Aquatic Resources Delineation Report

Mammoth Springs Resort - Joaquin Parcel

August 20, 2022

Prepared For:

Mammoth Springs Resort
c/o Mark Rafeh
1241 Cadiz Drive
Simi Valley, California 93065

Prepared By:

Resource Concepts, Inc.
340 N. Minnesota Street
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August 20, 2022

(RCI # 22-606.1)

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c/o Mark Rafeh
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EXECUTIVE SUMMARY

The delineation for this property was prepared at the request of Mammoth Springs Resort on behalf of Mr. Mark Rafeh. The Survey Area includes two parcels (Mono County APNs: 033-170-003; 033-170-004; 033-170-005) totaling approximately three acres. The Survey Area is located west of U.S. Highway 395 in the town of Mammoth Lakes, Mono County, California. The delineation was conducted in accordance with the 1987 *Corps of Engineers Wetland Delineation Manual* (TR-Y-87-1) as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain Region* (Version 2.0, September 2008).

The delineation identified four aquatic resources. The on-site waters consist of one intermittent stream with two small side channels, and a seasonally wetted palustrine emergent wetland. During high flow events, water from the intermittent stream flows through Mammoth Lakes to join Mammoth Creek, ultimately flowing into Owens River.

A summary of the aquatic resources is included below:

Aquatic Resource Name	Aquatic Resource Classification		Size (acres)	Size (linear feet)
	Cowardin	Location (Lat./Long. NAD 83)		
AR-1: Intermittent Stream	R4	37.640731°N/ -118.977556°W	0.03	540
AR-1a: Intermittent Stream	R4	37.641249°N/ -118.977103°W	<0.01	110
AR-1b: Intermittent Stream	R4	37.641386°N/-118.977210°W	<0.01	110
AR-2: Wetland (PEMC)	PEMC	37.641622°N/-118.977009°W	0.01	--
Total	--	--	**0.03**	**760**

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File Doc: 2022-08-25 Final Rpt AqResDelin-Joaquin Parcel 22-606.1 Mamm Spgs Res. els jrm-ca-jm L8-36.docx

ACRONYMS AND ABBREVIATIONS

Wetland Indicator Status Acronyms:

OBL (Obligate Wetland). Occur almost always in wetlands.

FACW (Facultative Wetland). Usually occur in wetlands.

FAC (Facultative). Likely to occur in wetlands or uplands.

FACU (Facultative Upland). Usually occur in uplands.

UPL (Obligate Upland). Occur almost always in uplands.

N/I (No Indicator). Indicator status unavailable.

Water Types Acronyms:

TNW. Traditional Navigable Water, including territorial seas

TNWW. Wetlands adjacent to TNWs

RPW. Relatively Permanent Waters (RPWs) that flow year round

RPWWD. Wetlands directly abutting RPWs

RPWWN. Wetlands adjacent to but not directly abutting RPWs

NRPW. Non-RPWs are tributaries that do not have continuous flow at least seasonally

NRPWW. Wetlands adjacent to non-RPWs

ISOLATE. Isolated (interstate or intrastate) waters

UPLAND. Uplands

TNWRPW. Tributary consisting of both RPWs and non-RPWs

1.0 INTRODUCTION

1.1 Project Description and Purpose

In March 2022, Resource Concepts, Inc. (RCI) was contracted by Mammoth Springs Resort to complete a delineation of aquatic resources within approximately three acres located to the west of Joaquin Drive in the town of Mammoth Lakes, California (APNs: 033-170-003; 033-370-020).

The purpose of this report is to identify, describe, and delineate the boundaries of on-site aquatic resources. This report facilitates efforts to:

- Avoid or minimize impacts to aquatic resources during the project design process,
- Document aquatic resource boundaries for review by the US Army Corps of Engineers (USACE), which will be required for state and federal permitting purposes as needed, and
- Provide early identification of known US Fish and Wildlife Service (USFWS) federally listed species with potential to occur within the Survey Area.

The delineation was conducted in accordance with the *1987 Corps of Engineers Wetland Delineation Manual, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain Region* (Version 2.0, September 2008).

1.2 Contact Information

Preparers of this Delineation Report

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2.0 PROJECT LOCATION

The Survey Area is located in Section 34 of Township 3 South, Range 27 East within the Old Mammoth U.S. Geological Survey 7.5-minute topographic quad (lat. 37.641272° North, long. -118.977136° West, NAD83 UTM Zone 11). The property is currently being evaluated to determine the presence of regulated aquatic resources and development potential of the site.

To drive to the site from the USACE Reno Field Office, take I-580 South to US-395 South. Continue south on US-395 for approximately 35 miles, then stay straight to continue south through Minden/Gardnerville. Continue driving south on US-395 for approximately 129 miles, then take the exit for CA-203 toward Mammoth Lakes. Continue onto CA-203 West for 3.5 miles, then turn left toward Frontage Road and make an immediate right on Frontage Road. In approximately 200 feet, turn left onto Joaquin Road and drive 0.5 miles. The Survey Area is located on the west side of Joaquin Road at the cross section of Meridian Boulevard and Joaquin Road.

For a site visit, please contact JoAnne Michael at RCI.

3.0 METHODS

3.1 Methods Used to Delineate and Survey Aquatic Resources

The site was delineated by a wetland scientist on May 18, 2022. This survey was performed by RCI in accordance with the criteria contained in the Technical Report Y-87-1, *Corps of Engineers Wetland Delineation Manua*l, January 1987 (1987 Manual) and as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain Region* (Version 2.0, September 2008).

Prior to the field review, aerial photographs, US Geological Survey (USGS) topographic maps, and National Wetland Inventory (NWI) maps were reviewed. Additionally, previous biological reports and hydrologic data were reviewed prior to the site visit. Data points were taken at locations determined by review of the USGS topographic maps, NWI maps, aerial photography (Attachment B), and field observations of hydrophytic vegetation as being potential wetland or other jurisdictional waters. At each sample point, data on vegetation, soils, and hydrology were collected. Wetland data forms are provided in Attachment E and OHWM data forms are provided in Attachment F.

4.0 EXISTING CONDITIONS

4.1 Landscape Setting

The 3-acre Survey Area is centrally located in the Town of Mammoth Lakes, California. The Town of Mammoth Lakes is located on the eastern slope of the Sierra Nevada Mountain Range. To the west and south of the Survey Area are apartment complexes and golf course fairways, to the north and east are primarily single-family homes and small businesses. There is a paved back path along the eastern edge

adjacent to Joaquin Road. The Survey Area consists of forested upland adjacent to sagebrush shrub community. There is an intermittent stream that has been modified to accommodate seasonal flooding from snowmelt and stormwater runoff. There is a borrow pit on the west side, and material was used to construct a parking lot that serves the adjacent off-site development. The borrow pit now serves to collect stormwater runoff from the off-site development, where is able to infiltrate and there is no outflow (see map in Attachment A).

Topography

The Survey Area is located on historic glacial outwash, with rock material consisting primarily of granite. Site elevation ranges from approximately 7,920 feet to 7,960 feet, sloping from the southwest corner, downward toward the northeast corner of the Survey Area with a gradient ranging from 3 to 15% and an average gradient of 7%.

Site Hydrology

Rainfall

On average, the site receives 10 to 40 inches of annual precipitation (NRCS Soil Survey, 2022). The USACE Antecedent Precipitation Database was run for the May 18, 2022 survey date. Based on review of the charted data in the graph below, precipitation was within the normal 30-year range during the 30 days prior to the survey. The Palmer Drought Severity Index (PDSI) shows the site to be in extreme drought, with drier than normal conditions within the 30 days prior to the survey.

Surface Water

The primary source of on-site surface water is from the intermittent stream (AR-1), generally flowing from southwest to northeast through the Survey Area. Water in the intermittent stream is charged by seasonal snowmelt, flowing from the mountains to the southwest and from surface runoff from the adjacent irrigated fairways. Water within the stream is conveyed on-site via a culvert running under Meridian Boulevard and flows off-site into a graded culvert running under Joaquin Road. After leaving the Survey Area, water continues to flow northeast through the town of Mammoth Lakes, eventually feeding into Mammoth Creek, and ultimately the Owens River.

The on-site hydrology has been significantly altered over the years due to development of the surrounding areas, particularly with the construction of Meridian Boulevard and following the development of the parcel to the west.

Based on review of the California Old Mammoth USGS 7.5-minute quadrangle topographical digital map (Figure 1 in Attachment B), there are no mapped “blue lines” within the Survey Area.

As shown in Figure 4 (Attachment B), there are no regions within the Survey Area that are mapped within the Federal Emergency Management Association 100-year floodplain.

Geology

The town of Mammoth Lakes is a volcanically active area. Mammoth Mountain is comprised of several volcanic domes that were formed from a series of eruptions between 100,000 to 51,000 years ago (USGS, Mammoth Mountain). The Survey Area, situated in the town of Mammoth Lakes southwest of Mammoth

Mountain, is located on glacial outwash and moraines deposited during the Pleistocene and Holocene eras.

Soils

The following section describes the on-site soils according to the National Resource Conservation Service (NRCS) soil survey maps (Figure 2 in Attachment B). The soils in the Survey Area are mapped as the following: (163) - Chesaw family, 0 to 5 percent slopes.

Additional soil characteristics are provided in the following paragraphs and a soils map is provided in Attachment B.

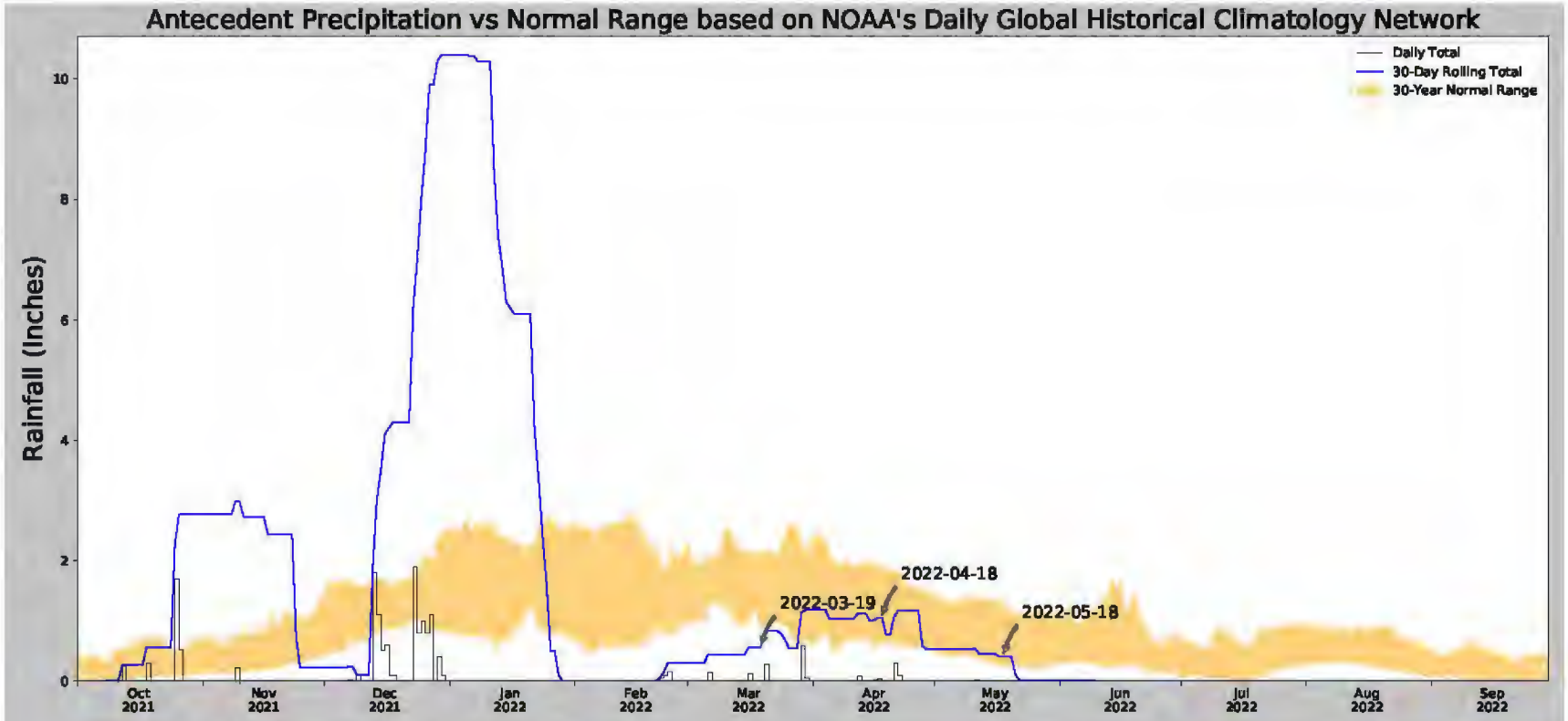
Chesaw family, 0 to 5 percent slopes

The on-site soil type is classified as Chesaw family, 0 to 5 percent slopes. These soils are found at elevations ranging from 7,000 to 8,600 feet. Mean annual precipitation typically ranges between 10 to 40 inches. These soils are formed in mountain outwash plains and are derived from glaciofluvial deposits originating from granite parent material. A typical profile of Chesaw family soils consists of:

H1 – 0 to 5 inches: gravelly loamy sand
H2 – 5 to 27 inches: very gravelly loamy sand
H3 – 27 to 60 inches: gravelly loamy sand

These soils are classified as **non-hydric** with a negligible runoff class; however, minor unnamed components of this soil are classified as hydric. The frequency of flooding or ponding is none. Depth to the water table is typically greater than 80 inches below the soil surface. Available water capacity in the soil profile is very low (about 2.8 inches) (NRCS Web Soil Survey, accessed June 29, 2022).

Graph 1. Antecedent Precipitation vs Normal Range Precipitation Graph



Coordinates	38.64277631667, -118.977148593333
Observation Date	2022-05-18
Elevation (ft)	7943.71
Drought Index (PDSI)	Extreme drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-05-18	0.220866	1.326772	0.409449	Normal	2	3	6
2022-04-18	0.610236	1.801181	1.051181	Normal	2	2	4
2022-03-19	0.901969	2.122047	0.559055	Dry	1	1	1
Result							Normal Conditions - 11

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BODIE CALIFORNIA ST HISTORIC P	38.2119, -119.0142	8370.079	39.478	426.369	34.597	10176	72
TUOLUMNE MEADOWS RS	37.8769, -119.3436	8693.898	29.275	323.819	22.654	538	15
Virginia Lakes Ridge	38.07, -119.23	9444.882	15.285	1074.803	23.307	639	3

Community Types and Existing Vegetation

There are three distinct vegetative communities within the Survey Area: upland forested, upland shrub, and wetland/riparian.

The forested upland area is dominated by Jeffrey Pine (*Pinus jeffreyi*, UPL) and Antelope Bitterbrush (*Purshia tridentata*, UPL). The understory vegetation is sparse, but with patches of forbs and grass consisting of Maiden Blue-Eyed Mary (*Collinsia parviflora*, UPL) and Kentucky Blue Grass (*Poa pratensis*, FAC).

The upland shrub community is dominated by Big Sagebrush (*Artemisia tridentata*, UPL) and Coaltown Sagebrush (*Artemisia cana*, FACU), which is sometimes referred to as Silver Sagebrush. Some of the common forbs include Graceful Cinquefoil (*Potentilla gracilis*, FAC), Lamb-Tongue Ragwort (*Senecio integerrimus*, FACU), and Maiden Blue-Eyed Mary (*Collinsia parviflora*, UPL).

There is a small emergent wetland is dominated by Sedge (*Carex* sp., OBL-FAC), Baltic Rush (*Juncus balticus*, FACW), Aspen Onion (*Allium bisceptrum*, FAC), and Curly Dock (*Rumex crispus*, FAC) abutting the on-site intermittent channel.

A complete list of observed vegetation on-site is included in Attachment D.

5.0 AQUATIC RESOURCES

Two aquatic resources were identified within the Survey Area, an intermittent stream (AR-1) and a palustrine emergent wetland (AR-2). Additionally, two small side channels originating from AR-1 on-site were identified, AR-1a and AR-1b. The two side channels diverge briefly from AR-1 before rejoining AR-1 on-site. All aquatic resources are depicted on the Aquatic Resources Delineation Map provided in Attachment A. A summary of the delineated resources is shown in Table 1 and described below.

Aquatic Resources (AR-1): Intermittent stream

AR-1 is an intermittent stream that originates off-site and southwest of the Survey Area. Water flows onto the site via a culvert under Joaquin Road and continues northeast across the Survey Area. Instream hydrology is charged from seasonal snowmelt and stormwater runoff from adjacent development. The stream appears to have been relocated and widened in the upper reach coordinated with development of the surrounding properties between 2002 and 2005. There are two small lateral channels (AR-1a and AR-1b) have formed within the adjacent meadow, likely during high flow events that exceeded the capacity of the main channel. The two channels briefly diverge from AR-1 and then rejoin AR-1 further downstream (reference Delineation map in Attachment A). Water flows off-site via a culvert under Joaquin Road where it then makes its way north and east to an unnamed drainage conveying water approximately 4.5 miles through the town of Mammoth Lakes and into Mammoth Creek. From the confluence, Mammoth Creek flows approximately 9.5 miles east before joining the Owens River.

The on-site length of AR-1 is 450 linear feet (0.03 acres), with an average width of 2.5 feet and is described within data form OHWM-1 (Attachment F). The OHWM was identified in the field by a change in substrate and lack of terrestrial vegetation within the channel. AR-1 and OHWM-1 are identified in photos 6, 8, 13, and 14 shown in Attachment C.

Aquatic Resource (AR-1a & AR-1b): Side channels of AR-1

AR-1a and AR-1b are lateral side channels running parallel to the east and west sides of AR-1 respectively. AR-1a diverges just upstream of AR-1b in the high gradient (5-10% grade) central zone of the Survey Area. Photos 9 through 12 in Attachment C show this central area and both side channels.

The on-site length of AR-1a is 110 feet and has an average width of 2.5 feet and a depth of 6 inches at the OHWM; described in data form OHWM-2 (Attachment F). The OHWM of AR-1a was identified in the field by scoured and undercut banks, sediment deposition, and a lack of vegetation within the channel. AR-1a and OHWM-2 are identified in photo 10 shown in Attachment C.

The on-site length of AR-1b is also 110 feet and has an average width of 1.5 feet and a depth of 4 inches; described in data form OHWM-3 (Attachment F). The OHWM of AR-1b was identified in the field by a lack of terrestrial vegetation within the channel and by scour lines along the bank. AR-1b and OHWM-3 are identified in photo 11 shown in Attachment C.

Aquatic Resource (AR-2): Palustrine Emergent Wetland

AR-2 is identified by the Cowardin Classification system as palustrine emergent seasonally flooded (PEMC) wetland. The wetland is seasonally flooded from spring snowmelt; at lower flows, AR-2 is saturated but outside of the river channel. Vegetation includes a combination of sedge (*Carex* sp., OBL-FAC) and Baltic rush (*Juncus balticus*, FACW). The wetland vegetation criterion is met by a dominance of greater than 50% hydrophytic vegetation.

Wetland hydrology is charged by overflow from AR-1 and runoff from Joaquin Road. No primary indictors of wetland hydrology were observed at the time of the survey. Secondary indicators of wetland hydrology include geomorphic position and a positive FAC-Neutral Test.

Wetland soils were documented as:

0- 6 inches	10YR 3/2 100% sand

Bedrock was reached at 6 inches. Little soil development was observed within the active floodplain and drainage area (AR-2), only a 6-inch layer of mostly sand perched on top of bedrock.

The wetland boundary was defined in the field by a distinct change in the vegetative community and topography. The on-site area of AR-2 is 0.01 acres. AR-2 is described in data point DP4 in Attachment F and shown in photo 11 in Attachment C.

Table 1. Summary of Aquatic Resources within the Survey Area

Aquatic Resource Name	Aquatic Resource Classification (Cowardin)	Size (acres)	Size (Linear feet)	OHWM Data Form	Photo #	OHWM Indicators	Comments
AR-1:	R4	0.03	450	OHWM-1	6, 8, 13, and 14	• Change in substrate • Lack of vegetation	AR-1 is an intermittent stream (NRPWW) with an abutting wetland that seasonally flows during spring snow melt. Water flows from the southwest to northeast across property, then through storm drains into an unnamed stream on the north side of Mammoth Lakes.
AR-1a:	R4	<0.01	110	OHWM-2	10	• Lack of vegetation • Undercut bank • Sediment deposition • Scour line on bank	AR-1a is a short, lateral channel that diverges from AR-1 for approximately 110 lf before rejoining the AR-1 further down slope.
AR-1b:	R4	<0.01	110	OHWM-3	11	• Lack of vegetation • Scour line on bank	AR-1b is a short lateral channel that diverges from AR-1 the west and rejoins AR-1 approximately 110 feet downstream.
AR-2: Wetland (PEMC)	PEMC	0.01	--	--	13	n/a	AR-2 is a seasonally flooded depressional area within the floodplain abutting the West Walker River (AR-1).
Total	**--**	**0.06**	**670**			**--**	**--**

6.0 FEDERALLY PROTECTED SPECIES

The USFWS Information for Planning and Consultation website (accessed on June 29, 2022) identified eleven federally protected species and proposed species with potential to occur near the Survey Area:

- Fisher (*Pekania pennanti*), Endangered
- North American Wolverine (*Gulo gulo luscus*), Proposed Threatened
- Sierra Nevada Red Fox (*Vulpes vulpes necator*), Endangered
- Southwestern Willow Flycatcher (*Empidonax traillii extimus*), Endangered
- Yellow-billed Cuckoo (*Coccyzus americanus*), Threatened
- Sierra Nevada Yellow-legged Frog (*Rana sierrae*), Endangered
- Yosemite Toad (*Anaxyrus canorus*), Threatened
- Owens Pupfish (*Cyprinodon radiosus*), Endangered
- Owens Tui Chub (*Cila bicolor* ssp. *snyderi*), Endangered
- Monarch Butterfly (*Danaus plexippus),* Candidate
- Whitebark Pine (*Pinus albicaulis*), Proposed Threatened

There is no designated critical habitat located within the Survey Area.

Table 2. Evaluation of Potential Occurrence of Federally Protected Species Federally

Federally Listed					
Species	**Status**	**Preferred Habitat**	**Potential to Occur**	**No**	**Yes**
Fisher (***Pekania pennanti***)	E	Fishers prefer habitat with good cover and structural complexity, and mature forest stands. They typically occupy areas with higher elevations, near snow and a water source.	The on-site forest does not have structural complexity and good cover for fisher habitat. There is no suitable habitat for the fisher within the Survey Area and no potential to occur on-site.	✓	
North American Wolverine (***Gulo gulo luscus***)	PT	The North American Wolverine occupies a variety of habitat types, e.g., from Arctic tundra to conifer forests. They prefer higher elevation and uninhabited areas.	The Survey Area is located within a well-developed area, and there here is no suitable habitat for the Wolverine within the Survey Area and no potential to occur on-site.	✓	
Sierra Nevada Red Fox (***Vulpes vulpes necator***)	E	The Sierra Nevada Red Fox live in high elevation alpine and sub-alpine environments in the central Sierra. They prefer habitats within meadows, mature forests, and talus slopes.	The project area is not located within high elevation alpine or sub-alpine environments. There is no suitable habitat for the Sierra Nevada Red Fox within the Survey Area and no potential to occur on-site.	✓	
Southwestern Willow Flycatcher (***Empidonax traillii extimus***)	E	The southwestern willow flycatcher (SWWF) is a small perching bird found in the American southwest. They typically nest in dense riparian habitat next to surface water; preferring tamarisk (*Tamarix* spp.) and native willow (*Salix* spp.).	There are no stands of willow or tamarisk within the Survey Area. There is no suitable habitat for southwestern willow flycatcher within the Survey Area and no potential to occur on-site.	✓	
Yellow-billed Cuckoo (***Coccyzus americanus***)	T	The yellow-billed cuckoo prefers densely wooded habitat near water, nesting in willows and cottonwoods (*Populus* spp.) nearby streams.	There is no densely wooded habitat near water within the project area. There is no suitable habitat for yellow-billed cuckoo and no potential to occur on-site.	✓	

Federally Listed					
Species	**Status**	**Preferred Habitat**	**Potential to Occur**	**No**	**Yes**
Sierra Nevada yellow-legged frog (SNYLF) (*Rana sierrae*)	FE	Above 4,500 feet. High elevation low-gradient streams and small ponds that are either intermittent or perennial.	There are no high elevation low gradient streams or small ponds within the Survey Area. There is no suitable habitat for Sierra Nevada yellow-legged frog and no potential to occur on-site.	✓	
Yosemite Toad (*Anaxyrus canorus*)	T	The primary habitat for the Yosemite toad is a pond with nearby wet meadows; often near pine forests which provide an additional source of food. They typically live at elevations ranging from 5,000 to 11,000 feet.	There are no ponds or nearby wet meadows within the project area. There is no suitable habitat for the Yosemite Toad and no potential to occur on-site.	✓	
Owens Pupfish (*Cyprinodon radiosus*)	E	The Owens Pupfish prefer pools, sloughs, and flooded pastures in the Owens Valley. Currently there are only five known populations, all occurring within Owens Valley.	There are no pools, sloughs or flooded pastures within the Survey Area. There is no suitable habitat for the Owens pupfish and no potential to occur on-site.	✓	
Owens Tui Chub (*Gila bicolor* ssp. *snyderi*)	E	The historic distribution of the Owens Tui Chub was from Owens Lake up through the major tributaries of the Owens River to their source springs. There are only three known populations of Owens Tui Chub.	There is are no perennial or other major tributary to the Ownes River within the Survey Area. There is no suitable habitat for the Owens Tui chub and no potential to occur on-site.	✓	
Monarch Butterfly (*Danaus plexippus*)	C	Prefer open fields and meadows with milkweed, which is required for laying their eggs (*Asclepias* spp.).	There are open fields and meadows with milkweed within the Survey Area. There is no potential habitat Monarch Butterfly.	✓	
Whitebark Pine (*Pinus albicaulis)*	PT	Subalpine and timberline on rocky, well-drained granitic or volcanic soils	The project area is not located within subalpine and timberline zone. There is no potential for whitebark pine to occur within the Survey Area.	✓	
FE = Federal Endangered; FT = Federal Threatened; PT = Proposed Threatened; C = Candidate					

7.0 REFERENCES

California Department of Conservation. California Geological Survey online mapper 2015. Accessed June 29, 2022.

Clark, Malcolm M. (1967). *Pleistocene glaciation of the drainage of the West Walker River, Sierra Nevada, California*.

Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. Tech. Rpt. Y-87-1.

Federal Geographic Data Committee. 2013. *Classification of wetlands and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin, 2018. Western Mountain 2018 Regional Wetland Plant List.

Munsell Color. 1992. *Munsell Soil Color Charts*. Macbeth Division of Kollmorgen Corporation, Baltimore, MD.

National Park Service. U.S. Department of the Interior. *Southwestern Willow Flycatcher*. [Prepared by Sonya Daw, Southern Colorado Plateau Network I&M Program, 2013]. Updated 2016.

Otis Bay Ecological Consultants, 2009. Walker River Basin Assessment. Unpublished report prepared for US Fish and Wildlife Service.

US Army Corps of Engineers, South Pacific Division Regulatory Program Wetlands Determination and Delineation Procedures for Irrigated Lands (12510-SPD).

US Fish and Wildlife Service. 2022. IPaC Information for Planning and Consultation. https://ecos.fws.gov/ipac/. Accessed June 29, 2022.

USDA Natural Resource Conservation Service. 2015. *List of Hydric Soils of the United States*. http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/.

USDA Natural Resource Conservation Service. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov. Accessed June 29, 2022.

Attachments

Attachment A

Aquatic Resource Delineation Map

Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: ESRI Imagery Services
Vivid Maxar 06/06/2021

Joaquin Parcel
Aquatic Resource Delineation

0 50 100 Feet
1 In = 100 Ft

N

11/5/2024

RCI
Resource Concepts Inc

R:\Projects\MammothSpringsResort\22_606\MXD_PRO\JoaquinRd\JoaquinRd.aprx

Attachment B

Supporting Maps

Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: USGS The National Map, 2021

Figure 1
Joaquin Parcel Location Map

0 500 1,000 Feet
1 In = 1,000 Ft

N

10/31/2024

Resource Concepts Inc

R:\Projects\MammothSpringsResort\22_606\MXD_PRO\JoaquinRd\JoaquinRd.aprx

Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: Web Soil Survey, 2021

Figure 2
Joaquin Parcel
Web Soil Survey

0 50 100 Feet
1 In = 100 Ft

N

10/31/2024

RCI Resource Concepts Inc

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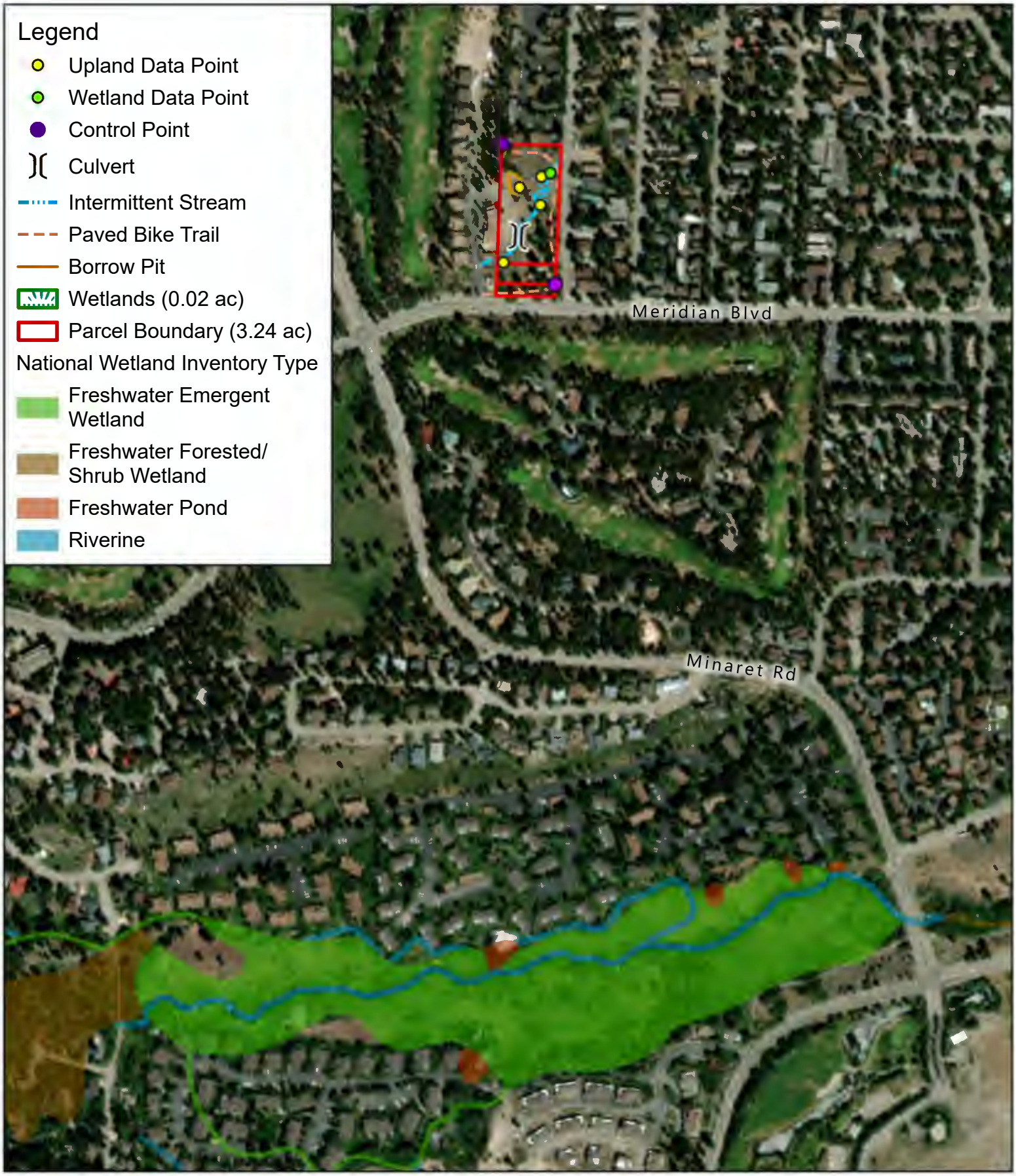

Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: National Wetland Inventory, 2020

Figure 3
Joaquin Parcel
National Wetland Inventory

0 250 500 Feet
1 In = 500 Ft

N

10/31/2024

RCI Resource Concepts Inc

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Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: FEMA Flood Map, 2021

Figure 4
Joaquin Parcel
FEMA Floodplain

0 250 500 Feet
1 In = 500 Ft

N

10/31/2024

RCI Resource Concepts Inc

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Project: Mammoth Springs Resort
County: Mono County, CA
Surveyors: JoAnne Michael
Date: 5/18/2022
Source: ESRI Imagery Services
Vivid Maxar 06/06/2021

Figure 5
Joaquin Parcel
Photo Point Map

0 50 100 Feet
1 In = 100 Ft

N

10/31/2024

RCI Resource Concepts Inc

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Attachment C

On-Site Photographs

Attachment C – Photo Plates

Photo 1. Overview of upland forest (typical) at southern end of Survey Area, bike path visible on the right side. Dominant vegetation includes Jeffrey pine (*Pinus jeffreyi*, UPL) and antelope bitterbrush (*Purshia tridentata*, UPL). View looking north.

Photo 2. Overview of upland shrub community in southwest corner of Survey Area. Dominant vegetation includes big sagebrush (*Artemisia tridentata*, UPL). View looking west.

Attachment C – Photo Plates

Photo 3. Overview of graded dirt road from east side of Survey Area toward AR-1 culvert crossing and leveled parking area on west side. View looking northwest.

Photo 4. Overview of leveled parking area along west side of Survey Area. View looking south.

Attachment C – Photo Plates

Photo 5. Overview of northern end of Survey Area and bike path. Dominant vegetation includes coaltown sagebrush (*Artemisia cana*, FACU) and graceful cinquefoil (*Potentilla gracilis*, FAC). Several dead and/or dying quaking aspen (*Populus tremuloides*, FACU) visible along path with Jeffery pine encroachment occurring. View looking west.

Photo 6. OHWM-1: AR-1 an intermittent stream that flows southwest to northeast through Survey Area. OHWM identified by change in substrate and vegetation. View looking northwest at upper reach of channel.

Attachment C – Photo Plates

Photo 7. DP-1 taken in upland shrub community adjacent to upper reach of AR-1 near OHWM-1. Vegetation dominated by big sagebrush. View looking north.

Photo 8. AR-1 at culvert crossing under graded dirt road. View looking south, upstream.

Attachment C – Photo Plates

Photo 9. DP-2 characteristic upland shrub community adjacent to AR-1: intermittent stream and the divergence of AR-1a and AR-1b. Vegetation dominated by coaltown sagebrush and graceful cinquefoil. View looking north.

Photo 10. OHWM-2: AR-1a high water channel splitting from AR-1 to rejoin downstream. OHWM identified by scour line, undercut bank, and sediment deposition. View looking northeast.

Attachment C – Photo Plates

Photo 11. OHWM-3: AR-1b high water channel splitting from AR-1 to rejoin downstream. OHWM identified by scour line and lack of terrestrial vegetation in channel. View looking east.

Photo 12. DP-3 taken in upland area adjacent to AR-1 just downstream of confluence with AR-1b. Photo shows overview of central higher gradient zone of Survey Area. View looking southwest.

Attachment C – Photo Plates

Photo 13. DP-4: AR-2 a palustrine emergent wetland adjacent to AR-1. Vegetation dominated by Sedge (*Carex* sp., OBL-FAC) and Baltic Rush (*Juncus balticus*, FACW). View looking northeast.

Photo 14. Location of where AR-1 exits the Survey Area through a grated culvert going under Joaquin Road. View looking south.

Attachment C – Photo Plates

Photo 15. DP-5 stormwater basin excavated in uplands at the western boundary of Survey Area. Sparsely vegetated; however, data point taken in lowest area of basin. Vegetation dominated by sedge and coaltown sagebrush. View looking southeast.

Attachment D

Plant List

Appendix D – Delineation Plant List

Scientific Name	Common Name	Wetland Indicator Status
Achillea millefolium	Common yarrow	FACU
Allium bisceptrum	Aspen onion	FAC
Artemisia cana	Coaltown sagebrush	FACU
Artemisia tridentata	Big sagebrush	UPL
Carex sp.	Sedge	OBL-FAC
Chorispora tenella	Purple mustard	UPL
Collinsia parviflora	Maiden blue-eyed Mary	UPL
Crepis acuminata	Tapertip hawksbeard	UPL
Eriogonum sp.	Wild buckwheat	FACU
Geranium sp.	Crane's-bill	FAC-FACU
Juncus balticus	Baltic rush	FACW
Lithophragma glabrum	Bulbous woodland star	UPL
Pinus jeffreyi	Jeffery pine	UPL
Poa pratensis	Kentucky blue grass	FAC
Populus tremuloides	Quaking aspen	FACU
Potentilla gracilis	Graceful cinquefoil	FAC
Purshia tridentata	Antelope bitterbrush	UPL
Rumex crispus	Curly dock	FAC
Senecio integerrimus	Lamb-Tongue ragwort	FACU
Symphoricarpos albus	Common snowberry	FACU
Taraxacum officinal	Common dandelion	FACU
Wyethia mollis	Mule ears	UPL

Attachment E

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Joaquin Parcel City/County: Mammoth Lakes/Mono County Sampling Date: 05/18/2022

Applicant/Owner: Mammoth Springs Resort State: CA Sampling Point: DP-1

Investigator(s): JoAnne Michael, Erin Smith Section, Township, Range: Sect. 34, Township 3 S, Range 27 E

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): D Lat: 37.64063967 Long: -118.97762686 Datum: NAD 83

Soil Map Unit Name: Chesaw family, 0 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland shrub community adjacent to east side of AR-1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia tridentata	50	Y	UPL
2. Symphoricarpos albus	10	N	FACU
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Collinsia parviflora	5	Y	UPL
2. Wyethia mollis	5	Y	UPL
3. Eriogonum sp.	2	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	12 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 88

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	12	x 4 =	48
UPL species	60	x 5 =	300
Column Totals:	72 (A)		348 (B)

Prevalence Index = B/A = 4.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks:

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10 YR 3/2	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 13 in.

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): None
Water Table Present?	Yes _____	No ✔	Depth (inches): > 13 in.
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): > 13in.

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Data point taken adjacent to AR-1 (ephemeral stream). Bottom of stream located about 4ft. below elevation of DP-1. There is no water or saturated soils in stream. Vole tunnels abundant on-site.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Joaquin Parcel City/County: Mammoth Lakes/Mono County Sampling Date: 05/18/2022

Applicant/Owner: Mammoth Springs Resort State: CA Sampling Point: DP-2

Investigator(s): JoAnne Michael, Erin Smith Section, Township, Range: Sect. 34, Township 3 S, Range 27 E

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): None Slope (%): 0-5

Subregion (LRR): D Lat: 37.64127245 Long: -118.97713594 Datum: NAD 83

Soil Map Unit Name: Chesaw family, 0 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Data point taken in upland area between braided channel section (between AR-1 and AR-1a).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia tridentata	50	Y	UPL
2. Symphoricarpos albus	10	N	FACU
3. Pinus jeffreyi	5	N	UPL
4.			
5.			
	65 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Potentilla gracilis	50	Y	FAC
2. Allium bisceptrum	15	Y	FAC
3. Achillea millefolium	5	N	FACU
4. Senecio integerrimus	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✔ **No** _____

Remarks:

25% boulder cover.

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10 YR 3/2	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 4in.

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Well drained soil over large boulders.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): None
Water Table Present?	Yes _____	No ✔	Depth (inches): > 4in.
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): > 4in.

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of ponding or flooding. Data point located 2ft. in elevation above bottom of AR-1, no flow or saturated soils in stream channel at time of survey.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Joaquin Parcel City/County: Mammoth Lakes/Mono County Sampling Date: 05/18/2022

Applicant/Owner: Mammoth Springs Resort State: CA Sampling Point: DP-3

Investigator(s): JoAnne Michael, Erin Smith Section, Township, Range: Sect. 34, Township 3 S, Range 27 E

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Convex Slope (%): 3

Subregion (LRR): D Lat: 37.64157961 Long: -118.9771313 Datum: NAD 83

Soil Map Unit Name: Chesaw family, 0 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Data point taken on upland slope west of AR-1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia cana	40	Y	FACU
2. Symphoricarpos albus	10	N	FACU
3. Populus tremuloides	10	N	FACU
4. Pinus jeffreyi	10	N	UPL
5.			
	70 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Potentilla gracilis	30	Y	FAC
2. Senecio integerrimus	15	Y	FACU
3. Collinsia parviflora	15	Y	UPL
4. Allium bisceptrum	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	75	x 4 =	300
UPL species	25	x 5 =	125
Column Totals:	140 (A)		545 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks:

Approximately 50% of Populus tremuloides is dead. Several young pines are encroaching into meadow.

SOIL

Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10 YR 3/2	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Boulders

Depth (inches): 4in.

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): None
Water Table Present?	Yes _____	No ✔	Depth (inches): > 4in.
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): > 4in.

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of ponding or surface flow; evidence of mammal burrows.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Joaquin Parcel City/County: Mammoth Lakes/Mono County Sampling Date: 05/18/2022

Applicant/Owner: Mammoth Springs Resort State: CA Sampling Point: DP-4

Investigator(s): JoAnne Michael, Erin Smith Section, Township, Range: Sect. 34, Township 3 S, Range 27 E

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D Lat: 37.64162216 Long: -118.97700866 Datum: NAD 83

Soil Map Unit Name: Chesaw family, 0 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex sp.	30	Y	OBL-FAC
2. Juncus balticus	30	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✔ **No** _____

Remarks:

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10 YR 3/2	100					Sand	Decomposed granite

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ✔ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 6in.

Hydric Soil Present? Yes ✔ No ___

Remarks:

Decomposed granite (from glacial outwash) perched on bedrock. No soil development within active drainage area surrounding channel of AR-1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): None

Water Table Present? Yes ___ No ✔ Depth (inches): > 6in.

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): > 6in.

Wetland Hydrology Present? Yes ✔ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small depression at toe of road slope; some evidence of scour from road runoff.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Joaquin Parcel City/County: Mammoth Lakes/Mono County Sampling Date: 05/18/2022

Applicant/Owner: Mammoth Springs Resort State: CA Sampling Point: DP-5

Investigator(s): JoAnne Michael, Erin Smith Section, Township, Range: Sect. 34, Township 3 S, Range 27 E

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR): D Lat: 37.64145913 Long: -118.97742612 Datum: NAD 83

Soil Map Unit Name: Chesaw family, 0 to 5 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Excavated basin within upland area on side of slope/embankment to parking area; captures runoff from adjacent parking lot. No outflow from basin. Possible borrow pit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia cana	15	Y	FACU
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex sp.	30	Y	OBL-FAC
2. Rumex crispus	5	N	FAC
3. Achillea millefolium	10	N	FACU
4. Collinsia parviflora	5	N	UPL
5. **unknown grass (Poa pratensis??)	10	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	5	x 5 =	250
Column Totals:	60 (A)		425 (B)

Prevalence Index = B/A = 7.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✔

Remarks:

SOIL

Sampling Point: DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10 YR 3/2	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): None
Water Table Present?	Yes _____	No ✔	Depth (inches): > 14in.
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): > 14in.

Wetland Hydrology Present? **Yes** _____ **No** ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Collects water from parking lot runoff and snow melt.

Attachment F

OHWM Data Forms

OHWM Delineation Cover Sheet

Project: Joaquin Parcel **Date:** May 18, 2022

Location: Mono County, CA **Investigator(s):** JoAnne Michael, Erin Smith

Project Description:

The purpose of the delineation is to identify on-site wetlands for future planning purposes.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

On-site aquatic resources consist of one intermittent stream with two lateral, high-flow channels and an abutting wetland. Based on review of aerial photos (2002), the stream appears to have been relocated and straightened as it enters the property from the west and has been stabilized through the placement of rock and boulders along the stream bank. The channel flows northwest and off-site via a culvert under Joaquin Road.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Aerial photo used to map data points and OHWMs

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

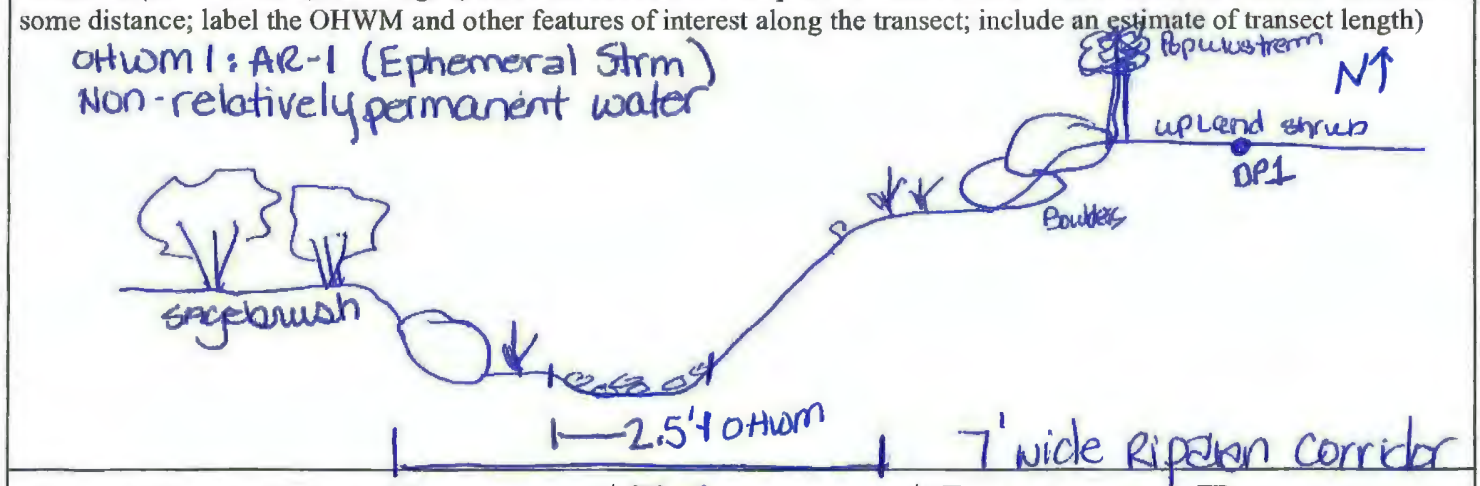
List and describe any other supporting information received/acquired:

National Wetland Inventory Map
NRCS Web soil survey maps
FEMA floodplain map

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet # OHWM-1 | **OHWM Delineation Datasheet** | Page 2 of 4

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	5	5	40	50	Y
Below OHWM	0	5	15	30	50	N

Notes/Description:

50% of populus tremuloides on stream bank dead or dying

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	10	30	60
Below OHWM	0	0	5	95

Notes/Description:

Below OHWM occassional grass

on-stream bank above OHWM mugwort
ranunculus sp. grass sp.

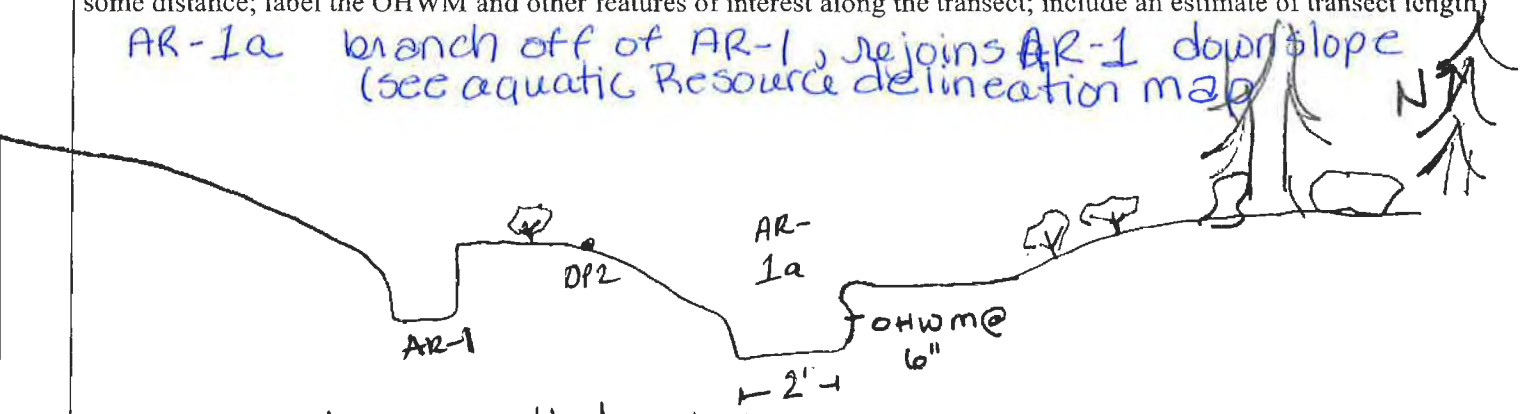
Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM identified in field by
- lack of vegetation
- change in substrate (boulder/cobble ⇒ cobble/gravel mix)

Datasheet # OHWM-2 **OHWM Delineation Datasheet** Page 3 of 4

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

AR-1a branch off of AR-1, rejoins AR-1 downslope (see aquatic Resource delineation map)



interminten channel bed and bank

Break in Slope at OHWM: ☑ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	Ø	100	5	10	25	N
Below OHWM	20	40	10	10	20	N

Notes/Description:

shallow soil over bedrock

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	25	50	50	50
Below OHWM	Ø	Ø	Ø	100

Notes/Description:

Adj. veg = 2 large Jeffrypines
50% silver sage (Artemisia cana)
herb: potentilla gracilis, Allium, Collinsia parvifolium

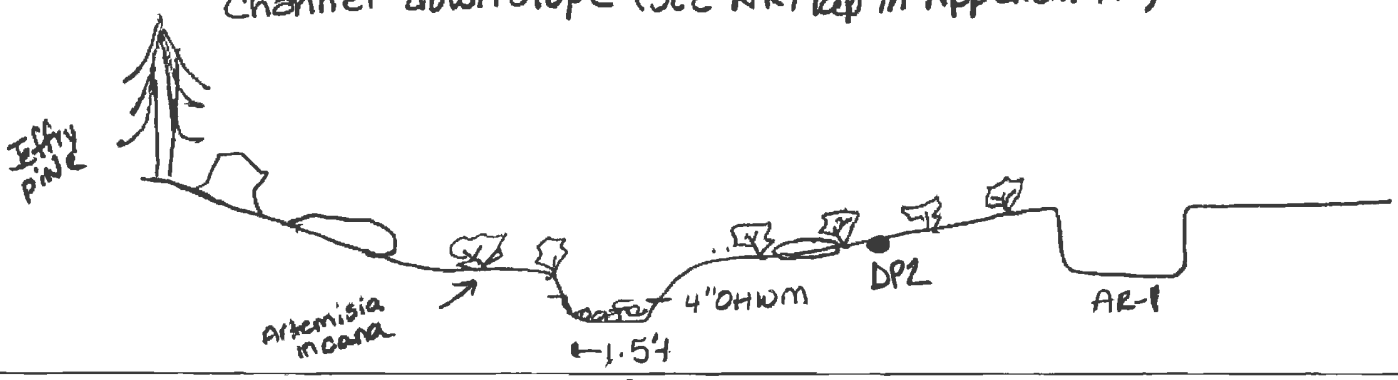
Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Identified in field by:
- scour
- undercut bank
- sediment deposition
- lack of vegetation

Datasheet # OHWM-3 **OHWM Delineation Datasheet** Page 4 of 4

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)

AR-1b : ephemeral channel off of AR-1, rejoins main channel downslope (see AR Map in Appendix A)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☑ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	60	10	10	20	N
Below OHWM	10	10	50	20	10	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	10	50	50	50
Below OHWM	0	0	0	100

Notes/Description:

Adj. vegetation dominated by Artemisia incana

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM Identified in field by:

- lack of terrestrial veg
- scour line on bank

Attachment G

Signed Statement from Property Owner Allowing Access

Authorization to Access Site

I, _____, owner of subject Survey Area, authorize the Corps representatives to inspect the Mammoth Springs Resort – Joaquin Parcel Aquatic Resource Delineation Survey Area located along the west side of Joaquin Road in the town of Mammoth Lakes, California, and to collect samples during normal business hours. The Survey Area is approximately 3-acres total.

The Survey Area is located in portions of Mono County, California.

APNs: 033-170-003 & 033-370-020

Signature _____ Title_____

Date _____

Attachment H

Aquatic Resource Excel Sheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
AR-1	CALIFORNIA	R4	RIVERINE	Linear	540	FOOT	NRPW	37.64073118	-118.9775563	
AR-1a	CALIFORNIA	R4	RIVERINE	Linear	110	FOOT	NRPW	37.64124878	-118.977103	
AR-1b	CALIFORNIA	R4	RIVERINE	Linear	110	FOOT	NRPW	37.64138596	-118.9772101	
AR-2	CALIFORNIA	PEM	DEPRESS	Area	0.01	ACRE	NRPWW	37.64162216	-118.9770087	

Attachment I

Digital Information