State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 - Northern
601 Locust Street
Redding, CA 96001
www.dfg.ca.gov

EDMUND G. BROWN, JR, Governor
CHARLTON H. BONHAM, Director

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

NOTICE OF AVAILABILITY AND INTENT TO ADOPT

THE DRAFT INITIAL STUDY/ NEGATIVE DECLARATION (IS/ND)

for the

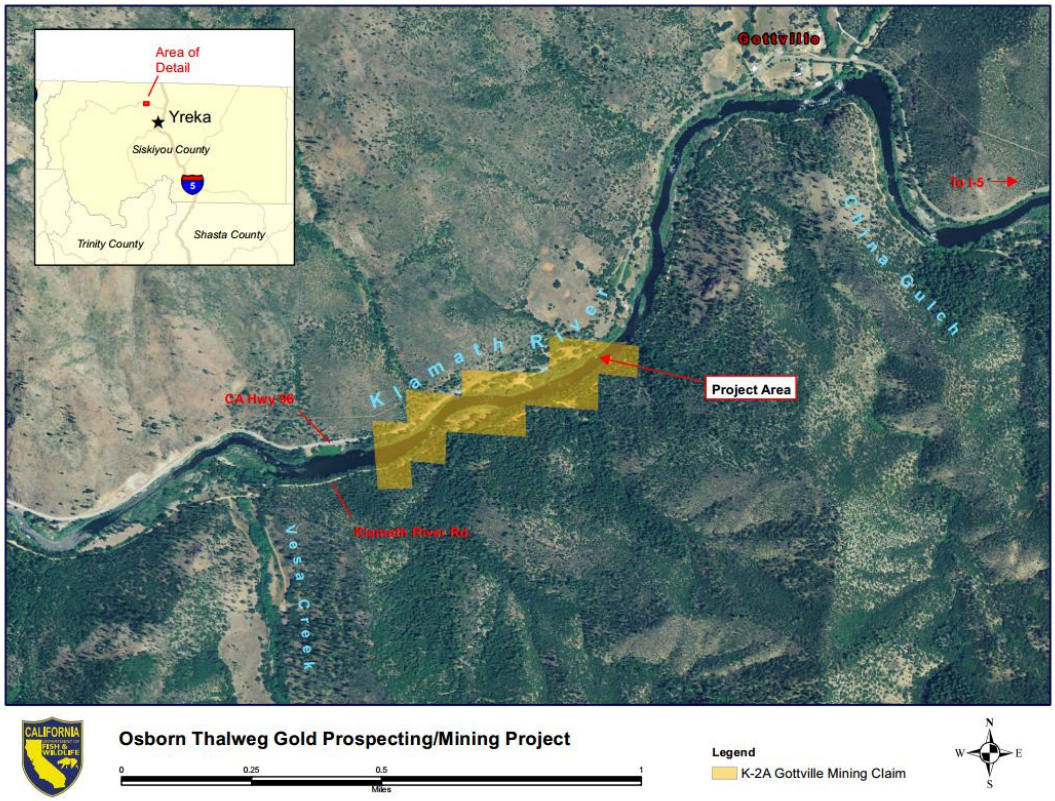
OSBORN THALWEG GOLD PROSPECTING/MINING PROJECT

Lake or Streambed Alteration Agreement Number 1600-2012-0238-R1

Published June 4, 2014

Project Description: Mr. Phillip Osborn proposes to excavate underwater riverbed material along or near the thalweg (the line of lowest elevation) of the Klamath River for the exploration and recovery of gold. Work will be conducted between July 1 and September 30 of each calendar year. River bottom material will be hand excavated using a pick, shovel and pry bar and riverbed material will be assessed for gold content on a floating work platform. At no time will the riverbed material be collected by the use of a suction dredge hose and nozzle, nor will the use of any motorized vacuum, suction device or motorized sluice be used as part of the instream mining operation. Excavated riverbed material will be sampled and assessed on the floating platform using gold pans and sluice box. If the samples do not yield a sufficient amount of gold, the excavated material will be deposited back in the river. If the samples yield a sufficient amount of gold, the excavated "paydirt" will be transported to the right (north) riverbank via canoe for additional processing on land. Paydirt will be processed on shore using a sluice box.

Project Location: The Project area is located on river mile (RM) 166 of the Klamath River (approximately one mile downstream of Empire Creek and Lumgrey Creek), tributary to the Pacific Ocean in the County of Siskiyou, State of California; Section 2, Township 46N, Range 8W; U.S. Geological Survey (USGS) map Badger Mtn., Mount Diablo Base and Meridian; Latitude 41° 51' 30" N, Longitude 122° 44' 30" W. Work will take place in a small (approximately 300 square foot) portion of the K-2A Gottville Mining Claim.



Comment Period: Comments on the Initial Study/Mitigated Negative Declaration (IS/MND) may be provided through **July 7, 2014, at 5:00 pm**.

Document Availability: The IS/MND is available for review at Department of Fish and Wildlife(CDFW) Northern Region Office at 601 Locust Street, Redding, CA 96001and at 1625 South Main Street, Yreka, CA 96097. Electronic copies may be requested by contacting the IS/ND contact person or online at http://www.dfg.ca.gov/news/pubnotice/

IS/MND Contact Person: Brad Henderson; CDFW; 601 Locust Street; Redding, CA 96001; (530) 225-2362 brad.henderson@wildlife.ca.gov

Project Details and Impacts: Pursuant to Fish and Game Code section 1602, Phillip W. Osborn (Permittee) notified CDFW on August 29, 2012 with the intent to modify the bed and/or banks of the Klamath River in order to implement the proposed Project. CDFW has determined that the Project has the potential to substantially adversely affect existing fish and wildlife resources and therefore, a Lake or Streambed Alteration Agreement (LSAA) is required under Fish and Game Code section 1603. CDFW's issuance of the LSAA requires compliance with CEQA, and because no other discretionary public agency approvals have been required to date, CDFW has assumed lead agency status for the Project. Through measures contained in the LSAA and further analysis in the IS/ND, CDFW has determined that the project will not result in significant impacts to the environment.

OSBORN THALWEG GOLD PROSPECTING/MINING PROJECT

INITIAL STUDY AND NEGATIVE DECLARATION

LAKE OR STREAMBED ALTERATION NUMBER: 1600-2012-0238-R1

JUNE 4, 2014

INITIAL STUDY/ NEGATIVE DECLARATION

Project Title: Osborn Thalweg Gold Prospecting/Mining Project (Project) (Lake or Streambed Alteration Agreement Number 1600-2012-0238-R1)

Project Proponent:

Phillip W. Osborn
1027 North Street
Yreka, California 96097

Lead Agency: California Department of Fish and Wildlife (CDFW)

Lead Agency Contact Person and Phone Number:
Brad Henderson
California Department of Fish and Wildlife
601 Locust Street
Redding, CA 96001
(530) 225-2362
Brad.henderson@wildlife.ca.gov

Project Area: The Project area is located on river mile (RM) 166 of the Klamath River (approximately one mile downstream of Empire Creek and Lumgrey Creek), tributary to the Pacific Ocean in the County of Siskiyou, State of California; Section 2, Township 46N, Range 8W; U.S. Geological Survey (USGS) map Badger Mtn., Mount Diablo Base and Meridian; Latitude 41° 51' 30" N, Longitude 122° 44' 30" W [Exhibit 1]. The Project area is administered by Klamath National Forest (KNF) and the Project is also within the K-2A Gottville Gold Mining Claim, an active mining claim owned by The New 49'ers, Inc. of Happy Camp, CA. K-2A Gottville Mining Claim is regularly used for small-scale gold mining and camping by members of the New 49'ers, and the site is open to the public for general recreational use. The Project area may be accessed from State Highway mile marker 92.28 on State Highway 96. It is assumed that the Project area is approximately up to 5,000 square feet. Of the 5,000 square foot area, the majority of activity would be camping, access, and paydirt washing in the floodplain with approximately 300 square feet for active mining on the thalweg of the Klamath River.

Purpose of Initial Study/Negative Declaration: This document is an Initial Study/ Negative Declaration (IS/ND) for the Osborn Thalweg Gold Prospecting/Mining Project (Project). Pursuant to Fish and Game Code section 1602, Phillip W. Osborn (Permittee) notified CDFW on August 29, 2012 with the intent to modify the bed and/or banks of

the Klamath River in order to implement the proposed Project. CDFW has determined that the Project has the potential to substantially adversely affect existing fish and wildlife resources and therefore, a Lake or Streambed Alteration Agreement (LSAA) is required under Fish and Game Code section 1603. KNF, the agency with primary land use authority in the Project area, has determined that the Project may proceed without submission of a Plan of Operations (Appendix 1). CDFW's issuance of the LSAA requires compliance with the California Environmental Quality Act (CEQA), and because no other discretionary public agency approvals have been required to date, CDFW has assumed Lead Agency status for the Project under CEQA.

The purpose of this IS/ND is to present an analysis of environmental consequences related to CDFW's approval of the proposed Project through the issuance of the LSAA.

Availability of Document: The IS/ND and documents incorporated by reference herein are being made available to the public for review and comment for a period of 30 days at the following locations:

- Department of Fish and Wildlife, 601 Locust Street, Redding, CA 96001
- Department of Fish and Wildlife, 1625 South Main Street, Yreka, CA 96097
- http://www.dfg.ca.gov/news/pubnotice/

Questions or comments regarding this proposed ND may be addressed to:

Brad Henderson
California Department of Fish and Wildlife
601 Locust Street
Redding, CA 96001
(530) 225-2362
brad.henderson@wildlife.ca.gov

Project Description: CDFW is proposing to issue a LSAA to Mr. Philip Osborn for the proposed Project for a period of five years, subject to a potential one-time extension for up to five additional years. The Project would be limited to the underwater excavation of riverbed material along or near the thalweg (i.e., the line of lowest elevation) of the Klamath River for the exploration and recovery of gold. The Project area is within the K-2A Gottville Gold Mining Claim [Exhibit 1]. A total area of no more than 300 square feet (0.007 acre) of river bottom would be disturbed during each year of the Project. Work will be conducted between July 1 and September 30 of each calendar year. River bottom material will be hand excavated by a single underwater "hookah" diver (i.e., surface-supplied air to diver) using a pick, shovel and pry bar. Ten foot diameter test holes will be excavated to assess riverbed material for gold content. Excavation of each test hole will likely continue until bedrock is reached. It is estimated that the bedrock layer is approximately 30 feet below the current average river surface elevation and approximately 22 feet below the current thalweg. Excavated riverbed material will be loaded onto a three-foot by four-foot skip sitting on the river bottom and attached to a hoist line. Once full, the skip and excavated riverbed material will be hoisted by motorized winch to a 12-foot by 16-foot floating work platform. Boulders will be stockpiled in a convenient location underwater to be used for refilling the test holes. A total of approximately 100 cubic yards of material would be excavated over the life of the Project and a maximum of approximately one cubic yard of material would be excavated each day. Test holes will be refilled with stockpiled boulders and other material when work is completed.

At no time will the riverbed material be collected by the use of a suction dredge hose and nozzle, nor will the use of any motorized vacuum or suction device be used as part of the instream mining operation.

Excavated riverbed material will be sampled and assessed on the floating platform using gold pans and sluice box. If the samples do not yield a sufficient amount of gold, the excavated material will be deposited back in the river. It is expected that the majority of the samples will not yield sufficient quantities of gold, and will be returned to the river. If the samples yield a sufficient amount of gold, the excavated "paydirt" will be transported to the right (north) riverbank via canoe for additional processing on land. Paydirt will be processed on shore using a non-motorized sluice box. Sediments passing through the sluice box will enter shallow settling pits designed to capture sediments and filter turbid water. All settling pits will be backfilled when work is completed at the end of each season.

Incorporation by Reference: The Biological Resources and Water Quality sections of this IS/ND incorporate portions of the following documents by reference: 1) Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report (State Clearinghouse Number 2010062060); and 2) Suction Dredge Permitting Program Subsequent Environmental Impact Report ("Suction Dredge EIR," State Clearinghouse Number 2009112005). In accordance with Section 15150 of the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15150), original incorporated documents will be available for inspection at the Department of Fish and Wildlife, 1625 South Main Street, Yreka, CA 96097.

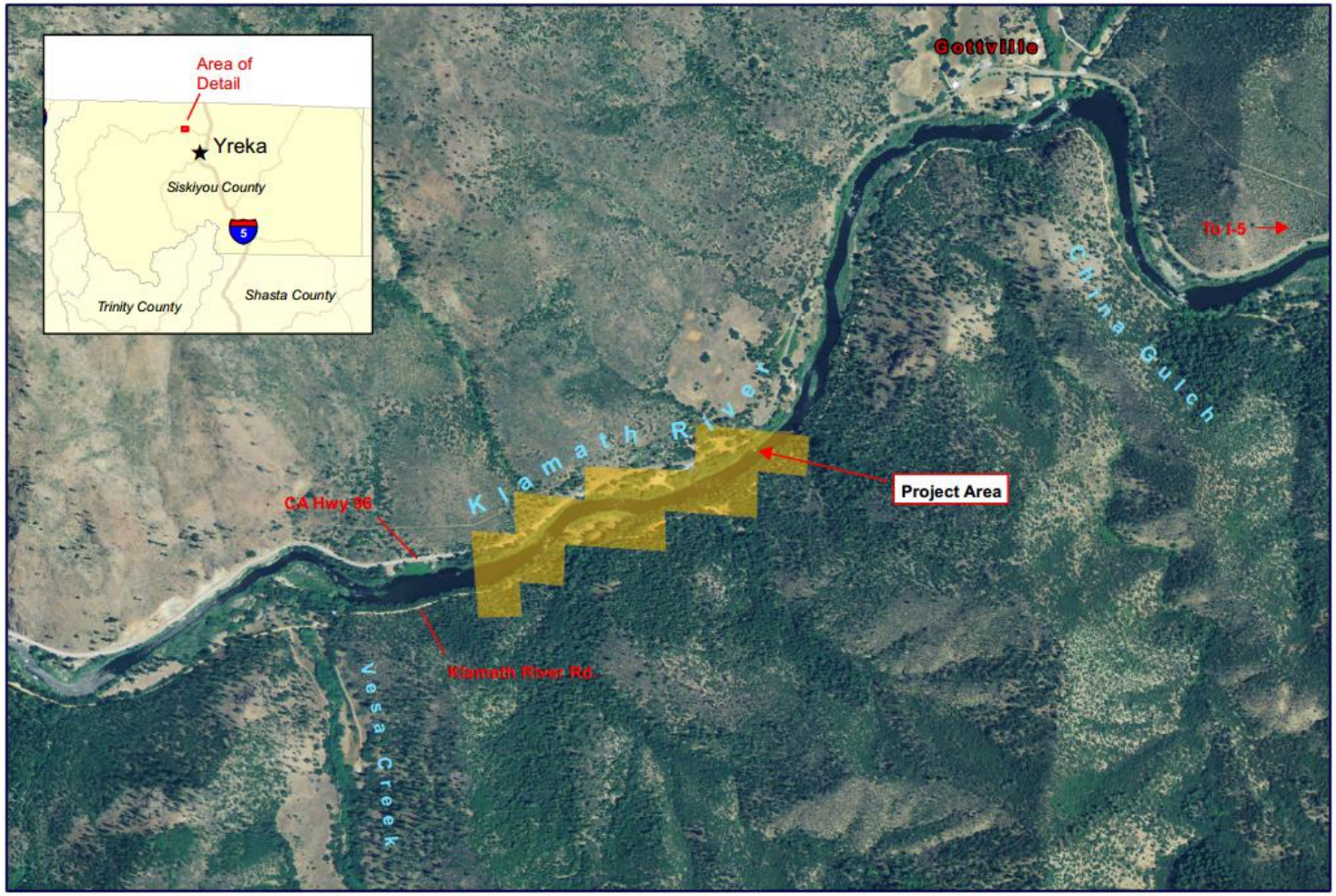

Area of Detail
Yreka
Siskiyou County
5
Trinity County
Shasta County
Gottville
To I-5
China Gulch
Klamath River
CA Hwy 96
Project Area
Klamath River Rd
Vesa Creek
Osborn Thalweg Gold Prospecting/Mining Project
0
0.25
0.5
1
Miles
Legend
K-2A Gottville Mining Claim
N
W
E
S

Exhibit 1

Surrounding Land Uses and Setting: The Project lies within KNF and includes the Klamath River and surrounding area. California State Highway 96 provides access to the area.

Other Public Agencies Whose Approval May Be Required:

- U.S. Army Corps of Engineers, Section 404 Clean Water Act permit
- North Coast Regional Water Quality Control Board (NCRWQCB) Section 401 Clean Water Act Water Quality Certification

Summary of Findings: This IS/ND has been prepared to assess the Project's potential effects on the environment and the significance of those effects. Based upon this IS/ND, and in consideration of the entire record, CDFW has determined that there is no substantial evidence that the proposed Project could result in a significant effect upon the environment. The IS/ND is therefore the appropriate document for CEQA compliance by CDFW.

This conclusion is supported by the following findings:

- The Project would result in no impacts to Aesthetics; Agriculture Resources; Air Quality; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Land Use and Planning; Noise; Population and Housing; Public Services; Recreation; Transportation/Traffic; or Utilities and Service Systems.

- The Project would have impacts below a level of significance to Biological Resources, Greenhouse Gas Emissions, Hydrology and Water Quality, and Mineral Resources.

- The Project would not substantially degrade the quality of the environment.

- The Project would not achieve short term environmental improvement to the disadvantage of long term environmental improvement.

- The Project would not have environmental effects that are individually limited but cumulatively considerable.

- The Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

- The ND reflects CDFW's independent judgment.

Initial Study and Environmental Checklist Form

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist analysis on the pages that follow.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

On the basis of this initial evaluation, I find that the proposed Project COULD NOT have a significant effect on the environment, and therefore a NEGATIVE DECLARATION will be prepared:

6/4/14

Signature **Date**

Curt Babcock
Environmental Program Manager
California Department of Fish and Wildlife

INITIAL STUDY/ENVIRONMENTAL CHECKLIST

ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Will the Project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion: The Project location and surrounding area is composed of natural vegetation, landforms, and waterways with inherent scenic values. While not currently listed as an officially designated Scenic Highway, State Route 96 is eligible for future designation (Caltrans 2014). Surface operations and associated vehicles (pickup truck, travel trailer) may be visible from Highway 96 during the operating period. The floating work platform would be visible mainly from the river.

The Project does not propose vegetation removal or disturbance. In-river test holes will not be visible from Highway 96 and the holes will be filled with riverbed materials when work is completed. Above water activities, including accessing the site, staging equipment, and processing paydirt would be compatible with the site's current status as an active mining claim and camping area used by the New 49'ers, Inc. and other members of the public. Shallow settling pits on the floodplain designed to capture sediments and filter turbid water will be backfilled when work is completed at the end of each season. No scenic resources would be damaged, the visual character and quality of the site would not be substantially degraded, and the work would not result in any new sources of substantial light or glare.

Impact: No impacts to Aesthetics are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Will the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion: The Project does not involve disturbance to or conversion of any agricultural resource, and would not result in rezoning of forest land.

Impact: No impacts to Agricultural and Forest Resources are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Will the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion: The Project is a small mining operation conducted along the thalweg of the Klamath River with no potential to conflict with any air quality standard, expose sensitive receptors to pollutants, or create objectionable odors.

Impact: No impacts to Air Quality are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Will the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on wetlands as defined by the Department of Fish and Wildlife (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion: A query of the California Natural Diversity Database (CNDDB) was carried out by CDFW on March 12, 2014. The following United States Geological Survey (USGS) 7.5-minute topographic quadrangles were queried: Condrey Mountain, Buckhorn Bally, Cottonwood Peak, Horse Creek, McKinley Mountain, Badger Mountain, Russell Peak, Indian Creek Baldy, and Yreka. The Cal Fish database and numerous other references were also reviewed in order to determine the possible occurrence of special status species. The Project area was also examined by Brad Henderson, Senior Environmental Scientist, on March 13, 2014.

Environmental Setting: For purposes of this analysis, the following areas have been assessed: 1) the surface and water column of the Klamath River where the floating work platform would be located; 2) the excavation area on the river bottom beneath the floating work platform; and 3) terrestrial staging and paydirt processing areas. The site is adjacent to State Route 96 near mile marker 92.28 and is a known gold prospecting/mining area under claim by the New 49'ers mining club (New 49'ers 2014). An existing vehicle access trail leading from Highway 96 to an existing signed camping area provides access to the Project area. Surrounding upland vegetation not apparently influenced by riparian hydrology includes Jeffrey pine (*Pinus jeffreyi*), black oak (*Quercus kellogii*), incense cedar (*Calocedrus decurrens*), birchleaf mountain mahogany (*Cercocarpus betuloides*), wedgeleaf ceanothus (*Ceanothus cuneatus*), and manzanita (*Arctostaphylos* sp.). The vehicle trail leads to an approximately 4,000 square foot open area currently used

for camping, campfires, and paydirt washing. This open area is dominated by a variety of herbaceous species tolerant of disturbance including several grasses and other monocots, dead nettle (*Lamium* sp.), narrow leaf plantain (*Plantago lanceolata*), spreading hedge parsley (*Torillis arvensis*), and others. Banks of the Klamath River are dominated by hardstem bulrush (*Schoenoplectus acutus*), shrub willows (*Salix exigua* and/or *melanopsis*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), and Himalayan blackberry (*Rubus armeniacus*).

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Special Status Plant Species: The special-status plants discussed below are known from the vicinity of the Project area. Because the Project does not introduce new ground disturbance to the site, no impacts are expected. Furthermore, rare plants known from the vicinity are not expected to occur on the site.

Peck's Lomatium (*Lomatium peckianum*): Peck's lomatium is listed as listed as California Rare Plant Rank 2B.2 (rare, threatened, or endangered in CA; common elsewhere). This perennial herb blooms from April through May. Habitat for the species includes volcanic soils in pine/oak woodlands 800–1800, from 800-1,800 meters elevation. The species is found in Siskiyou County and Oregon and is threatened by development. The species has been observed west of Lumgrey Creek about 2 miles from the Project area (CNDDB). Due to existing public use and disturbance it is not expected to occur within the Project area.

Siskiyou Mariposa-Lily (*Calochortus persistens*): Siskiyou mariposa-lily is listed as listed as California Rare Plant Rank 1B.2 (rare, threatened, or endangered in CA and elsewhere). This perennial herb blooms from June through July. Habitat for the species includes rocky and acidic soils in lower montane coniferous forest and north coast coniferous forest from 1,000-1,860 meters elevation. The species is found in Siskiyou County and Oregon. It is threatened by non-native plants, habitat disturbance, road construction, horticultural collecting, grazing, and alteration of fire regimes. As of 2002, no successful reproduction observed in past five years. Klamath NF has adopted species management guidelines. The nearest occurrences are approximately five miles east of the Project area (CNDDB). Due to the lack of suitable soils, existing public use, and disturbance it is not expected to occur within the Project area.

Impact: No impacts to special status plant species are anticipated.

Special Status Terrestrial Animals: The Project area is expected to support a variety of terrestrial mammals, birds, reptiles, amphibians, and invertebrates for foraging and limited breeding/nesting habitat.

Pacific Fisher *(Marten pennanti (pacifica) DPS)*: The Pacific Fisher is listed as a California species of special Concern. Pacific fisher is a specialized forest carnivore that is associated with closed-canopy, late-succession forests throughout its range. Pacific fisher is expected to pass through the area, and a known occurrence is approximately five miles away (CNDDB).

Great Blue Heron Rookery (*Ardea herodias*): Although great blue heron is widespread and common, the CNDDB tracks great blue heron colonial nesting sites as a special status resource. Great blue herons gather for nesting in "rookeries", often in large trees in proximity to foraging areas. CNDDB reports a heron rookery approximately one mile from the Project area. During the site visit, both deciduous and evergreen trees were scanned for "stick nests" near the Project area. There was no evidence of active rookeries observed adjacent to the Project area and the Project would not otherwise directly or indirectly impact other rookeries along the Klamath River.

Siskiyou Sideband (*Monadenia chaceana*): Siskiyou sideband is tracked by the CNDDB, but has no federal or state status. Siskiyou sideband is a terrestrial snail associated with forested and open talus or rocky areas. Vegetation types used as habitat include dry conifer and mixed conifer/hardwood forest communities as well as oak communities. Mollusks which inhabit rocky habitats also utilize the surrounding forest areas for foraging and dispersal during moist, cool conditions. Seasonal deep refugia include talus deposits and outcrops, which contain stable interstitial spaces large enough for snails to enter. These seasonal refugia also provide protection from fire and predation during inactive periods. Within rocky habitat, the species is also associated with subsurface water, herbaceous vegetation, and deciduous leaf litter. The species has been documented within nine miles of the Project area. Large piles of rocks (termed "derrick pile" by KNF) occur near the Project area, and it is possible that this species occurs in the area. If the species does occur it is unlikely but possible that individuals could be trampled as a result of the Project if they venture into the camping area away from the derrick pile. This would constitute an adverse, but less than significant impact.

Terrestrial Snail (*Monadenia fidelis leonine*): This terrestrial snail with no common name is tracked by the CNDDB, but has no federal or state status. This species is associated with dead alder leaves and trunks near streams, in relatively undisturbed forest; among leaves (deep maple and alder leaf litter); and under debris on ground forested and open talus or rocky areas. The species has been documented in the Beaver Creek drainage, approximately four miles from the Project area. The CNDDB states that the Beaver Creek occurrence is possibly extirpated, and the species has not been collected alive since the 1930's. It is possible but quite unlikely that the Project area supports potential habitat for this species. The activities in the previously disturbed camping area are not likely to result in a significant impact to the species or potential habitat.

Other Terrestrial Species Discussed in Suction Dredge EIR: CDFW has determined that suction dredge mining could result in potentially significant environmental effects on the behavior, movements and distributions of special-status passerines (songbirds) associated with riparian habitat as a result of noise associated with dredge rigs, dredgers accessing streams, direct disturbance of riparian habitat, alteration of prey resource base, and suction dredging encampment activities at night (e.g., lights and noise), especially if suction dredging activities occur during the passerine breeding season. In contrast to consideration of suction dredging on a statewide basis, this Project would take place in a small previously cleared area currently used for recreation, camping, and mining. Riparian vegetation would not be impacted and motorized mining equipment including any type of motorized suction device would not be used. The CNDDB query performed for the Project did not reveal known occurrences of special status passerines in the vicinity of the Project. Disturbance to nearby nesting passerines would be temporary and minor, and would be unlikely to interrupt nearby nesting if present during the work period. Impacts to passerines are below a level of significance.

Impact: Impacts to terrestrial animals are below a level of significance.

Fish and Aquatic Mollusks: Several fish and mollusk species use the Klamath River during all or some portion of their lives. The Klamath River provides habitat for native fish including anadromous salmonids and other anadromous fish, as well as resident native fish and special status species. Non-salmonid anadromous fish include Pacific lamprey (*Entosphenus tridentatus*), green sturgeon (*Acipenser medirostris*), and nonnative American shad (*Alosa sapidissim*). Life history and occurrence information below is adapted from the Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report (State Clearinghouse Number 2010062060).

This impact assessment also includes information adapted from the Suction Dredge EIR. The analysis for the proposed Project includes the general assumption that the hand excavation of stream materials (without any motorized device for sucking or washing material from the stream bottom) is of equal to lower impact when compared with

suction dredging. While the proposed Project would disturb the stream bottom and discharge sediments resulting in some turbidity, there is no potential for entrainment of organisms.

Major stressors affecting wildlife and habitats in the North Coast–Klamath Region include water management conflicts, in-stream gravel mining, forest management conflicts, altered fire regimes, agriculture and urban development, excessive livestock grazing, non-native fishes, and invasive species. The North Coast/Klamath Region is the focus of some of the highest historic use by small-scale miners, including past use by suction dredgers.

Anadromous salmonids: Anadromous salmonids in the Klamath River include fall- (including late-fall) and spring-run Chinook salmon (*Oncorhynchus tshawytscha*); coho salmon (*Oncorhynchus kisutch*); fall-, winter-, and summer-run steelhead (*Oncorhynchus mykiss irideus*); and coastal cutthroat trout (*Onchorynchus clarki clarki*). Anadromous salmonids share many similar life-history traits, but the timing of their upstream migrations, habitat preferences, and distributions differ. All anadromous salmonids spawn in gravel or cobble substrates that are relatively free of fine sediment with suitable surface and subsurface flow to carry oxygen to the eggs and carry metabolic waste away from the eggs. The eggs hatch several weeks or months after spawning, depending on species and water temperature. The resulting yolk-sac fry reside in the gravel for several more weeks until their yolk sac is depleted. The fry then emerge and seek slow shallow areas near shoreline or vegetative cover, gradually moving into deeper and faster water as they grow. Juveniles feed and grow on their way downstream and may also rear for some time in the Klamath River Estuary prior to entering the ocean. After entering the ocean, smolts range up and down the coast as they grow to adulthood. Most adult salmonids return to spawn in the stream where they were born, although some straying does occur. Specific details of life history and distribution are described below for each anadromous species and salmonid run. The NCRWQCB has identified a known thermal refuge for cold water fish approximately one mile east of the Project area at the mouth of Empire/Lumgrey Creek (NCRWQCB 2009).

Chinook Salmon: Two Chinook salmon Evolutionarily Significant Units (ESUs) occur in the Klamath River. The Southern Oregon and Northern California Coastal ESU includes all naturally spawned Chinook salmon in the Lower Klamath River downstream from its confluence with the Trinity River, and the Upper Klamath and Trinity Rivers ESU, which includes all naturally spawned populations of Chinook salmon in the Klamath and Trinity rivers upstream of the confluence of the Klamath and Trinity rivers. Neither ESU is state or federally listed. This analysis focuses on runs of the Upper Klamath and Trinity ESU known to occur at the Project area.

Fall-Run Chinook Salmon: Fall-run Chinook salmon are distributed throughout the Klamath River downstream from Iron Gate Dam. Adult upstream migration through the Klamath River Estuary and Lower Klamath River peaks in early September and continues through late October (Moyle 2002; FERC 2007; Strange 2008). Spawning peaks in late October and early November, and fry begin emerging from early February through early April (Stillwater Sciences 2009), although timing may vary somewhat depending on temperatures in different years and tributaries. Fall-run Chinook salmon in the Klamath Basin exhibit three juvenile life-history types: Type I (ocean entry at age 0 in early spring within a few months of emergence), Type II (ocean entry at age 0 in fall or early winter), and Type III (ocean entry at age 1 in spring) (Sullivan 1989). Based on outmigrant trapping at Big Bar on the Klamath River from 1997 to 2000, 63 percent of natural Chinook salmon outmigrants arc Type I, 37 percent are Type II, and less than one percent are Type III (Scheiff et al. 2001). Although, trapping efforts are not equal among seasons, the results are consistent with scale analysis of adult returns by Sullivan (1989).

Critical stressors on fall-run Chinook salmon in the basin include water quality and quantity in the mainstem and within spawning tributaries. Downstream from Iron Gate Dam, the mainstem Klamath River undergoes seasonal changes in flows, water temperature, dissolved oxygen, and nutrients, as well occasional algal blooms. During outmigration, juvenile Chinook salmon are vulnerable to contracting disease from pathogens and parasites. The work

period for the proposed Project (July 1-September 30) would avoid potential impacts to spawning adults, egg incubation and emergence.

Spring-Run Chinook Salmon. Spring-run Chinook salmon in the Klamath Basin are distributed mostly in the Salmon and Trinity Rivers and on the mainstem downstream from these tributaries during migratory periods, although a few fish are occasionally observed in other areas (Stillwater Sciences 2009). No spawning has been observed in the mainstem Klamath River (Shaw et al. 1997). Spring-run Chinook salmon historically spawned in the tributaries of the Upper Klamath Basin (Moyle 2002) with large numbers of Chinook salmon spawning in the basin above Klamath Lake in the Williamson, Sprague, and Wood Rivers (Snyder 1931). Large runs of spring Chinook salmon also returned to the Shasta, Scott, and Salmon rivers (Moyle et al. 1995). The runs in the Upper Klamath Basin are thought to have been in substantial decline by the early 1900s, and then were eliminated by the completion of Copco Dam in 1917 (Snyder 1931). The cause of the decline of the Klamath River spring-run Chinook salmon prior to Copco 1 Dam has been attributed to dams, overfishing, irrigation, and largely to commercial hydraulic mining operations (Coots 1962; Snyder 1931). These large scale mining operations occurred primarily in the late 1800's, and along with overfishing, left spring-run Chinook salmon little chance to recover prior to dam construction in early 1900's. Dam construction eliminated much of the historical spring-run spawning and rearing habitat and was partly responsible for the extirpation of at least seven spring-run populations from the Klamath-Trinity River system (Myers et al. 1998). The construction of Dwinnell Dam on the Shasta River in 1926 was soon followed by the disappearance of the spring Chinook salmon run in that tributary (Moyle et al. 1995). The proposed Project will have no effect on the remaining spring-run Chinook salmon in the Salmon River and in the Trinity Basin.

Coho Salmon: The Southern Oregon/Northern California Coast (SONCC) coho salmon ESU is listed as federally threatened (NOAA Fisheries Service 1997). This ESU includes all naturally spawning populations between Punta Gorda, California and Cape Blanco, Oregon, which encompasses the Trinity and Klamath Basins (NOAA Fisheries Service 1997). Three artificial propagation programs are considered to be part of the ESU: the Cole Rivers Hatchery, Trinity River Hatchery, and Iron Gate Hatchery coho salmon programs. In addition, coho salmon in the Klamath Basin have been listed by the California Fish and Game Commission as threatened under the California Endangered Species Act (CESA) (CDFG 2002a). The National Marine Fisheries Service (NMFS) has designated the Klamath River below Iron Gate Reservoir as Critical Habitat (NOAA Fisheries Service 1999). NMFS' designation of freshwater and estuarine critical habitat includes riparian areas that provide the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

Coho salmon are native to the Klamath Basin. Williams et al. (2006) described nine historical coho salmon populations within the Klamath Basin, including the Upper Klamath River, Shasta River, Scott River, Salmon River, Mid-Klamath River, Lower Klamath River, and three population units within the Trinity River watershed (upper Trinity River, lower Trinity River, and South Fork Trinity River), Although coho salmon are native to the Klamath River, documentation of coho salmon in the Klamath River is scarce prior to the early 1900's due, in part, to the apparent difficulty in recognizing there were different species of salmon inhabiting the rivers of the area (Snyder 1931). Snyder (1931) reported that coho salmon were said to migrate to the headwaters of the Klamath River to spawn, but that most people did not distinguish between the species. During 2006 administrative hearings it was concluded that coho salmon migrated past the present site of Iron Gate Dam based on historical records and tribal accounts (Administrative Law Judge 2006).

Coho salmon are currently widely distributed in the Klamath River downstream from Iron Gate Dam (RM 190), which blocks the upstream migration of coho salmon to historically available habitat in the upper watershed. Before the construction of the dams, coho salmon were apparently common and widely distributed throughout the watershed, probably in both mainstem and tributary reaches up to and including Spencer Creek at RM 228 (NRC 2004, as cited in NOAA Fisheries Service 2007; Hamilton et al. 2005). Coho salmon utilize the mainstem Klamath River for some or all

of their life history stages (spawning, rearing and migration). However, the majority of returning adult coho salmon spawn in the tributaries to the mainstem (Magneson and Gough 2006, NOAA Fisheries Service 2010).

Coho salmon adults in the Klamath Basin migrate upstream from September through late December, peaking in October and November. Spawning occurs mainly in November and December, with fry emerging from the gravel in the spring, 3 to 4 months after spawning (Trihey and Associates 1996; NRC 2004). Some fry and age-0+ juveniles enter the mainstem in the spring and summer following emergence (Chesney et al. 2009). Large numbers of age-0 juveniles from tributaries in the mid-Klamath River move into the mainstem in the fall (October through November) (Soto et al. 2008; Hillemeier et al. 2009). Juvenile coho salmon have been observed to move into non-natal rearing streams, off-channel ponds, the Lower Klamath River, and the estuary for overwintering (Soto et al. 2008; Hillemeier et al. 2009), Some proportion of juveniles generally remain in their natal tributaries to rear. Age 1+ coho salmon migrate from tributaries into the mainstem Klamath River from February through mid-June with a peak in April and May, which often coincides with the descending limb of the spring hydrograph (NRC 2004; Chesney and Yokel 2003; Scheiff et al, 2001), Once in the mainstem, smolts appear to move downstream rather quickly; Wallace (2004) reported that numbers of coho salmon smolts in the Klamath River estuary peaked in May, the same month as peak outmigration from the tributaries.

The major activities identified as responsible for the decline of coho salmon in Oregon and California and/or degradation of their habitat included logging, road building, grazing, mining, urbanization, stream channelization, dams, wetland loss, beaver trapping, artificial propagation, overfishing, water withdrawals, and unscreened diversions for irrigation (NOAA Fisheries Service 1997a). The work period for the proposed Project (July 1-September 30) would avoid potential impacts to spawning Coho adults, egg incubation and emergence, and the low level of disturbance associated with this Project would not significantly affect habitat.

Summer Steelhead: Klamath Basin steelhead populations belong to the Klamath Mountain Province ESU. This ESU is not federally or state listed. Summer steelhead are distributed throughout the Klamath River downstream from Iron Gate Dam and in its tributaries, and historically used habitat upstream of Upper Klamath Lake prior to the construction of Copco 1 Dam (Hamilton et al. 2011). Based on available escapement data, approximately 55 percent of summer steelhead spawn in the Trinity River and other lower-elevation tributaries. Most remaining summer steelhead are believed to spawn in tributaries between the Trinity River and Seiad Creek (downstream of the Project area), with high water temperatures limiting their use of tributaries farther upstream (NRC 2004). The mainstem Klamath River is used primarily as a migration corridor for adult summer steelhead to access holding and spawning habitat in tributaries to the Klamath River. Summer steelhead adults enter and migrate up the Klamath River from March through June while sexually immature (Hopelain 1998), then hold in cooler tributary habitat until spawning begins in December (USFWS 1998). Forty to 64 percent of summer steelhead in the Klamath River exhibit repeat spawning, with adults observed to migrate downstream to the ocean after spawning (also known as "runbacks") (Hopelain 1998). Summer steelhead in the basin also have a "half-pounder" life-history pattern, in which an immature fish emigrates to the ocean in the spring, returns to the river in the fall, spends the winter in the river, then emigrates to the ocean again the following spring (Busby et al. 1994; Moyle 2002).

Juvenile summer steelhead in the Klamath Basin may rear in freshwater for up to 3 years before outmigrating. Although many juveniles migrate downstream at age 1+ (Scheiff et al. 2001), those that outmigrate to the ocean at age 2+ appear to have the highest survival (Hopelain 1998). Juveniles outmigrating from tributaries at age 0+ and age 1+ may rear in the mainstem or in non-natal tributaries (particularly during periods of poor water quality) for 1 or more years before reaching an appropriate size for smolting. Age 0 juvenile steelhead have been observed migrating upstream into tributaries, off-channel ponds, and other winter refuge habitat in the Lower Klamath River (Stillwater Sciences 2010). Juvenile outmigration can occur from the spring through fall. Smolts are captured in the mainstem and estuary throughout the fall and winter (Wallace 2004), but peak smolt outmigration normally occurs from April through June, based on estuary captures (Wallace 2004). Temperatures in the mainstem are generally suitable for

juvenile steelhead, except during periods of the summer, especially upstream of Seiad Valley (for more species information see USFWS 1998; Moyle 2002; NRC 2004; and Stillwater Sciences 2009). Critical limiting factors for summer steelhead are believed to include degraded habitats, fish passage, predation, and competition (Moyle et al. 2008). The proposed Project would not have a significant effect on summer steelhead.

Winter Steelhead. Moyle (2002) describes steelhead in the Klamath Basin as having a summer- and winter-run. Some divide the winter-run into fall and winter runs (Barnhart 1994; Hopelain 1998; USFWS 1998; Papa et al. 2007). In this section, "winter steelhead" refers to both fall and winter runs. Winter steelhead are widely distributed throughout the Klamath River and its tributaries downstream front Iron Gate Dam, and historically used habitat upstream of Upper Klamath Lake (Hamilton et al. 2011). The Trinity, Scott, Shasta, and Salmon Rivers are the most important spawning streams for winter steelhead. Winter steelhead adults generally enter the Klamath River from July through October (fall run) and from November through March (winter run) (USFWS 1998; Stillwater Sciences 2010). Winter steelhead primarily spawn in tributaries from January through April (USFWS 1998), with peak spawn timing in February and March (ranging from January to April) (NRC 2004). Adults may repeat spawning in subsequent years after returning to the ocean; half-pounders typically utilize the mainstem Klamath River until leaving the following March (NRC 2004), although they also utilize larger tributaries such as the Trinity River (Dean 1994, 1995). Fry emerge in spring (NRC 2004), with fry observed in outmigrant traps in Bogus Creek and Shasta River from March through mid-June (Dean 1994). Age-0+ and 1+ juveniles have been captured in outmigrant traps in spring and summer in tributaries to the Klamath River above Seiad Creek (CDFG 1990 a, b). These fish are likely rearing in the mainstem or non-natal tributaries before leaving as age-2+ outmigrants. Juvenile outmigration appears to primarily occur between May and September with peaks between April and June, although smolts are captured in the estuary as early as March and as late as October (Wallace 2004). Most adult returns (86 percent) originate from fish that smolt at age 2+, representing 86 percent of adult returns; in comparison with only 10 percent for age-1 juveniles and 4 percent for age 3+juveniles (Hopelain 1998). Similar limiting factors listed for summer steelhead also affect winter steelhead populations, including degraded habitats, decreased habitat access, fish passage, predation, and competition (for more species information see USFWS 1998; NRC 2004; Wallace 2004; and Stillwater Sciences 2009). The proposed Project would not have a significant effect on winter steelhead.

Coastal Cutthroat Trout: Klamath River coastal cutthroat trout belong to the Southern Oregon California Coasts ESU. In a 1999 status review, NOAA Fisheries Service determined that the Southern Oregon California Coasts ESU did not warrant ESA listing (Johnson et al. 1999). Coastal cutthroat trout are distributed primarily within smaller tributaries to the lower 22 miles of the Klamath River mainstem above the estuary (NRC 2004), but also within tributaries to the Trinity River (Moyle et al. 1995). Cutthroat trout have not been extensively studied in the Klamath Basin, but it has been noted that their life history is similar to fall and winter steelhead in the Klamath River (NRC 2004). Both resident and anadromous life histories are observed in the Klamath Basin. Anadromous adults enter the river to spawn in the fall. Generally, spawning of anadromous and resident coastal cutthroat trout may occur from September to April (Moyle 2002). Sea-run adults may either return in summer to feed, or return in September or October to spawn and/or possibly overwinter (NRC 2004). Moyle (2002) noted that upstream migration in northern California spawning streams lends to occur from August to October after the first substantial rain. Juveniles may spend anywhere from one to three years in freshwater to rear. Juveniles outmigrate during April through June, at the same time as Chinook salmon juvenile downstream migration (Moyle 2002; NRC 2004). Juveniles also appear to spend at least some time rearing in the estuary. Wallace (2004) found that estuary residence time ranged from 5 to 89 days, with mean of 27 days, based on a mark-recapture study. The proposed Project would not have a significant effect on coastal cutthroat trout.

Pacific Lamprey: Pacific lamprey are the only anadromous lamprey species in the Klamath River. No current status assessments are available for any Klamath lampreys and little is known of their biology or sensitivity to environmental changes in the Klamath drainage (Hamilton et al. 2011). Pacific lamprey are found in Pacific coast streams from Alaska to Baja California. They occur throughout the mainstem Klamath River downstream from Iron Gate Dam and

its major tributaries: the Trinity, Salmon, Shasta, and Scott River Basins (Stillwater Sciences 2009). Pacific lamprey are capable of migrating long distances, and show similar distributions to anadromous salmon and steelhead (Hamilton et al. 2005). Pacific lamprey are anadromous nest builders that die shortly after spawning. They enter the Klamath River during all months of the year, with peak upstream migration occurring from December through June (Stillwater Sciences 2009). Spawning occurs at the upstream edge of riffles in sandy gravel from mid-March through mid-June (Stillwater Sciences 2009). After lamprey eggs hatch, the larvae drift downstream to backwater areas and burrow into the substrate, feeding on algae and detritus (FERC 2007). Based on observations and available habitat, most larval rearing likely occurs in the Salmon, Scott, and Trinity Rivers, as well as in the mainstem Klamath River. The Klamath River upstream of the Shasta River appears to have less available spawning and rearing habitat, and Pacific lamprey are not regularly observed there. Juveniles remain in freshwater for 5 to 7 years before they migrate to the ocean and transform into adults (Moyle 2002). They spend 1 to 3 years in the marine environment, where they parasitize a wide variety of ocean fishes, including Pacific salmon, flatfish, rockfish, and pollock.

Major factors believed to be affecting their populations include barriers to upstream migration at dams, dewatering of larval habitat through flow regulation, stranding due to rapid down-ramping of flows, reducing larval habitat by increasing water velocity and/or reducing sediment deposition areas, and mortality due to exposure to contaminants in the larval stage (Close et al. 2002, as cited in Hamilton et al. 2011). The proposed Project could adversely affect Pacific lamprey (e.g., disruption of larvae) in the 300 square foot excavation area below the floating platform, but the impact would be very small and temporary, and therefore would be below a level of significance.

Green Sturgeon: Green sturgeon occurs in coastal marine waters from Mexico to the Bering Sea. NOAA Fisheries Service has identified two distinct population segments (DPSs): the Northern Green Sturgeon DPS, which includes populations spawning in coastal watersheds from the Eel River north, which is not listed as threatened or endangered but is on NOAA Fisheries Service's Species of Concern list, and the Southern Green Sturgeon DPS, encompassing coastal or Central Valley populations spawning in watersheds south of the Eel River, which is listed as threatened under the Federal ESA (NOAA Fisheries Service 2006a). Although the Southern DPS is considered a separate population from the Northern DPS based on genetic data and spawning locations, their ranges outside of the spawning season tend to overlap (CDFG 2002b; Israel et al. 2004; Moser and Lindley 2007). The Klamath Basin may support most of the spawning population of green sturgeon (Adams et al. 2002). In summer and fall, Southern DPS green sturgeon may enter estuarine habitat, including the Klamath River, to forage on prey organisms. However, they are not anticipated to migrate beyond the estuarine habitat within the Klamath River. (U.S. Bureau of Reclamation 2010).

Northern DPS green sturgeon in the Klamath River sampled during their spawning migration ranged in age from 16 to 40 years (Van Eenennaam et al. 2006). It is believed that in general green sturgeon have a life span of at least 50 years, and spawn every four years on average after around age-16, for a total of around eight spawning efforts in a lifetime (Klimley et al. 2007). Green sturgeon enter the Klamath River to spawn from March through July. Green sturgeon spawn primarily in the lower 67 miles of the mainstem Klamath River (downstream from Ishi Pishi Falls), in the Trinity River, and occasionally in the lower Salmon River (Klamath River Basin Fisheries Task Force [KRBFTF] 1991; Adams et al. 2002; Benson et al. 2007). Most green sturgeon spawning occurs from the middle of April to the middle of June (NRC 2004). After spawning, around 25 percent of green sturgeon migrate directly back to the ocean (Benson et al. 2007), and the remainder hold in mainstem pools in the Klamath River from RM 13 to 65 through November. During the onset of fall rainstorms and increased river flow, adult sturgeon move downstream and leave the river system (Benson et al. 2007). Juvenile green sturgeon may rear for 1 to 3 years in the Klamath River system before they migrate to the estuary and ocean (NRC 2004; FERC 2007; CALFED 2007), usually during summer and fall (Emmett et al. 1991, as cited in CALFED 2007; CH2M Hill 1985; Hardy and Addley 2001).

The work period for this Project (July 1-September 30) would minimize potential impacts to spawning adults and early life stages. In addition, the small area beneath the work platform (approximately 300 square feet) is small, and unlikely to have a negative effect on the species.

Resident Riverine Fish Species: Rainbow trout (*Oncorhynchus mykiss*) exhibit a wide range of life-history strategies, including anadromous forms (steelhead, described above) and resident forms, described here. The Klamath Basin has two subspecies of rainbow trout. Behnke (1992) identifies the inland form as the Upper Klamath redband trout, *Oncorhynchus mykiss newberrii*, but considers steelhead and resident rainbow trout downstream from Upper Klamath Lake to be primarily coastal rainbow trout, *Oncorhynchus mykiss irideus*. Coastal rainbow trout are present in most permanent coastal streams from Oregon to Mexico. Coastal rainbow trout spend most of their lives in a short section of stream and sometimes make short migrations for spawning. The trout mature in their second or third year, spawn one to three times, and rarely live more than five or six years. Depending on water flows and temperatures, spawning typically occurs between February and June. Fry live in shallow water in near-shore areas and gradually move into deeper water as they grow. Rainbow trout feed on aquatic and terrestrial insects as well as frogs and small fish. Coastal rainbow trout are abundant in California (CDFW. ND).

In addition to the anadromous Pacific lamprey, described above, at least five resident native lamprey species are potentially present in the Klamath Basin (PacifiCorp 2006; Hamilton et al. 2011):

- Pit-Klamath brook lamprey (*Entosphenus lethophagus*)
- Modoc brook lamprey (*Entosphenus folletti*)
- Western brook lamprey (*Lampetra richardsoni*)
- Klamath River lamprey (*Entosphenus similis*)
- Miller Lake lamprey (*Entosphenus minima*)

All lamprey species have a similar early life history where ammocoetes drift downstream to areas of low velocity with silt or sand substrate and proceed to burrow into the stream bottom and live as filter feeders (USFWS 2004). After they transform into adults, the non-parasitic species do not feed, while the parasitic species feed on a variety of fish species (FERC 2007). Klamath River lamprey are found both upstream and downstream from Iron Gate Dam, from Spencer Creek downstream, and are common in the Lower Klamath River and the low-gradient tributaries there (NRC 2004). They are also found in the Trinity River, and in the Link River of the Upper Klamath Basin (Lorion et al. 2000, as cited in Close et al. 2010).

Cyprinids: The blue chub (*Gila coerulea*) and tui chub (*Gila bicolor*) are both found in the Klamath Basin. These species prefer habitat with quiet water, well-developed beds of aquatic plants, and fine sediment or sand bottoms. Although chubs can withstand a variety of conditions including cold, clear lake water, and can also tolerate low dissolved oxygen levels, they are most often found in habitats with summer water temperatures higher than 20°C. These fish are omnivores and can play an important role in nutrient cycling. Chub spawning takes place from April through July, in shallow rocky areas in temperatures of 15 to 18°C (Moyle 2002).

Sculpin: Several sculpin (Cottidae) species are found in coastal streams and rivers from Alaska to southern California. At least 7 species of sculpin are known to occur in the Klamath River or its estuary, including Pacific staghorn, prickly, slender, sharpnose, Coast Range, marbled, and Klamath Lake sculpin. Mainstem river habitat may be important to sculpin populations as it can provide an important migration corridor (White and Harvey 1999). Pacific staghorn sculpin are found predominantly in brackish waters of the estuary. Coastal populations of prickly and Coast Range sculpin are generally assumed to be estuary-dependent for part of their early life history (White and Harvey 1999). The marbled sculpin (*Cottus klamathensis*) is a relatively wide-ranging species found in a variety of habitats in northern California and southern Oregon (Daniels and Moyle 1984). Marbled sculpin are found mainly in low gradient, spring-fed streams and rivers where the water temperature is less than 20°C in the summer and in habitat with fine substrate that can support beds of aquatic plants. They are typically found in 60 to 70 centimeters (cm) of water and are in velocities around 23 centimeters per second (cm/sec) (Moyle 2002).

Smallscale Sucker: The Klamath smallscale sucker (*Catostomus rimicuius*) is common and widely distributed in the Klamath River and its tributaries downstream from the city of Klamath Falls, Oregon, and in the Rogue River (Moyle 2002), They tend to inhabit deep, quiet pools in mainstem rivers and slower-moving reaches in tributaries; however, they can be found in faster-flowing habitats when feeding or breeding (Moyle 2002). McGinnis (1984) reported that this species spawns in small tributaries to the Klamath and Trinity Rivers. Spawning in tributaries to Copco Reservoir has been observed from mid-March to late April (Moyle 2002). Juveniles are most commonly found in the streams that are used for spawning. This species does not achieve a large size and is relatively long-lived. Fish measuring 45 cm have been aged through scale analysis as being 15 years old (Scoppetone 1988, as cited in Moyle (2002). Moyle (2002) speculated that dams and diversions have benefitted this species by increasing the availability of its preferred warmer, low-velocity habitat.

The Project would not have a significant effect on any resident riverine fish species.

Western Pond Turtle (*Emys marmorata*): The western pond turtle is a California species of special concern. It historically occurred in Washington, Oregon, California, and Baja California, and had a relatively continuous distribution within California principally west of the Sierra-Cascade crest. Although primarily an aquatic reptile, the western pond turtle needs terrestrial habitat for basking, overwintering, nesting, and traveling between ephemeral sources of water. Available data do not provide any clear indication of what percentage overwinters in the mud (i.e., underwater) versus on land. Breeding activity peaks in May through July but may occur throughout the year. Western pond turtles are philopatric, which implies that continuity of nesting habitat from year to year may be an important consideration. This turtle has a low fecundity, laying 1–14 eggs per clutch. The species incubation period averages 80 days (mainly starting in June–July), but in some cases may exceed 100 days in California. Incubating eggs are extremely sensitive to increased soil moisture, which can cause high mortality. In colder climates, hatchlings may often overwinter in their nests, emerging in the following spring. In warmer climates, such as southern and central California, hatchlings tend to emerge from the nest in the early fall. Hatchlings spend much of their time in shallow water, within dense vegetation of submergent or short emergent macrophytes. Hatchling and juvenile survivorship is considered to be low (Holland 1994). Western pond turtles in California reach sexual maturity in 7 to 11 years. Twenty-five years is generally considered to be the rough upper limit on age for most adults in natural settings.

The Western pond turtle inhabits a wide range of fresh or brackish water habitats including ponds, lakes, ditches, perennially filled pools of intermittent streams, and backwater and low-flow areas of perennial streams and rivers. A key requirement is proximity to potential nesting sites. Females build nests in dry clayey, loamy, or silty soils, on gentle, south- or west-facing slopes, at distances ranging from 4.9 to 1,320 feet away from water. Nests are generally located in grassy meadows, away from trees and shrubs, with canopy cover commonly less than about 10 percent (Rathburn et al. 1992). Western pond turtles are not especially strong swimmers. Suitable aquatic habitats generally have standing (lentic) and slow-moving (lotic) water which typically occurs in off-channel areas, such as oxbows and sloughs. Overwintering in terrestrial habitats may be an adaptation which helps Western pond turtles escape high winter flows in lotic waters. On the Trinity River, in un-dammed riverine habitat, Western pond turtles appear to prefer deep, lotic water, moderate amounts of riparian vegetation, warm water and/or ample basking sites, woody debris, and rocks which provide underwater cover from predators such as otters and minks (Reese and Welsh 1998). In addition to physical habitat conditions, predation pressure has been shown to influence the distribution of Western pond turtles. A case in point comes from studies in the San Simeon area of coastal California, in which fewer Western pond turtles were observed when raccoon numbers were high. Raccoons are an important predator of Western pond turtles and are known to prey on adults as well as juveniles.

Whereas adults and older juveniles are considered aquatic habitat generalists, hatchlings and young juveniles require specialized habitat for survival through their first few years. For example, in addition to requiring low-flow and backwater areas of rivers, hatchlings need to spend much of their time feeding in shallow water amongst dense

submergent and short emergent vegetation, presumably to avoid predators. Habitats preferred by juveniles are generally scarce and may be especially sensitive to anthropogenic and natural disturbances.

This turtle is known to occur within eight miles of the Project area near the mouth of the Shasta River (CNDDB). It is very likely to also occur on the Klamath River. At the work area, backwater habitats are mostly lacking, but it is possible that turtles could use the area for foraging, basking, or breeding. The Project would not lead to any appreciable aboveground disturbance, and turtles would likely avoid the floating platform when work is being done. Therefore while it is possible that the Project could result in an adverse impact (e.g., disturbance or disruption of basking turtles), the impact would be below a level of significance.

Foothill Yellow-Legged Frog (*Rana boylii*): Foothill yellow-legged frog is a California Species of Special Concern. The species occurs in a variety of aquatic habitats, especially partially shaded, shallow streams and riffles with a rocky/cobbly substrate. Historically, this species was known to occur in most Pacific drainages from the Santiam River system in Oregon to the San Gabriel River system in California. Its known elevational range extends from near sea level to 2040 m. This frog has disappeared from much of its range in California (possibly up to 45 percent). Foothill yellow-legged frog is also gone from an estimated 66 percent of its range in the foothills of the Sierra Nevada Mountains, especially south of highway 80 where it is nearly extinct. Foothill yellow-legged frogs are known from the vicinity of the Project area (the nearest CNDDB record is approximately six miles away at Beaver Creek).

The species requires shallow, flowing water, apparently preferentially in small to moderate-sized streams situations with at least some cobble-sized substrate. This type of habitat is probably best suited to oviposition and likely provides significant refuge habitat for larvae and postmetamorphs. Foothill yellow-legged frogs have been found in stream situations lacking a cobble or larger-sized substrate, but it is not clear whether such habitats are regularly utilized. Foothill yellow-legged frogs are infrequent or absent in habitats where introduced aquatic predators (i.e., various fishes and bullfrogs (*Rana catesbeiana*)) are present. Mating and egg-laying occurs in streams and rivers (not ponds or lakes) from April until early July, after streams have slowed from winter runoff. In California, researchers have found egg masses between April 22 and July 6, with an average of May 3. Clusters of eggs are laid on the downstream side of rocks in shallow slow-moving water where they are attached to submerged rocks and pebbles and occasionally vegetation. Eggs can number from 300- 2,000, averaging 900. Egg masses are often covered with a layer of silt, which probably helps to hide them from predators. Eggs hatch within 5 - 37 days, depending on water temperature (Hayes and Jennings 1988).

Tadpoles remain around the egg mass for a about a week, then they move away to feed, using rocks and gravel for cover. Tadpoles transform in 3 to 4 months, typically from July to October. Newly metamorphosed juveniles typically migrate upstream from the hatching site. Two years are thought to be required to reach adult size, but no data are available on longevity. Until data indicate otherwise, habitat critical to the survival of *R. boylii* should be identified in part by the presence of oviposition habitat having riffle areas with a substrate of cobble-sized or larger rocks.

Water released from reservoirs, that washes away eggs and tadpoles and forces adult frogs away from the streams leaving them more vulnerable to predators, is a serious problem for frogs in the Sierra Nevada foothills. Air-borne pesticides from agricultural fields of the Central Valley are also likely to be a primary threat. Recreational activities along streams that alter streambeds are also having a negative impact on frog populations in the Sierra foothills. Introduced fish also stress frog populations by consuming eggs and tadpoles, and introduced bullfrogs compete for food and eat the frogs. Habitat loss, disease, introduced crayfish, stream alteration from dams, mining, logging, and grazing, are also threats to this frog.

Foothill yellow-legged frog could occur in pools along the edge of the Klamath River or in the adjacent floodplain. Project activities could disturb adult frogs or tadpoles, which could be displaced or trampled. However, the lack of

permanent disturbance to the site resulting from the Project, along with the site's existing pattern of recreational use, would limit any impact to a level below significance.

Freshwater Mollusks: Four species of native freshwater mussels have been observed within the Klamath Basin: Oregon floater (*Anodonta oregonensis*); California floater (*A. californiensis*); western ridged mussel (*Gonidia angulata*); and western pearlshell mussel (*Margaritifera falcata*). Several species of fingernail clams and peaclams are known to occur in the Klamath River. One of the clam species, the montane peaclam (*Pisidium ultramontanum*), has special status as a Federal species of concern and a United States Forest Service (USFS) sensitive species. The montane peaclam is generally found on sand-gravel substrates in spring-influenced streams and lakes, and occasionally in large spring pools. The original range included the Klamath and Pit Rivers in Oregon and California, as well as some of the larger lakes in the Klamath Basin. On USFS lands they are currently present or suspected in streams and lakes of Lassen and Shasta-Trinity National Forests. Fingernail clams and peaclams are relatively short-lived (1 to 3 years) compared to freshwater mussels (10 to 15 years or 100 plus years for some species). These small clams live on the surface or buried in the substrate in lakes, ponds or streams. They bear small numbers of live young several times throughout the spring and summer (Thorp and Covich 2001). The Project could temporarily displace freshwater mollusks during the work period, but the overall impact would be minor, and below a level of significance.

Impact: Impacts to aquatic animals are below a level of significance.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on wetlands as defined by the Department of Fish and Wildlife (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The Project proposes no modification to riparian habitat or other sensitive natural community including wetlands. The excavation below the floating work platform will be filled by hand upon completion of work.

Impact: No impacts to sensitive habitats or wetlands are anticipated.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Wildlife Movement: The Project will result in short term disturbances in a very small area, and will not affect regional or local wildlife movement patterns or corridors.

Impact: No impacts to wildlife movement are anticipated.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Conservation Planning and Zoning: This Project does not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plans for the Project area.

Impact: No conflicts with local policies or ordinances, or an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Will the Project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion: CDFW contacted KNF Archaeologists to obtain information about cultural resources in the vicinity of the Project area and to assess the Project's potential to result in significant impact to cultural resources. Cultural resource avoidance areas have been documented near the Project area north and west of Highway 96 (Appendix 1). The Project area and immediate vicinity were examined in person by a KNF Archaeologist on March 7, 2014. The field examination documented a few features such as a derrick pile (waste rock) and an extraction/prospect pit that appears to be of modern origin. The Project area is primarily within the thalweg and active channel of the Klamath River. River sediments are continuously redistributed and transported via river flow. River banks in the area have also been subject to regular flooding, along with erosion and deposition. As a result it is unlikely that cultural, archeological or paleontological resources remain other than those that have been eroded from stream banks and transported downstream. The dynamic nature of the Project area along with the low potential for unrecorded resources to be disturbed by Project activities result in a very low potential for significant impacts to cultural resources.

The KNF Archaeologist also concluded that no adverse effects to cultural resources would occur within the Project area and the immediate vicinity (Appendix 1).

Impact: No impacts to Cultural Resources are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion: All Project work will be completed within the Klamath River channel with paydirt washing in the floodplain. As proposed, the Project will not result in hazardous conditions or exacerbate current conditions related to earthquake or ground rupture. In addition, the Project would not create or exacerbate soil erosion. Work will be minor and short term in nature, and excavation pits will be filled.

Impact: No impacts to Geology and Soils are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Greenhouse Gas Emissions. Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion: The proposed Project would generate minor greenhouse gas (GHG) emissions through from the exhaust of vehicles used to transport equipment and materials, and activities related to on-site camping. This level of emissions would not prevent attainment of any GHG goal or standard.

Impact: Impacts related to Greenhouse Gas Emissions are below a level of significance.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials. Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, will it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, Would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, Would the Project result in a safety hazard for people residing or working in the	☐	☐	☐	☒

Project area?				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion: The Project does not propose the use of hazardous materials, including mercury, nitric acid or other chemicals commonly used for gold extraction.

Impact: No impacts associated with Hazards and Hazardous Materials are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hydrology and Water Quality. Would the Project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level that will not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial on- or off-site erosion or siltation?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion: The NCRWQCB has proposed Total Maximum Daily Load (TMDL) limits for the Klamath River. The Iron Gate to Scott River Hydrologic Area (HA) segment encompasses the Project area. TMDL's have been proposed for the following pollutants/stressors in the Iron Gate to Scott River HA:

- Nutrients, Organic Enrichment/Low Dissolved Oxygen, and Temperature (water)
- Cyanobacteria hepatotoxic microcystins

The TMDL designation process leads to a "pollution budget" designed to restore the health of a polluted or impaired body of water. The TMDL process provides a quantitative assessment of water quality problems, contributing sources of pollution, and the pollutant load reductions or control actions needed to restore and protect the beneficial uses of an individual waterbody impaired from loading of a particular pollutant. More specifically, a TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for non-point sources, and natural background such that the capacity of the water body to assimilate pollutant loading (the loading capacity) is not exceeded.

For this analysis, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. This calculation also includes a margin of safety and consideration of seasonal variations. In addition, the TMDL contains the reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed. Discharges of additional pollutants/stressors to waterbodies listed as impaired would be considered a potentially significant impact due to the lack of assimilative capacity for those discharges.

In general, water quality constituents of potential concern associated with the proposed Project are expected to be associated with waste discharges that occur in relation to instream resuspension of sediments and related sediment-derived contaminants. At the projected rate of excavation of stream bottom material (up to 1 cubic yard/day), a minor level of short term turbidity is expected in the immediate vicinity of the operation. The majority of re-suspended sediments are expected to consist of minerals – sands and silts, with a minor organic component due to the velocity of the Klamath River at the Project location. The proposed Project is not expected to result in organic/nutrient enrichment, increased temperature, decreased dissolved oxygen, or improved conditions for microcystins.

Mercury resuspension and discharge from mining, especially suction dredging is a potential concern. It would be reasonable to assume that some mercury could be present in the riverbed sediments at the Project location as a result of either historic gold extraction practices or via natural sources. However, a literature review did not reveal evidence of elevated sediment mercury in Klamath River in the project area reach. The NCRWQCB has established a TMDL for mercury in Lake Shastina, a reservoir on the Shasta River approximately 30 air miles southeast of the Project. No mercury TMDL's have been established on the Klamath River (NCRWQCB 2009). Even if ambient levels of mercury in stream sediments were present at levels that could pose a concern to water quality, hand excavation of thalweg sediments would have a very low potential to result in "flouring" (the breaking up of larger liquid droplets into many

very small droplets) of mercury. The Klamath River is believed to have low concentrations of mercury in the vicinity of the Project according to the best currently available information. In addition hand excavation with pick and shovel followed by non-motorized sluicing limit the potential for water quality impacts resulting from mobilization of mercury. Therefore, impacts associated with mobilization of mercury are below a level of significance.

Other water quality impacts resulting from the proposed Project are expected to be similar to or lower than those associated with suction dredge mining. The analysis in Section 4.2 of the Suction Dredge Permitting Program Subsequent Environmental Impact Report (State Clearinghouse Number 2009112005) is incorporated by reference and adapted for this analysis. While some of the analysis is complex (in particular, impacts associated with mobilization of mercury) the document made the following conclusions regarding the statewide Suction Dredge Permitting Program applicable to the proposed Project:

- Impacts of contaminant discharges from dredge site development and use were found to be less than significant (Impact WQ-1).
- Impacts of turbidity and total suspended solids from suction dredging were found to be less than significant (Impact WQ-3).
- Impacts of Trace Organic Compounds Discharged from Suction Dredging were found to be less than significant (Impact WQ-6).

Impact: Impacts related to Hydrology and Water Quality are below a level of significance.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and Planning. Would the Project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion: The Project area is located on KNF land and the proposed Project is fully consistent with historic and current uses of the area. There is no possibility for the Project to conflict with applicable land use plans.

Impact: No conflicts with Land Use and Planning are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Mineral Resources. Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☒	☐

Discussion: The Project is a small scale gold mining operation in a small, specific location. Project work would not entail an appreciable loss of mineral resources or the execution of subsurface work. As a result this Project will not result in the loss of mineral resources or the reduce availability of a locally important mineral resource recovery site.

Impact: Impacts to Mineral Resources are below a level of significance.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the Project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, will the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion: The only power equipment to be used within the Project area will be a motorized winch. Use of this equipment during Project implementation is considered to be within the range of the ambient noise levels that are present in the area. Equipment will only be operated intermittently. Once Project work has been completed within a portion of the Project area, noise levels will return to ambient levels.

Impact: No impacts to Noise are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the Project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion: The Project area is within a rural area of Siskiyou County used for recreation. Project work will occur within or immediately adjacent to the Klamath River and will not impact development or population growth with the vicinity of the Project area.

Impact: No impacts to Population and Housing are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant significance with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the Project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒

Other public facilities?	☐	☐	☐	☒

Discussion: The Project is located in a rural area of Siskiyou County where there are few public services. The Project proposes no new development and will not affect Public Services in any way.

Impact: No impacts to Public Services are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the Project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion: The Project area is located on KNF land currently used for recreation. The Project area will not be permanently modified as a result of Project implementation. The Project would not result in deterioration or expansion of the site.

Impact: No impacts to Recreation are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the Project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county	☐	☐	☐	☒

congestion management agency for designated roads or highways?				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion: All Project work will occur within the Klamath River and adjacent floodplain. Project work will not increase traffic or delay traffic flows within the Project area in any way.

Impact: No impacts to Transportation or Traffic are anticipated.

ENVIRONMENTAL ISSUES	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
XVII. Utilities and Service Systems. Would the Project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion: The Project will not require or result in the construction of new water or wastewater treatment facilities, require or result in the construction of new storm water drainage facilities, or consume water. Any water used for sluicing or panning gold will be returned to the Klamath River or to the floodplain.

Impact: No impacts to Public Utility and Service Systems are anticipated.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Mandatory Findings of Significance.				
a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)	☐	☐	☒	☐
c) Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion: Several special status species and cultural resources occur in the vicinity of the Project area and in the Klamath River. The current and historic condition of the Project area (mining claim and camping area) will not change as a result of the Project. Project timing is compatible with the life histories of anadromous fish and other aquatic species in the Klamath River and work will therefore avoid nearly all impacts to spawning and rearing anadromous fish. The minor level of underwater and terrestrial disturbance associated with the proposed work will not result in significant impacts to environmental quality; fish, wildlife, or plant species and communities; listed species; or historic/prehistoric resources.

The Suction Dredge EIR discusses several significant and unavoidable cumulative impacts associated with the implementation of a statewide suction dredge program. The proposed Project does not make use of motorized devices for suction or processing of sediments, and the amount of material that will be processed is greatly reduced over any comparable suction dredge operation. Nevertheless, this IS/ND has considered the potential for the Project to result in any significant impacts as disclosed in the Suction Dredge EIR. In every case, the Project's potential impact is reduced as compared with suction dredging. Furthermore, the work area is small (approximately 300 square feet), as is the paydirt processing area on the floodplain. Vegetation will not be disturbed, and the environmental condition of the site will be the same at the close of the Project. The site is already developed as a dispersed camping area and is an active mining claim used by members of the New 49'ers. The best information available to CDFW indicates that there is no known issue with elevated mercury sediment levels in the vicinity of the Project. This Project will not result in any cumulatively considerable effect to any wildlife species or habitat, turbidity, or mercury resuspension.

The Project has been designed to have minimal effects to the environment. In light of all known federal, state or private projects within the vicinity of this Project and upstream, the Project will not result in cumulatively considerable significant impacts, or any adverse effects on human beings.

Impact: Impacts associated with Mandatory Findings are below a level of significance.

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APPENDIX 1

Forest Service
Klamath National Forest
Happy Camp & Oak Knoll Ranger Districts
P.O. Box 377
Happy Camp, CA 96039-0377
(530) 493-2243
(530) 493-1777 TDD

To: Brad Henderson, Senior Environmental Scientist, California Department of Fish and Wildlife

Project Name: Osborn Thalweg Gold Prospecting/Mining Project (Lake or Streambed Alteration Agreement Number 1600-2012-0238-R1)
KNF Archaeological Survey Report - R2014-05-05-2148-0
Previous Archaeological Survey Report - R2001- 05-05-1521-0

Description of Project: This mining operation involves a work platform in the Klamath River where mining activities involve using a pick, shovel, and pry bar to excavate material located underwater. Material is subsequently hoisted on to the work platform for processing. The paydirt is then processed out of the river channel and on the mining claim using a sluice box and settling pits for trapping sediment and filtering turbid water.

On September 19th, 2013, Tom Mutz, District Ranger determined that Phillip Osborn's mining operation is in full compliance with all Federal Mining Regulations and does not require a Plan of Operations from the Forest Service.

The proposed project area has not been previously surveyed although survey related to the Jones Fire in May, 2001 was completed on the north side of Highway 96 directly adjacent to the Area of Potential Effects (APE). Two archaeological sites are located in the vicinity but will not be impacted as long as the mining operation does not deviate from the project area. A single resource identified as a derrick pile related to an indeterminate historic or modern period is located on the K2-A Gottville Claim and should be avoided during all activities since it might be associated with the aforementioned archaeological sites in the vicinity. According to the project description, all activities will occur outside of known site boundaries and will not have an adverse effect on cultural resources.

Based on your information request regarding potential effects on cultural resources within the project area I determined that there will be a **no adverse effect** determination to known cultural resources within the project area and the immediate vicinity.

Prepared by: _____ Date: 05/06/2014

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