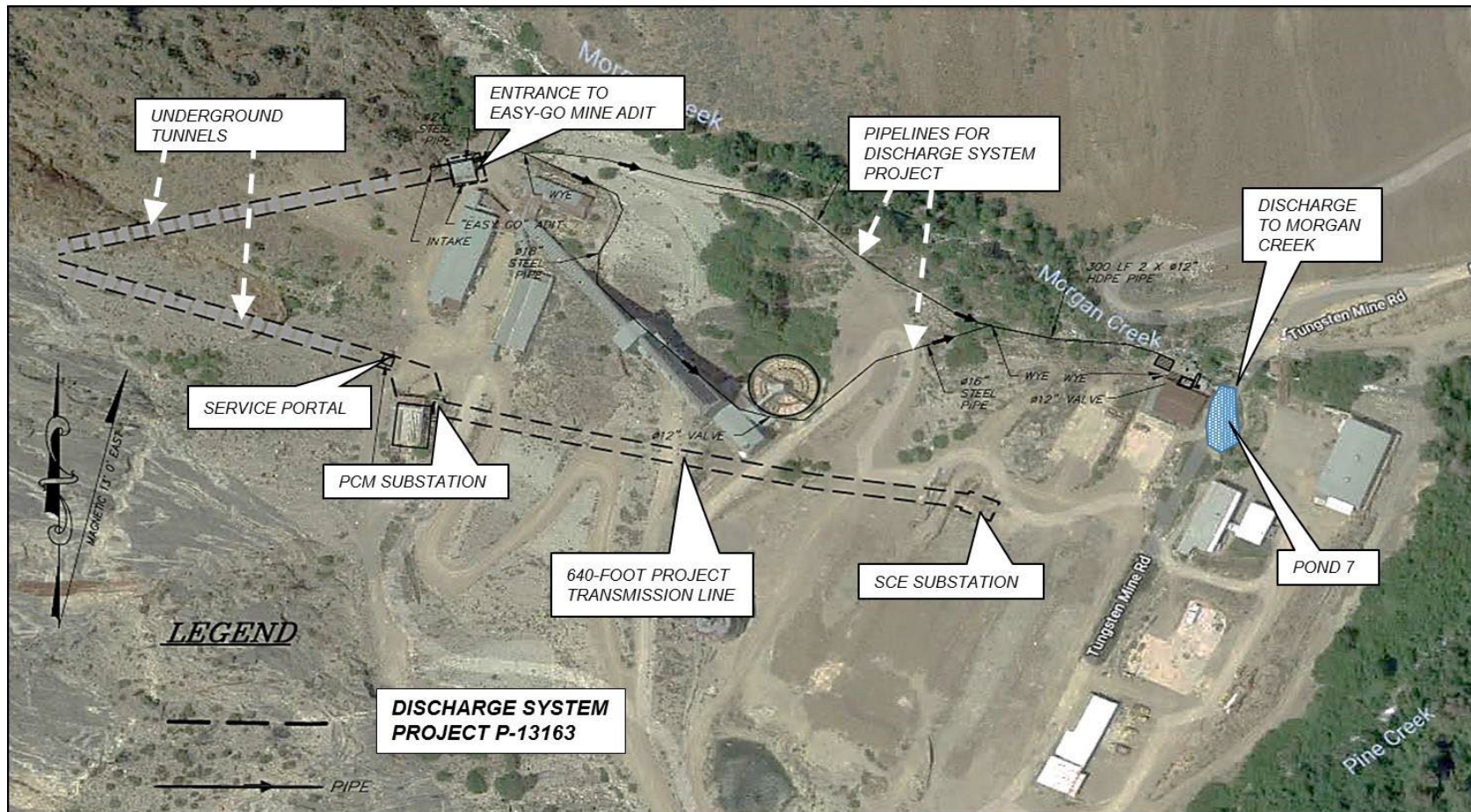


FIGURE 4.2

Source: Pine Creek Mine Hydroelectric Project License Application, Pine Creek Mine, LLC, July 2016

Figure 3. Existing Discharge to Morgan Creek



Source: Pine Creek Mine Hydroelectric Project Environmental Assessment, FERC, February 2018