APPROVED JURISDICTIONAL DETERMINATION FORM

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 15, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, Clinton Gulch Reservoir, SPK-2014-00518

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Colorado** County/parish/borough: **Summit County** City:

Center coordinates of site (lat/long in degree decimal format): Lat. **39.4109821509576**°, Long. **-106.169292285633**°

Universal Transverse Mercator: **13 399335.91 4363037.51**

Name of nearest waterbody: **Clinton Gulch Reservoir**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Tenmile Creek (ref. SPK-2007-01844)**

Name of watershed or Hydrologic Unit Code (HUC): **Blue, 14010002**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: February 15, 2019

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply): [1]

☐ TNWs, including territorial seas

☐ Wetlands adjacent to TNWs

☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs

☐ Non-RPWs that flow directly or indirectly into TNWs

☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

☐ Impoundments of jurisdictional waters

☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters:

c. Limits (boundaries) of jurisdiction based on:

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):[3]

☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.

[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

[3] Supporting documentation is presented in Section III.F.

1. TNW
Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is “adjacent”:

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are “relatively permanent waters” (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **acres**
Drainage area: **acres**
Average annual rainfall: **inches**
Average annual snowfall: **inches**

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **3** tributaries before entering TNW.

Project waters are river miles from TNW.
Project waters are river miles from RPW.
Project waters are aerial (straight) miles from TNW.
Project waters are aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: N/A

Identify flow route to TNW[5]:

Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary properties with respect to top of bank (estimate):
Average width:
Average depth:
Average side slopes**.**

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: pipe

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:.
Tributary geometry:
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for:
Estimate average number of flow events in review area/year:
Describe flow regime:
Other information on duration and volume:

Surface flow is**.** Characteristics.

Subsurface flow: Explain findings:
- ☐ Dye (or other) test performed:

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain:
Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):
- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**
Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain:
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet, wide, Or acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: **Flows are perennial in most years, with water being used throughout the year for municipal, irrigation, and snowmaking purposes.**
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters:**3.19 miles, starting at Clinton Creek, at approximately latitude 39.39960°, longitude -106.15759° downstream to its confluence with Mayflower Creek at approximately latitude 39.42855°, longitude -106.16146°.**
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters:

3. Non-RPWs[8] that flow directly or indirectly into TNWs.

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **August 21, 2018 *Clinton Gulch Reservoir = Historical Spillway Flows***
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☒ U.S. Geological Survey Hydrologic Atlas:
  ☒ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Copper Mountain**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date):
  or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: See February 15, 2019 MFR.

Resource Engineering, Inc.
909 Colorado Avenue
Glenwood Springs, CO 81601
(970)-945-6777 Voice
www.resource-eng.com

Memorandum

To: Matt Montgomery

From: Raul Passerini

CC: Mike Claffey

Date: August 21, 2018

Re: Clinton Gulch Reservoir – Historical Spillway Flows

Matt,

During a recent phone communication, you asked us to disaggregate the monthly data of spillway flows to supplement the narrative description, tables and charts submitted to you via email on 4/8/2016. As discussed, flows through the emergency spillway vary from year to year in amount and duration. The Reservoir Operating Criteria requires to lower the reservoir level by releasing storage through the outlet during the early spring weeks in preparation for the snowmelt season. This is because the emergency spillway discharges into the Clinton Canal which has a flow capacity of about 80 cubic feet per second (cfs). Therefore, by lowering the reservoir level early in the snowmelt season the Reservoir Operating Criteria seeks to ensure that enough capacity is available to store a significant portion of the snowmelt runoff volume and limit the rate of discharge into the Clinton Canal to safe levels. In other words, because flows through the spillway conduit cannot be controlled, the purpose of the Reservoir Operating Criteria is to effectively reduce the utilization of the emergency spillway and minimize the probability that high flow rates are conveyed through the spillway conduit.

Although variable year to year, flows through the emergency spillway typically occur during the late summer weeks, approximately between late-June through mid-September. The duration and magnitude of these flows depend not only on the snowpack accumulated in the Clinton Creek basin above the reservoir, but also on water rights administration, releases from storage required by the shareholders, and reservoir operation and maintenance projects. For example, in 2011 the Clinton Creek basin snowpack was well above average (140% of average max snow-water equivalent). However, the number of days with water flowing through the spillway was just over the average: 74 days, or 110% of average. On the other hand, the 2013 snowpack was 95% of average but on this year the spillway conveyed flows for 93 days (140% of the average). Another example of spillway flows variability is that in 4 of the 25 years of data no water was conveyed through the spillway pipe (i.e. the reservoir did not fill). These years were 1997 (with a snowpack 132% of average); 1999 (111% of average); 2002 (63%); and 2008 (134%).

The attached plots were prepared to graphically display the frequency and duration of water flowing through the Clinton Gulch Reservoir spillway conduit. The attached **Chart 1** shows, for each year of the 1994-2018 period, the total number of days per year when the Reservoir was spilling (i.e. water flowing through the emergency spillway). The grey bars display the total number of spill days per year, while the orange bars show, for each year, the maximum number of consecutive days with flows through the emergency spillway conduit. During most years, the two numbers are very similar reflecting a typical Colorado reservoir operation scheme: filling during snowmelt season; full and spilling during early summer; releasing from storage during rest of the year. However, this is not always the case. For instance, water rights administration and operational requirements during 2014 and 2015

were such that the reservoir was at or near capacity levels during the winter months, which caused water to flow through the emergency spillway not only during the summer but also in January and February.

Chart 2 shows the same data as **Chart 1** along with plots of the 30-year average and annual maximum snow-water equivalent amounts recorded at the nearby Fremont Pass SNOTEL station. Due to its location, accumulated snow measured at the Fremont Pass SNOTEL site provides a good indication of the status of the snowpack above Clinton Gulch Reservoir. **Chart 2** visually shows that the duration of flows through the emergency spillway is not strongly correlated with the amount of snow accumulated above the reservoir. For example, while the snowpack above Clinton Gulch Reservoir reached above average values in 2006, 2007, and 2008, the duration of flows through the spillway on those years was below average. Another example is 1995, which experienced the highest amount of snow accumulation but had only 9 consecutive days of flow through the emergency spillway.

Chart 3 is a frequency plot of the number of days per year (total and consecutive) when the emergency spillway conduit conveyed reservoir water. For example, the plot shows that over the 25-year data period flows through the emergency spillway did not occur 16% of the time (4 out of 25 years). Similarly, 20% of the time flows lasted less than 31 days. Spillway flows lasted between 90 and 104 days 16% of the time.

The following parameters also demonstrate the variability of duration of flows though the emergency spillway:

Range (difference between smallest and largest values) = 159 days, flows through the spillway have lasted from 0 to 159 days per year.

Mean Number of Days with Flows through Emergency Spillway = 67.1 days per year

Standard Deviation = 46.8 days – The relatively large standard deviation, as compared to the mean, demonstrates how scattered the values are and how much they differ from the mean value.

Lastly, **Chart 4** is a time series of flow rates discharged through the emergency spillway. This figure also displays the variability of emergency spillway flow rates and duration, with peak values ranging from 2 cfs (in year 2000) to 99 cfs (1995).

In conclusion, the analysis of the emergency spillway flow data shows that these flows are very intermittent and not directly related to the hydrology of the Clinton Gulch watershed. For your convenience, I have also enclosed Figures 1 through 4 submitted via email on 4/16/2018; please note that the emergency spillway conduit joins the dam's outlet pipe before discharging into Clinton Canal. We hope this information will be helpful to better understand the hydrology of Clinton Gulch Reservoir flows through its emergency spillway. Please do not hesitate to contact me if you have questions or need additional data.

Chart 1

Clinton Gulch Reservoir - Total number of days per year when water was flowing through the spillway conduit (grey bars), along with maximum number of consecutive days per year when water was conveyed by the spillway (orange).

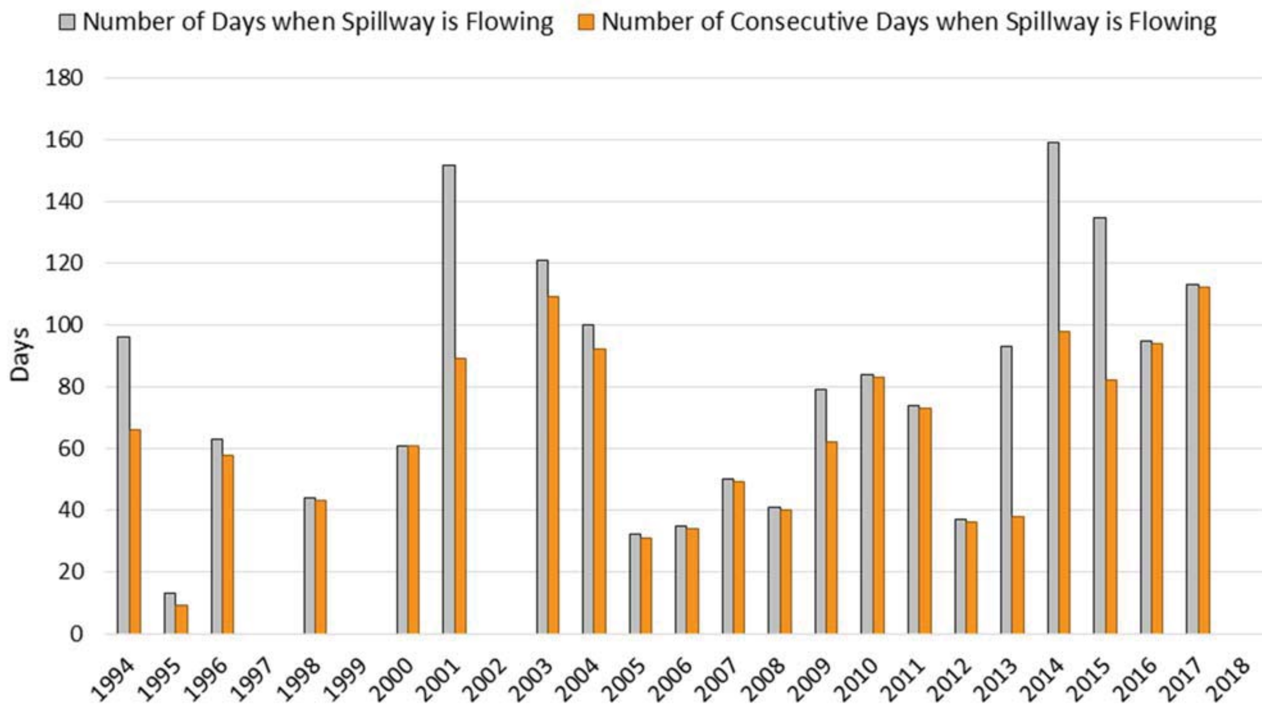


Chart 2

Clinton Gulch Reservoir - Same as Figure 1 but also showing the maximum annual snow-water equivalent as reported by the nearby Fremont Pass SNOTEL station.

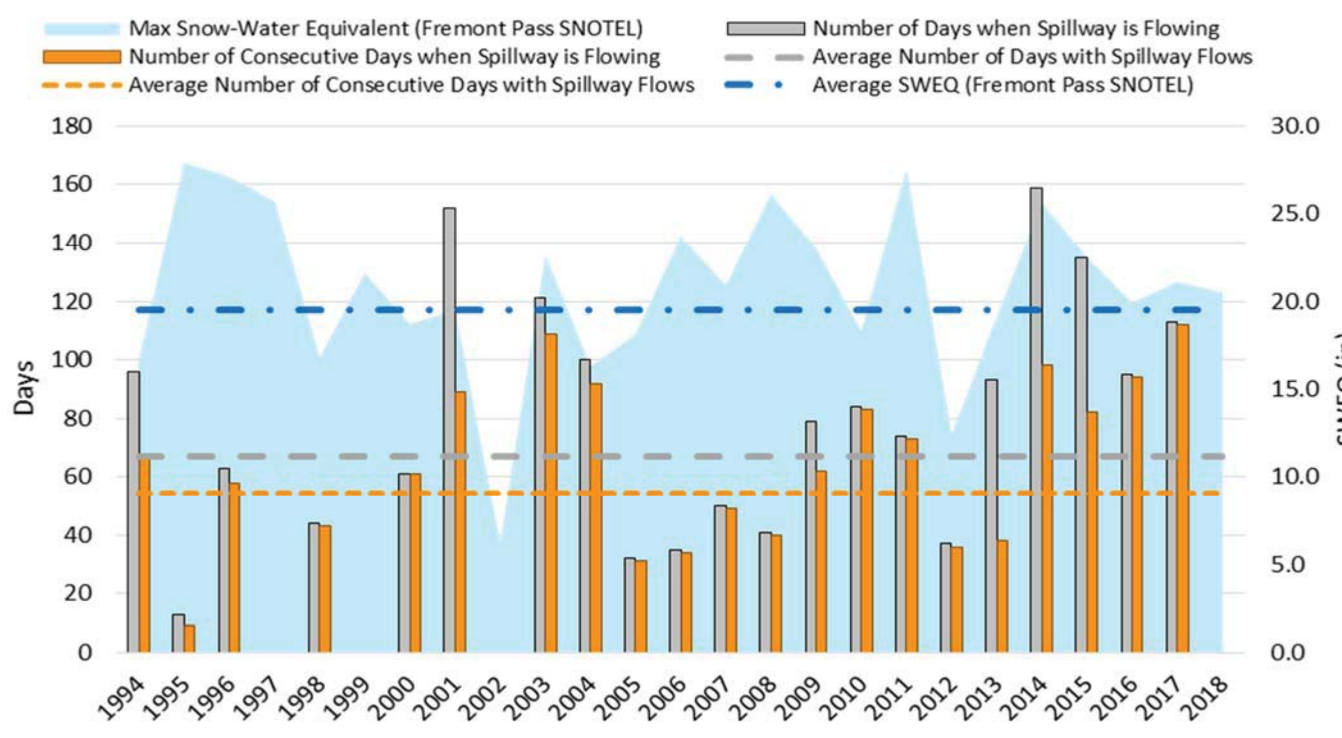


Chart 3

Clinton Gulch Reservoir - Frequency plot of total and consecutive days per year when water is conveyed through the spillway conduit (1994-2018 period).

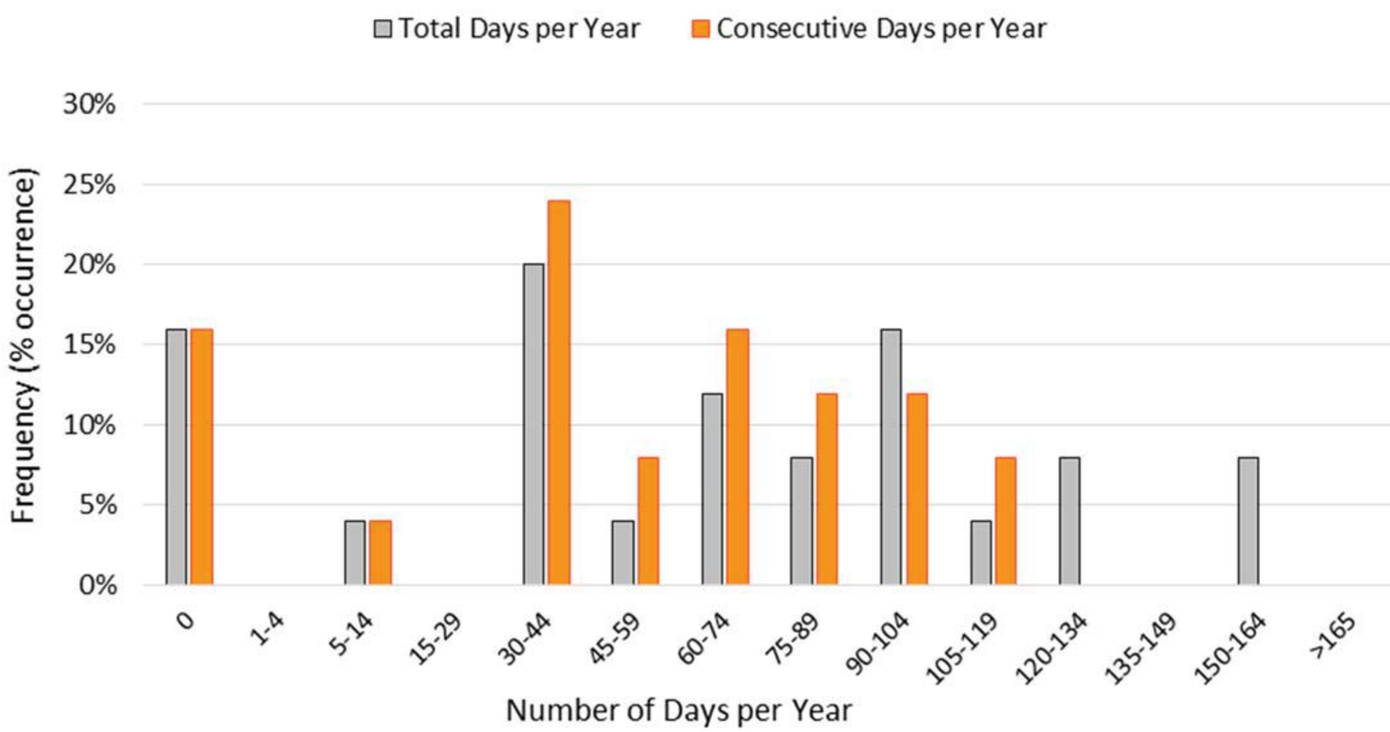
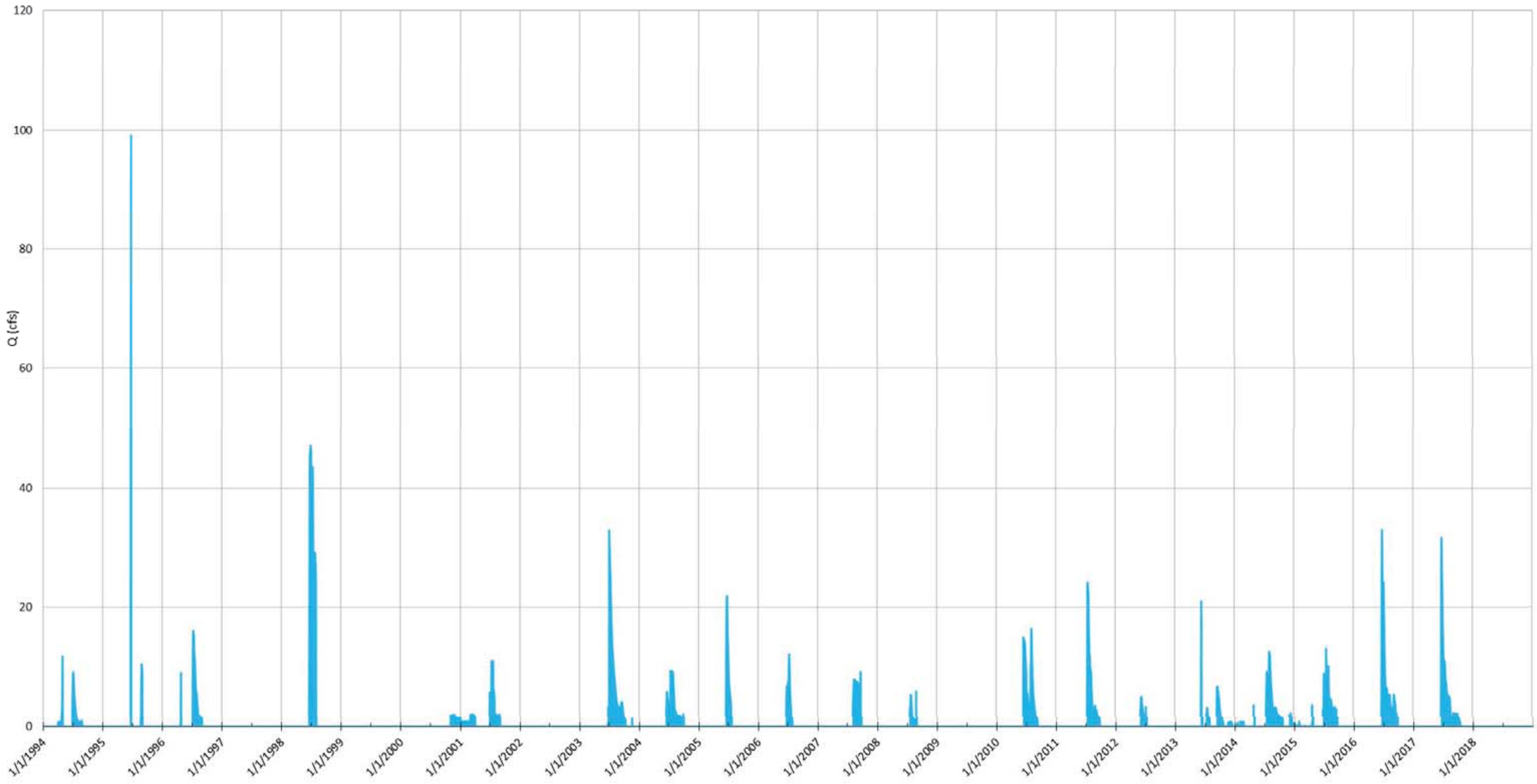
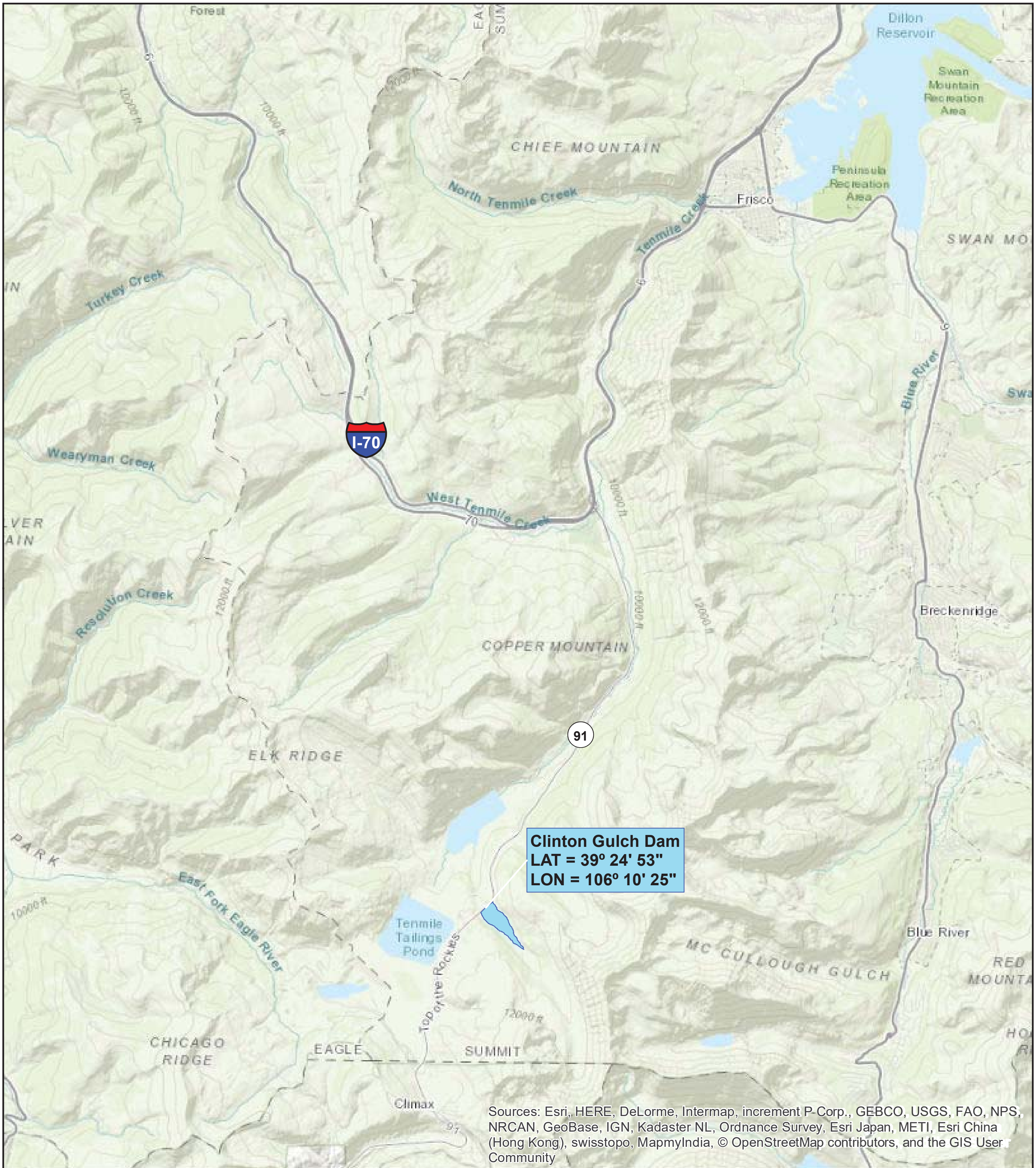


Chart 4

Clinton Gulch Reservoir – Time series of flows through the emergency spillway conduit during the available period of record. Vertical gridlines are displayed at a 1-year interval. No data is available for the August 1999-October 2000 period.





Clinton Gulch Dam

Figure 1: Location Map

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1 in = 2 miles

Miles
0 1 2 4

N E S W

Date:2016-01-29
File: 423-7.12.3
Drawn: DNR
Approved: RP

Source: NAIP Aerial Photography (2015)

Clinton Gulch Dam

Figure 2: Vicinity Map

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1 in = 2,000 ft

Feet
0 1,000 2,000 4,000

N W E S

Date:2018-08-21
File: 423-7.12.7
Drawn: DNR
Approved: RP

Source: Google Earth Imagery (2015)

Clinton Gulch Dam

Figure 3: Proposed Emergency Spillway Modification

Plan View

1 inch = 60 feet

0 30 60 120 Feet

N W E S

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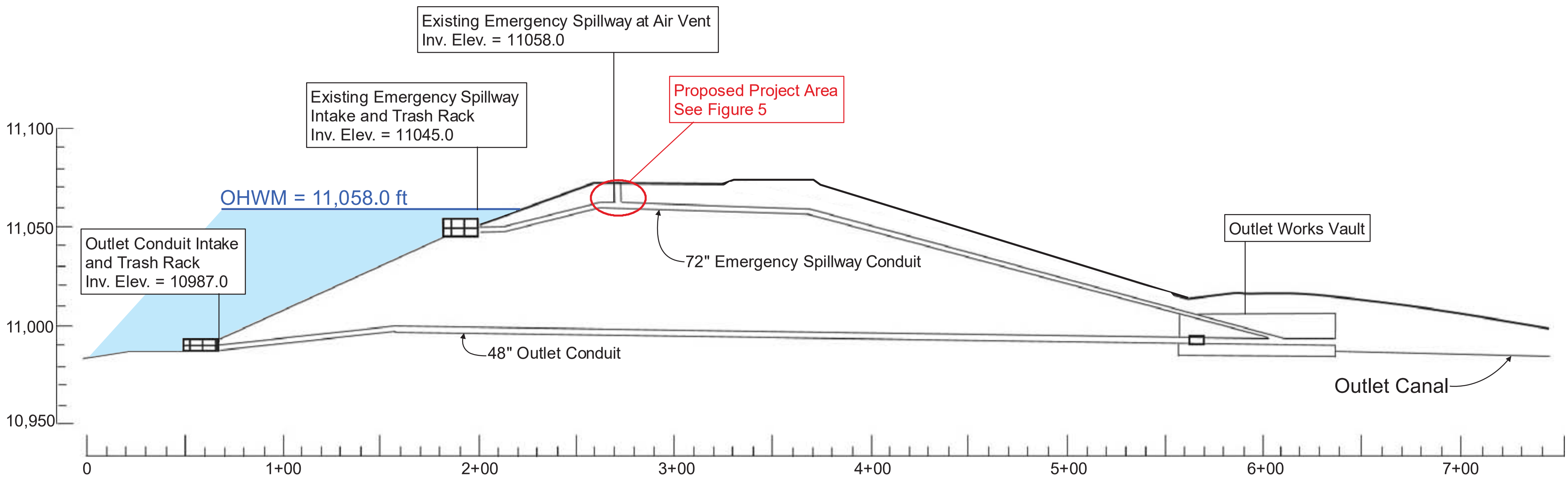

Clinton Gulch Dam

Figure 4: Profiles of Outlet and Emergency Spillway Conduits

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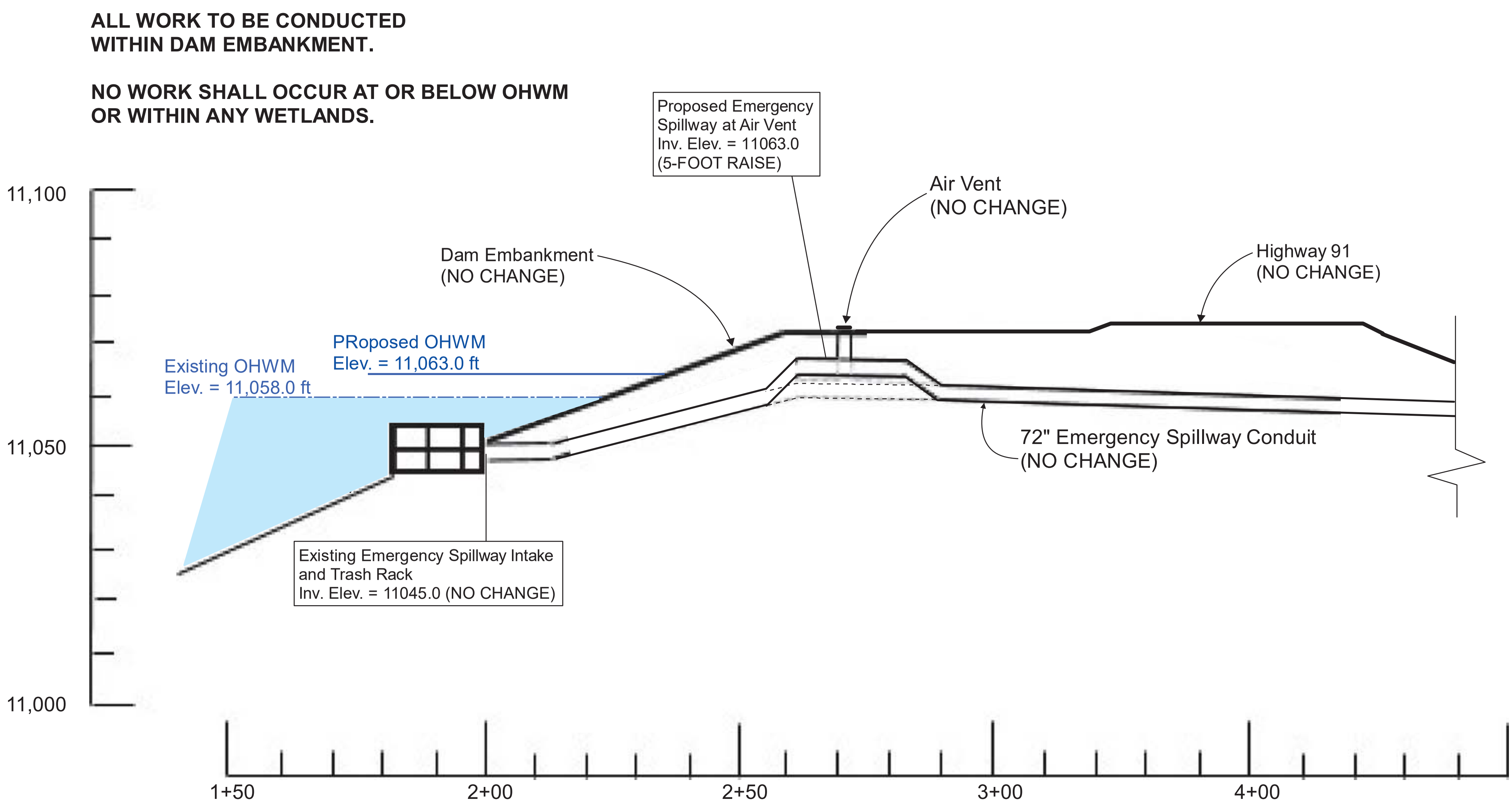

Clinton Gulch Dam

Figure 5: Proposed Emergency Spillway Modification

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Drawn: RP
Approved:

NHD - 201400518
Legend
Creek
Google earth
© 2018 Google
N
2 mi

CESPK-RDI-C 15 February 2019

MEMORANDUM FOR RECORD

SUBJECT: Clinton Gulch Reservoir Project Jurisdictional Determination and Regulatory Authority (Regulatory Division SPK-2014-00518)

1. The Clinton Ditch and Reservoir Company (owner and operator of Clinton Gulch Reservoir) intends to raise the crest of the reservoir spillway 5-vertical feet. The Clinton Gulch Reservoir is an impoundment of Clinton Creek, which has a water-storage capacity of 4,460 acre-feet. The proposed modification would increase the storage capacity of Clinton Gulch Reservoir by approximately 450 acre-feet (See August 21, 2018 Memorandum regarding Historical Spillway Flows, Figures 4 and 5 depicting a conceptual site plan and profile of the proposed modification). The modification entails excavating the area of the dam where the spillway's air vent is located and modifying a ~34-foot section of the 72-inch by ~500-foot emergency spillway conduit to raise the air vent 5 feet (i.e., from 11,058 to 11,063 feet amsl).

2. The emergency spillway conduit is a pipe that is used when Clinton Reservoir is full to convey water to the Clinton Canal. Clinton Creek no longer exists below Clinton Gulch Reservoir. The entire open channel of Clinton Creek was relocated into pipe and canal to convey water between Clinton Creek and Mayflower Creek. The fact that the pipe and canal are artificial features is irrelevant to the question of Clean Water Act Jurisdiction. (See 21 June 2018 Memorandum for Record for full consideration of artificial conveyances).

3. Clinton Creek is a perennial tributary to Tenmile Creek, a Traditional Navigable Water. The relevant reach is a relatively-permanent water formed by the point at which Clinton Creek becomes a 2nd order stream at approximately latitude 39.39960°, longitude -106.15759° downstream to its confluence with Mayflower Creek at approximately latitude 39.42855°, longitude -106.16146°. From its upstream point, Clinton Creek flows approximately 1.4 mile and is impounded on-channel at Clinton Gulch Reservoir, where the stream is relocated to two pipes (i.e., outlet and spillway) at approximately latitude 39.41583°, longitude -106.17179°. The relevant reach continues approximately 500-feet (0.09 mile) through the on-channel dam forming Clinton Gulch Reservoir into the Clinton Canal for approximately 1.7 miles to Mayflower Creek. From this point, Mayflower Creek flows for about 1.1 miles until its confluence with Tenmile Creek. Tenmile Creek flows approximately 8.12 miles to its confluence with Officers Gulch. A Traditional Navigable Water and Navigable In-Fact Determination was made October 7, 2007, for the reach of Tenmile Creek from Officers Gulch to Dillon Reservoir (SPK-2007-01844).

4. The ordinary-high-water mark (OHWM) of the pool of water impounded behind Clinton Gulch Dam is at the same elevation as the invert of the emergency spillway conduit such that the emergency spillway conduit is acting as the control structure for the water-surface elevation behind the dam (i.e., rather than acting as an spillway for emergency events).

Based on data provided by the project proponent, the spillway has experienced flows for 30 or more consecutive days in 20 of 25 years and 60 or more consecutive days in 12 of 25 years. The emergency spillway contributes flow on average 74 days each year (See August 21, 2018 Memorandum regarding Historical Spillway Flows, Chart 3). That is, flows through the emergency spillway conduit are regular, reoccurring flows not associated with exceptional or extreme events. Therefore, the spillway conveys the ordinary-high-water flows each year. The flows from the 48" outlet are perennial in most years, since shareholders consists of every major water user and water provider in Summit County and the largest ski resort in Grand County. Releases are made all year long for municipal, irrigation, snow-making, and augmentation. These water-conveyance features are tributary to Tenmile Creek and are jurisdictional waters of the U.S. (WOTUS) pursuant to 33 CFR 328.3(a)(5).

5. The proposed modification would have the effect of a discharge of fill material because it would change the bottom elevation of a WOTUS. Fill material is material placed in WOTUS “where the material has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing the bottom elevation of any portion of a water of the United States (33 CFR 323.2(e)(1)). Fill material includes, “materials used to create any structure or infrastructure in waters of the U.S.” (33 CFR 323.2(e)(2).

TRAVIS MORSE
SENIOR PROJECT MANAGER
COLORADO WEST SECTION
REGULATORY DIVISION

3 Encls
1. 21 August 2018 Memorandum
2. 21 June 2018 Memorandum
3. TNW NIF SPK-2007-01844

Resource Engineering, Inc.
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Memorandum

To: Matt Montgomery

From: Raul Passerini

CC: Mike Claffey

Date: August 21, 2018

Re: Clinton Gulch Reservoir – Historical Spillway Flows

Matt,

During a recent phone communication, you asked us to disaggregate the monthly data of spillway flows to supplement the narrative description, tables and charts submitted to you via email on 4/8/2016. As discussed, flows through the emergency spillway vary from year to year in amount and duration. The Reservoir Operating Criteria requires to lower the reservoir level by releasing storage through the outlet during the early spring weeks in preparation for the snowmelt season. This is because the emergency spillway discharges into the Clinton Canal which has a flow capacity of about 80 cubic feet per second (cfs). Therefore, by lowering the reservoir level early in the snowmelt season the Reservoir Operating Criteria seeks to ensure that enough capacity is available to store a significant portion of the snowmelt runoff volume and limit the rate of discharge into the Clinton Canal to safe levels. In other words, because flows through the spillway conduit cannot be controlled, the purpose of the Reservoir Operating Criteria is to effectively reduce the utilization of the emergency spillway and minimize the probability that high flow rates are conveyed through the spillway conduit.

Although variable year to year, flows through the emergency spillway typically occur during the late summer weeks, approximately between late-June through mid-September. The duration and magnitude of these flows depend not only on the snowpack accumulated in the Clinton Creek basin above the reservoir, but also on water rights administration, releases from storage required by the shareholders, and reservoir operation and maintenance projects. For example, in 2011 the Clinton Creek basin snowpack was well above average (140% of average max snow-water equivalent). However, the number of days with water flowing through the spillway was just over the average: 74 days, or 110% of average. On the other hand, the 2013 snowpack was 95% of average but on this year the spillway conveyed flows for 93 days (140% of the average). Another example of spillway flows variability is that in 4 of the 25 years of data no water was conveyed through the spillway pipe (i.e. the reservoir did not fill). These years were 1997 (with a snowpack 132% of average); 1999 (111% of average); 2002 (63%); and 2008 (134%).

The attached plots were prepared to graphically display the frequency and duration of water flowing through the Clinton Gulch Reservoir spillway conduit. The attached **Chart 1** shows, for each year of the 1994-2018 period, the total number of days per year when the Reservoir was spilling (i.e. water flowing through the emergency spillway). The grey bars display the total number of spill days per year, while the orange bars show, for each year, the maximum number of consecutive days with flows through the emergency spillway conduit. During most years, the two numbers are very similar reflecting a typical Colorado reservoir operation scheme: filling during snowmelt season; full and spilling during early summer; releasing from storage during rest of the year. However, this is not always the case. For instance, water rights administration and operational requirements during 2014 and 2015

were such that the reservoir was at or near capacity levels during the winter months, which caused water to flow through the emergency spillway not only during the summer but also in January and February.

Chart 2 shows the same data as **Chart 1** along with plots of the 30-year average and annual maximum snow-water equivalent amounts recorded at the nearby Fremont Pass SNOTEL station. Due to its location, accumulated snow measured at the Fremont Pass SNOTEL site provides a good indication of the status of the snowpack above Clinton Gulch Reservoir. **Chart 2** visually shows that the duration of flows through the emergency spillway is not strongly correlated with the amount of snow accumulated above the reservoir. For example, while the snowpack above Clinton Gulch Reservoir reached above average values in 2006, 2007, and 2008, the duration of flows through the spillway on those years was below average. Another example is 1995, which experienced the highest amount of snow accumulation but had only 9 consecutive days of flow through the emergency spillway.

Chart 3 is a frequency plot of the number of days per year (total and consecutive) when the emergency spillway conduit conveyed reservoir water. For example, the plot shows that over the 25-year data period flows through the emergency spillway did not occur 16% of the time (4 out of 25 years). Similarly, 20% of the time flows lasted less than 31 days. Spillway flows lasted between 90 and 104 days 16% of the time.

The following parameters also demonstrate the variability of duration of flows though the emergency spillway:

<u>Range</u> (difference between smallest and largest values) = 159 days, flows through the spillway have lasted from 0 to 159 days per year.

<u>Mean Number of Days with Flows through Emergency Spillway</u> = 67.1 days per year

<u>Standard Deviation</u> = 46.8 days – The relatively large standard deviation, as compared to the mean, demonstrates how scattered the values are and how much they differ from the mean value.

Lastly, **Chart 4** is a time series of flow rates discharged through the emergency spillway. This figure also displays the variability of emergency spillway flow rates and duration, with peak values ranging from 2 cfs (in year 2000) to 99 cfs (1995).

In conclusion, the analysis of the emergency spillway flow data shows that these flows are very intermittent and not directly related to the hydrology of the Clinton Gulch watershed. For your convenience, I have also enclosed Figures 1 through 4 submitted via email on 4/16/2018; please note that the emergency spillway conduit joins the dam's outlet pipe before discharging into Clinton Canal. We hope this information will be helpful to better understand the hydrology of Clinton Gulch Reservoir flows through its emergency spillway. Please do not hesitate to contact me if you have questions or need additional data.

Chart 1

Clinton Gulch Reservoir - Total number of days per year when water was flowing through the spillway conduit (grey bars), along with maximum number of consecutive days per year when water was conveyed by the spillway (orange).

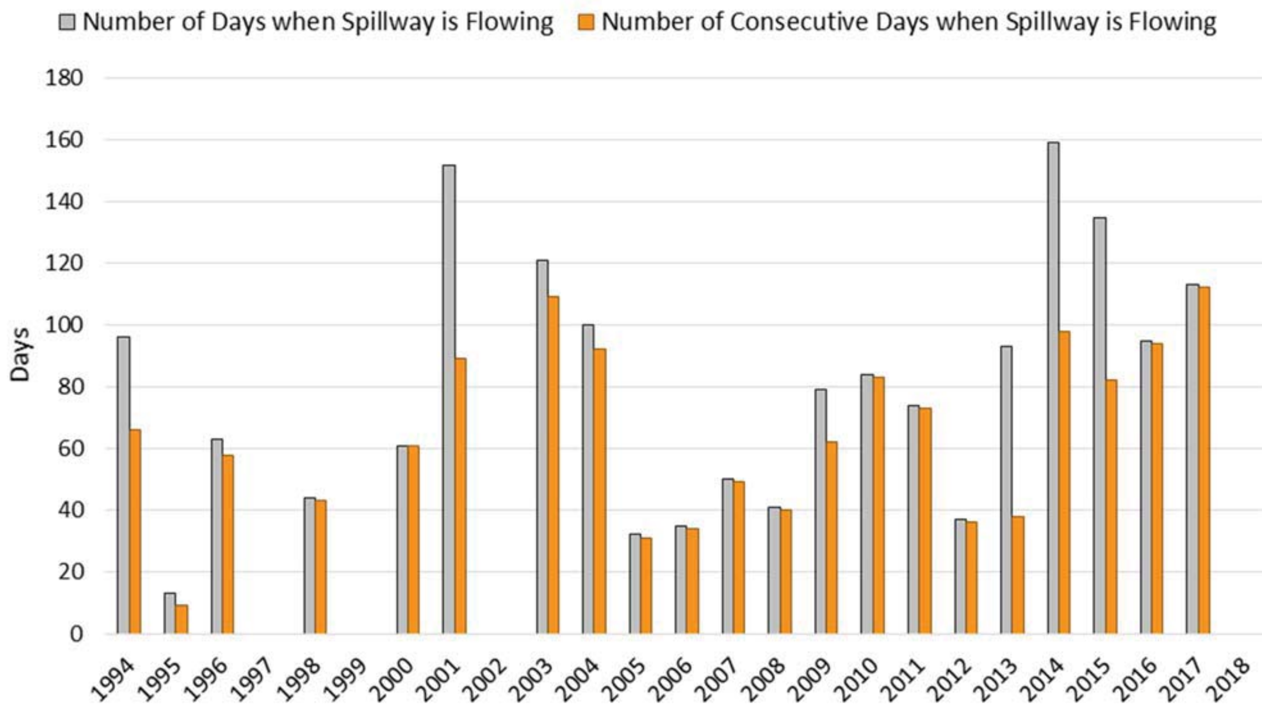


Chart 2

Clinton Gulch Reservoir - Same as Figure 1 but also showing the maximum annual snow-water equivalent as reported by the nearby Fremont Pass SNOTEL station.

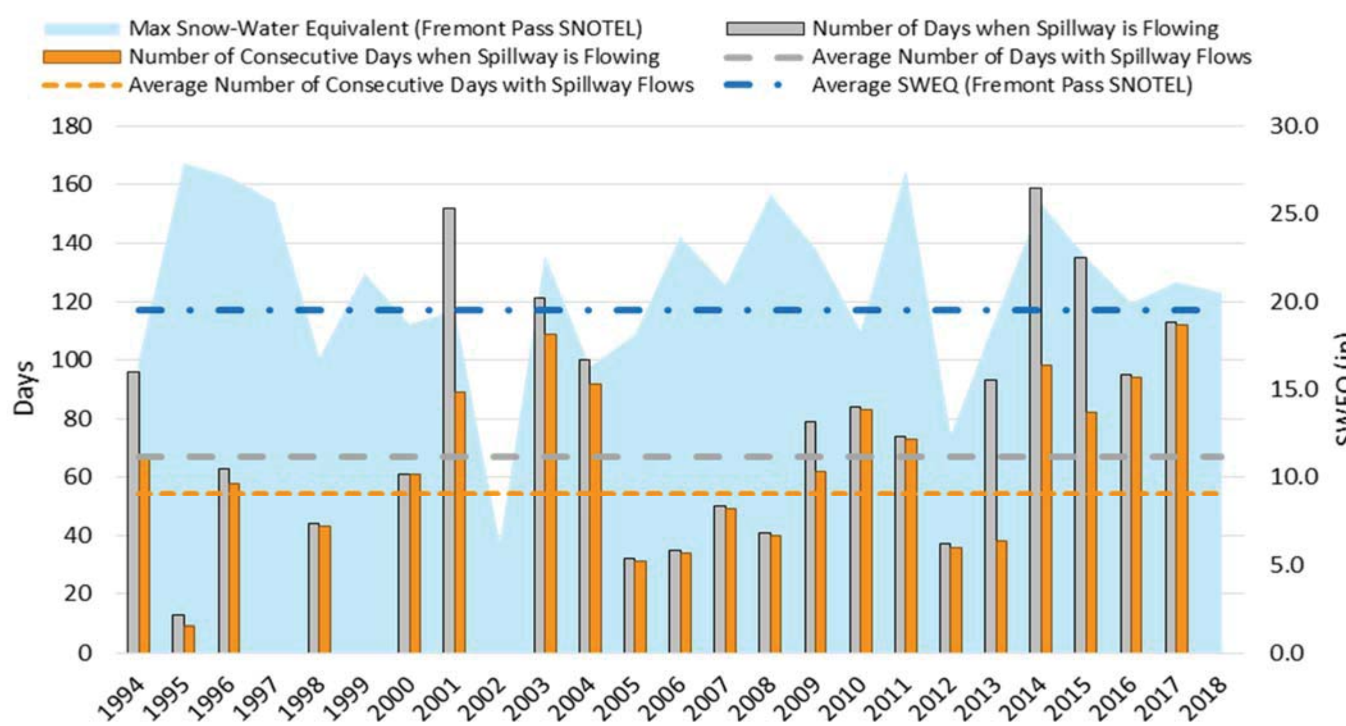


Chart 3

Clinton Gulch Reservoir - Frequency plot of total and consecutive days per year when water is conveyed through the spillway conduit (1994-2018 period).

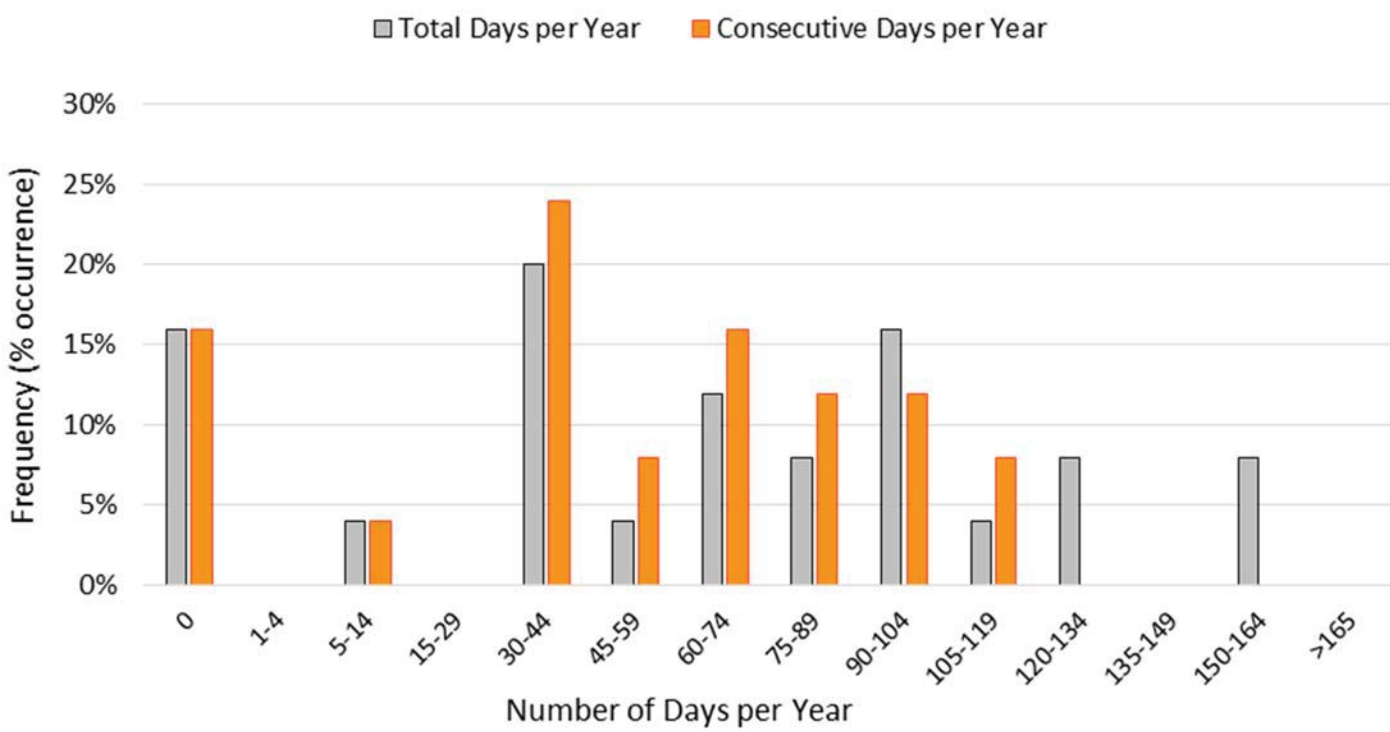
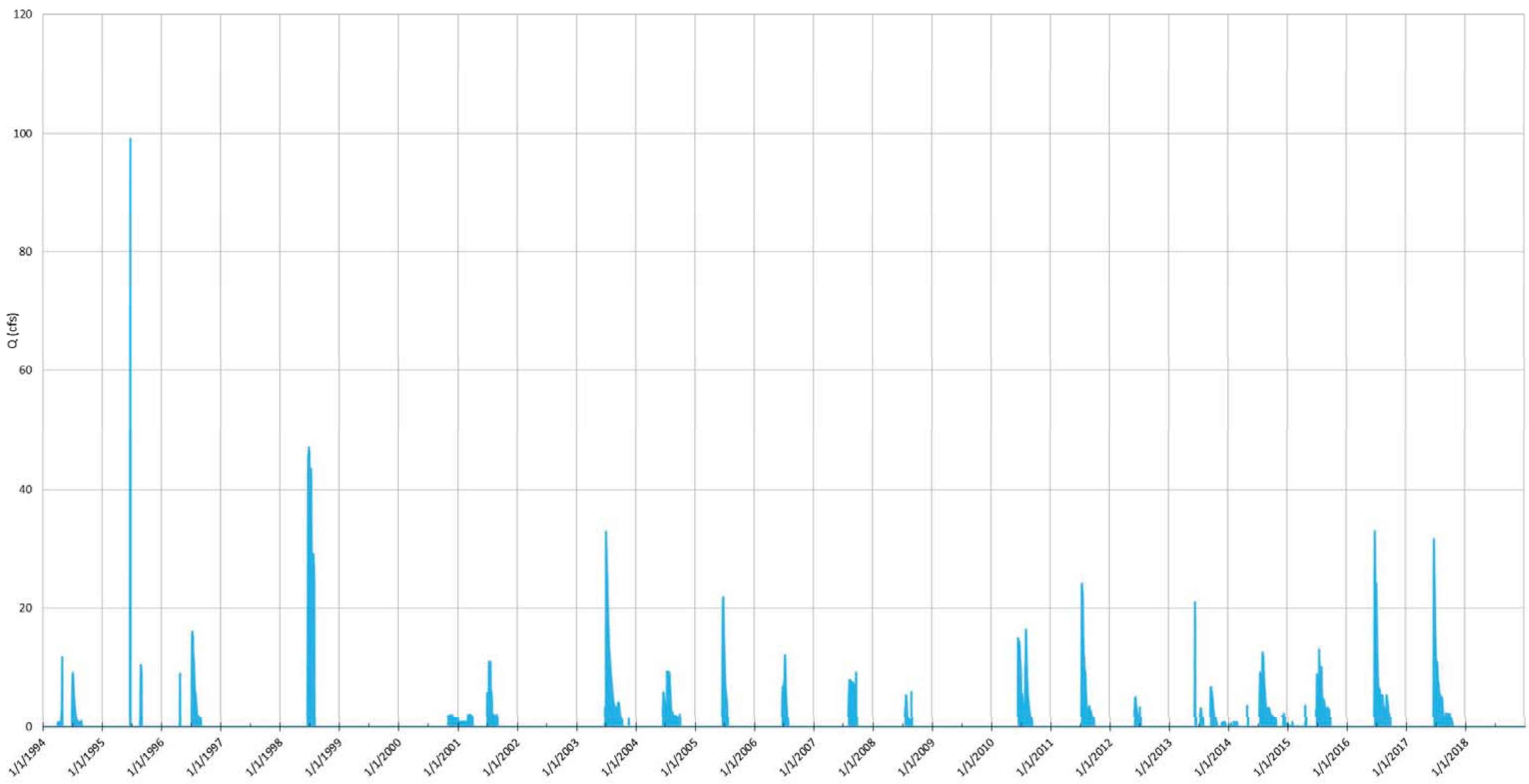


Chart 4

Clinton Gulch Reservoir – Time series of flows through the emergency spillway conduit during the available period of record. Vertical gridlines are displayed at a 1-year interval. No data is available for the August 1999-October 2000 period.



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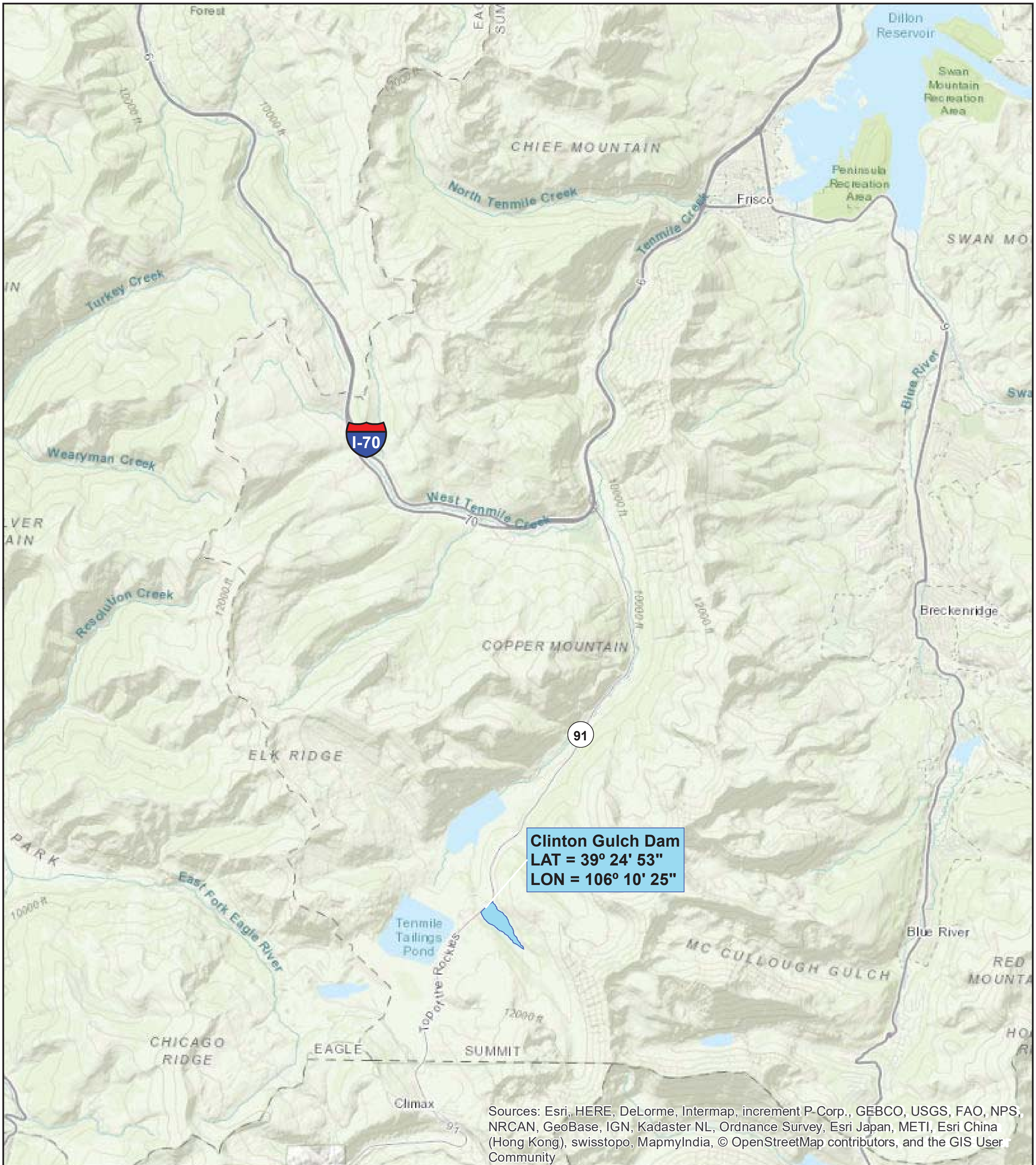

Clinton Gulch Dam

Figure 1: Location Map

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1 in = 2 miles

Miles

0 1 2 4

Date:2016-01-29
File: 423-7.12.3
Drawn: DNR
Approved: RP

Source: NAIP Aerial Photography (2015)

Clinton Gulch Dam
Figure 2: Vicinity Map

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1 in = 2,000 ft

Feet
0 1,000 2,000 4,000

N S E W

Date:2018-08-21
File: 423-7.12.7
Drawn: DNR
Approved: RP

Source: Google Earth Imagery (2015)

Clinton Gulch Dam

Figure 3: Proposed Emergency Spillway Modification
Plan View

1 inch = 60 feet

0 30 60 120 Feet

N W E S

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Date: 2018-04-13
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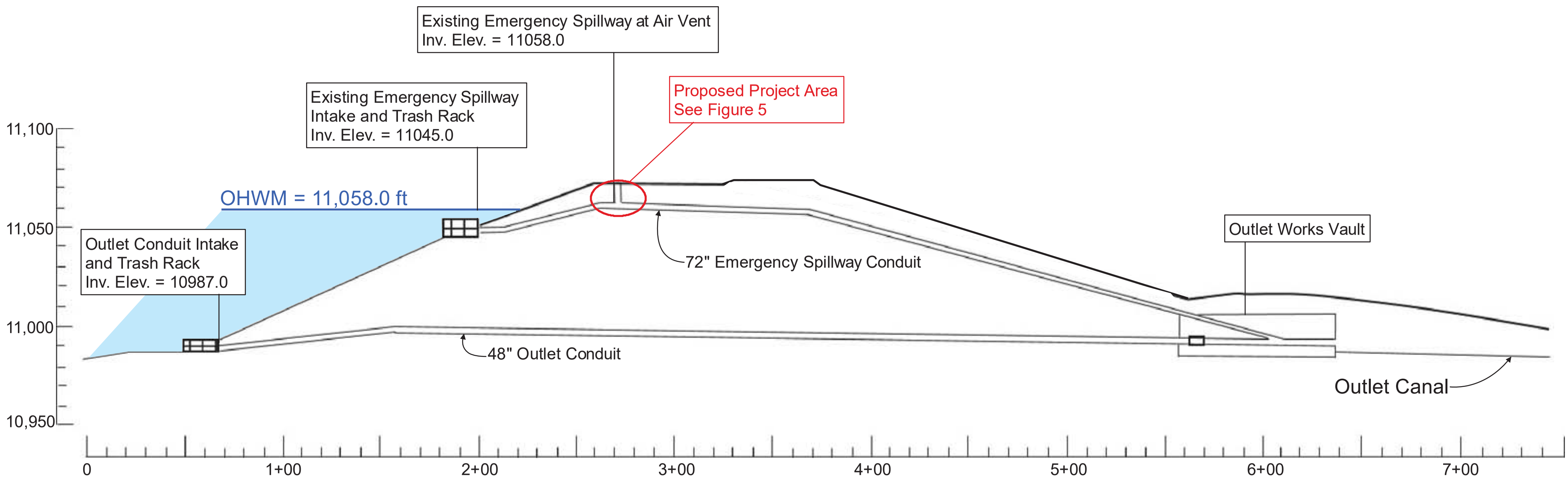

Clinton Gulch Dam

Figure 4: Profiles of Outlet and Emergency Spillway Conduits

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Date: 2018-04-13
File: 423-7.12.3
Drawn: RP
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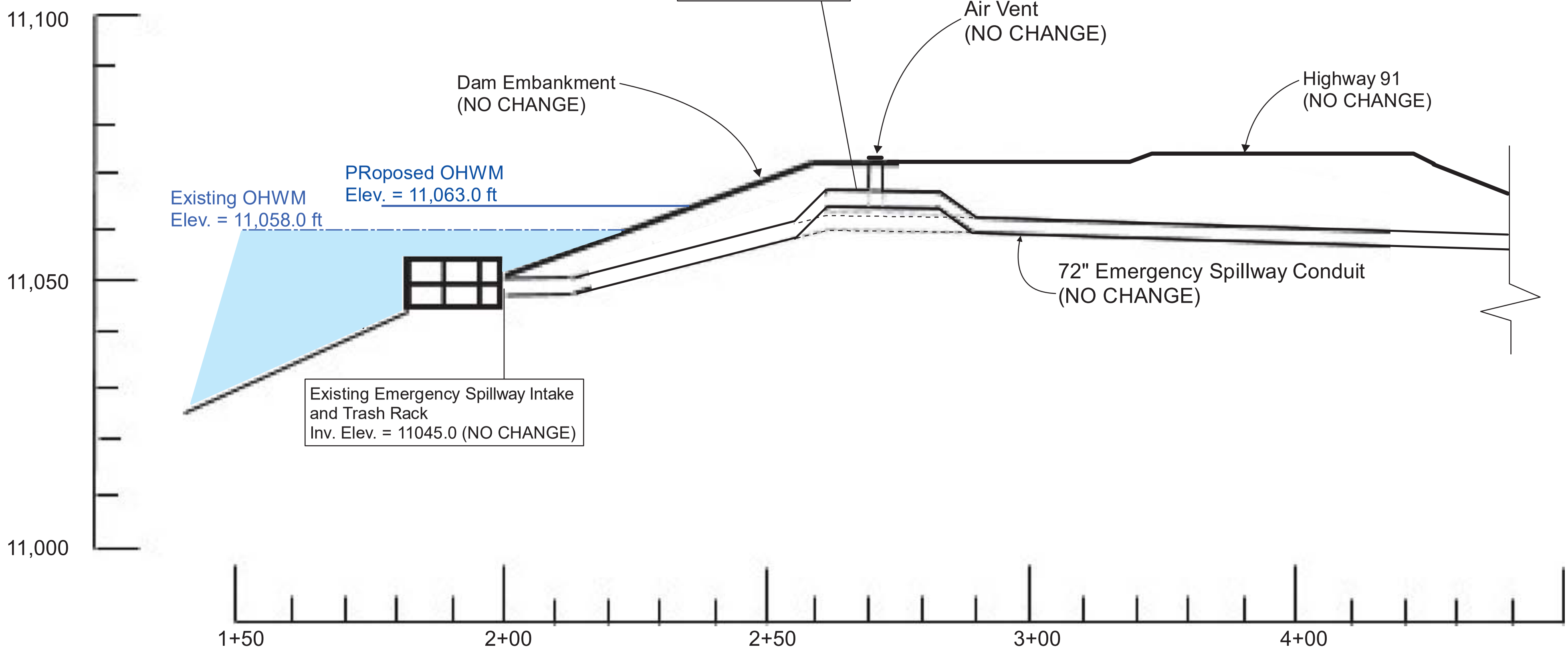
ALL WORK TO BE CONDUCTED WITHIN DAM EMBANKMENT.

NO WORK SHALL OCCUR AT OR BELOW OHWM OR WITHIN ANY WETLANDS.



Clinton Gulch Dam

Figure 5: Proposed Emergency Spillway Modification

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CESPK-RD 21 June 2018

MEMORANDUM FOR RECORD

SUBJECT: Clinton Gulch Reservoir Siphon Replacement SPK-2014-00518

1. ASSISTANCE REQUEST. I received a request for assistance from Matthew Montgomery on 26 April 2018. The specific question Mr. Montgomery requests that I address is to research the regulatory framework to aid in the decision as to whether or not the proposed action requires a permit.

2. REVIEW AREA. The review area is located at Clinton Gulch Dam on Clinton Creek, near 39.415812°, -106.171779°, Summit County, Colorado.

3. PROPOSED ACTION. The proponent proposes to excavate the area of the dam where the spillway's air vent is located and modify a section of the 72-inch emergency spillway, raising the bottom elevation of a section of the emergency spillway conduit by 5 feet and in doing so effectively raise the crest of the reservoir up to 5 feet in elevation (see drawing titled *Figure 5: Proposed Emergency Spillway Modification*, dated 13 April 2018). No work would occur within Clinton Canal, Clinton Creek, the 48" main outlet pipe or the Clinton Gulch Reservoir or adjacent wetlands. Work would only occur within the 72" emergency spillway pipe within the dam.

4. REGULATORY FRAMWORK.

a. Can a pipe be a water of the U.S.?

Yes, a pipe can be a water of the U.S. if it meets the definition at 33 CFR 328.3, such as 328.3(a)(5) (Tributaries), and is not excluded by the waste treatment system provision at 328.3. Outside of the waste treatment system provision at 328.3, there is no explicit exclusion for pipes or any artificial conveyance in the Act or our regulations.

The preamble to the 1986 regulations (51 FR 41217, 13 November 1986) offers some contemporaneous guidance concerning waters that the Corps does not generally consider to be waters of the U.S. This includes two specific types of artificial conveyances non-tidal drainage ditches and irrigation ditches excavated on dry land, but not pipes[1]. The fact that the Clean Water Act at 404(f)(1) (see implementing regulations at 33 CFR 323.4(a)(3)) exempts certain activities within irrigation and drainage ditches suggests that Congress intended that at least some artificial conveyances would be waters of the U.S., otherwise there would be no need for such an exemption for activities that result in discharges to them. Nationwide permit 3 (Maintenance) specifically authorizes removal of accumulated sediments from within existing structures including culverts and water intakes

[1] The situation at issue here does not appear to fit the items listed in the preamble. The emergency spillway conduit is neither an irrigation nor drainage ditch, nor does it appear to be excavated from dry land since the dam impounded an existing stream, Clinton Creek.

structures (82 FR 1984, 6 January 2017), implying that these pipes may, at least under some circumstances, be waters of the U.S. None of the Regulatory Guidance Letters, or the Standard Operating Procedures specifically address the topic of jurisdiction in pipes and I am not aware of any other HQ guidance concerning jurisdiction pipes.

On 19 April 2006, the Sacramento District issued local guidance in the form of an operating draft Regulatory Branch Memorandum (RBM 23) which addressed pipes, among other things.[2] To my knowledge this operating draft was not replaced with any sort of finalized document and it is no longer used (has been placed in the archive folder marked, "Old RBMs and RDMs – No longer in use"). I can find no record of how, when or why this guidance was rescinded but given that its topic was "Existing Jurisdictional Policy" and it was issued just two months before *Rapanos v. U.S.*, 547 US 715 (S.Ct. 19 June 2006), which fundamentally changed the Corps' Clean Water Act jurisdiction, it is likely that the district rescinded RBM 23, or it was tacitly considered superseded, in response to *Rapanos* or the subsequent HQ guidance on jurisdiction. RBM 23 may still have some value in its rationale, when viewed in light of subsequent case law and guidance, and as historical context of how the Corps treated pipes prior to *Rapanos.*

RBM 23 indicates that pipes can be waters of the U.S. if they replace an open channel. It also describes several situations when the Sacramento District did not consider pipes to be tributaries:

> *"(a) Pumps. Pumps can, however create connectivity to [waters of the U.S.], thereby rendering upstream channels jurisdictional.*
>
> *(b) Drain tiles. However, the installation of drain tiles could require a permit if dredge or fill material is discharged in a [water of the U.S.]. Flow from the tiles can also create a [water of the U.S.] whether it is a tributary, a wetland or a pond provided it meets jurisdictional requirements.*
>
> *(c) Underground storm sewer systems which receive water strictly from human developments like roads, subdivisions, commercial development, etc. If the storm sewer system has captured a natural stream which provides much of the flow in the system, then the storm sewer may be considered a jurisdictional tributary….*
>
> *(d) Pipes that are not part of the surface tributary system are not regulated and discharges into them would not require a permit. Examples of this include but are not limited to sanitary sewer pipes and pipes for a municipal water system.*
>
> *(e) Ditches or pipes whose sole source of water is anthropogenic and processes (such as carwashes, greenhouses, factories, etc.)."* (Rosenau, 2006).

[2] Rosenau, A. J. (2006, April 19). Regulatory Branch Memorandum Number 23 (Operating Draft), Existing Jurisdictional Policy. Sacramento, CA, USA: Regulatory Branch, Sacramento District, U.S. Army Corps of Engineers.

Unfortunately, Regulatory Branch Memorandum 23, does not provide much in the way of rationale. It provides very few citations to support its conclusions. It mostly references the District Counsel's response to a Jurisdictional Survey, which was not attached and which I have been unable to find. It does refer to Leslie Salt (without indicating which case—there were several by that point) to support guidance that is not relevant to this situation.[3] RBM 23, however, failed to mention that two of the Leslie Salt cases involve hydrologic connections through artificial conduits. In *Leslie Salt Co. v. Froehlke,* 578 F. 2d 742 (9th Cir. 11 May 1978) tide gates provided a hydrologic connection and in *Leslie Salt Co. v U.S.,* 896 F. 2d 354 (9th Cir. 1990) the 143 acres cell[4] was connected to tidal waters of San Francisco Bay via culverts. In *Leslie Salt Co. v U.S.* (9th Cir. 1990) the court specifically addressed the artifical vs. natural character of the waterbody and decided that the fact that the cells were artifical was irrelivant to the question of Clean Water Act jurisdiction.

Since this question is not addressed by either headquarters or local guidance we next turn to case law. The Supreme Court of the U.S. has not addressed the issue of pipes or other artificial conveyances directly, though there was some discussion in *Rapanos* that supports the conclusion that artificial conveyances can be tributaries. Although Justice Scalia, in the plurality opinion, doubted that a "ditch" can be both a point source and a water of the U.S.[5] he goes on to clarify that it is not whether a channel is artifical or natural that is important, it is whether or not the waterbody is permanently filled with water[6] and for Kennedy in his concurring opinion what maters is not the permanence or its natural or artifical nature but whether it has a significant nexus to, in that case, traditional navigable waters. In the end the Supreme Court remanded the case back to the lower court to determine if the manmade ditches at issue in that case were waters of the U.S. The implication here is that the court had the opportunity to find that the waters in question were not waters of the U.S. because at least some of the waters were man-made ditches but did not, further supporting the conclusion that the artificial or natural character of a water is not relevant to jurisdiction.

I have not found any 10th Circuit cases that deal with jurisdiction in pipes or other artificial conveyances. I did come across one district court case, in the 10th Circuit, *U.S. v. Hamilton*, 952 F. Supp. 2d 1271 (D. Wyo. 2013), in which the defendant had argued that Slick Creek could not be a water of the U.S. because it was a manmade irrigation ditch. The court did not find that argument compelling, citing to *Rapanos*, *Leslie Salt* (1990) and *U.S. v Cundiff*, 55 F.3d 200, 213 (6th Cir. 2009).

---

[3] RBM 23 advises that flow frequency and duration (i.e. perennial, intermittent, and ephemeral) is irrelevant to jurisdiction, guidance that would be altered by subsequent case law and HQ guidance and is therefore not relevant to our review here.

[4] The 9th Circuit also agreed that a seperate crystalization cell that, had no hydrologic connection to the bay, was a water of the U.S. based entirely an other waters call persuant to 33 CFR 328.3(a)(3). While *SWANCC v. USACE, 531 U.S. 159 (S.Ct. 9 January 2001)* may void the (a)(3) determination on the crystalization cell, it would not affect the rest of this ruling concerning the 143 acre cell connected to San Francisco Bay via culverts.

[5] Justice Kennedy, in his concurring opinion disagrees with this point (at 772).

[6] Apparently in Justice Scalia's way of thinking an artificial conveyance, if it held water permanently, would not be called a ditch it would be called a river, canal, moat, etc. (See footnote 7, *Rapanos v. U.S*., 2006).

The issue of artificial conveyances as tributary has been addressed by federal circuit courts other than the 10th Circuit. It is my understanding that while these do not directly establish precedent in the 10th Circuit, it would not be unusual for a circuit to be informed by and even cite to cases in another circuit.[7]

As discussed above, both *Froehlke* (9th Cir. 1978) and *Leslie Salt Co. v. U.S.* (9th Cir. 1990) included connections via artificial structures and conduits and in the 1990 case the court found that the artificial nature of the pond itself was irrelevant to the question of whether or not it was jurisdictional under the Clean Water Act. In *Headwaters, Inc. v. Talent Irrigation Dist.* 243 F. 3d 526 (9th Cir. 2001), the court found that artificial conveyances can be tributaries: “Because the canals receive water from natural streams and lakes, and divert water to streams and creeks, they are connected as tributaries to other waters of the United States” (internal quotation marks removed). This case is particularly relevant to this because the issue was not just the connection through these artificial conveyances but whether or not the artificial conveyance itself was a tributary.

Prior to *Rapanos*, the 4th and 6th Circuits also cited *Headwaters* (See *U.S. v. Deaton*, 332 F. 3d 698, 4th Circuit, 2003; *U.S. v. Rapanos*, 376 F. 3d 629, 6th Circuit, 2004, reversed). *Deaton* may be particularly relevant since the court upheld a tributary connection which passed through culverts as well as ditches. Like *Deaton*, *U.S. v. Eidson*, 108 F. 3d 1336 (11th Cir.1997) involved not only ditches as tributaries but pipes as well. In that case the court found that discharging a pollutant into a storm sewer which connected, via a serries of culverts and ditches, to Tampa Bay was regulated by the Clean Water Act: “There is no reason to suspect that Congress intended to regulate only the natural tributaries of navigable waters. Pollutants are equally harmful to the country’s water quality whether they travel along manmade or natural routs.” (*U.S. v. Eidson,* 1997). I also found a couple of federal district court cases where the courts, citing *Headwaters*, upheald tributary connections that ran through pipes suggesting that courts read *Headwaters* as appling not only to ditches but to other forms of artifical conveyances such as pipes (see *Cal. Sportfishing Prot. Alliance v. Diablo Grande,* 209 F. Supp. 2d 1059, E.D. Cal. 21 March 2002 and *U.S. v. Adam Bros. Farming, Inc.,* 369 F. Supp. 2d 1166, C.D. Cal. 8 December 2003).

Dubois v. USDA, 102 F. 3d 1273 (1st Cir. 1996) provides a counterpoint. In that case the lower court had found that there was no addition of pollutant because water was taken from one water of the U.S. and discharged into another water of the U.S. The 1st Circuit, in reversing the lower court’s ruling, found that water once it enters the a snowmaking system, which it compares to water used an industrial process such as a paper mill, was no longer waters of the U.S.: “…water leaves the domain of nature and is subject to private control rather than purely natural processes…it has lost its status as waters of the United States.” Indirectly, in *Rapanos*, Justice Scalia suggests that certain

[7] In fact the 10th Circuit has cited *Headwaters, Inc. v. Talent Irrigation Dist.* 243 F. 3d 526 (9th Cir. 2001) in *U.S. v. Hubenka*, 438 F. 3d 1026 (10th Circuit, 2006). Although in *Hubenka* the artificial or natural character of the stream was not at issue, but rather whether or not tributaries in general are waters of the U.S.

artificial water systems are “likely” beyond the reach of the Clean Water Act in answering to Justice Kennedy’s and Justice Steven’s criticism[8] of the plurality opinion:

> *“It is also true that highly artificial, manufactured, enclosed conveyance systems—such as ‘sewer treatment plants,’ post, at 772 (opinion of Kennedy, J.), and the ‘mains, pipes, hydrants, machinery, buildings, and other appurtenances and incidents’ of the city of Knoxville’s ‘system of waterworks,’ Knoxville Water Co. v. Knoxville, 200 U.S. 22, 27 (1906), cited post, at 802, n. 12 (opinion of Stevens, J.)—likely do not qualify as ‘waters of the United States,’ despite the fact that they may contain continuous flows of water.”*

After *Rapanos*, the 9th Circuit continues to cite *Headwaters, Inc. v. Talent* (2001), indicating that artificially conveyances (in that case irrigation canals) can be tributaries pursuant to 33 CFR 328.3(a)(5), if they either have relatively permanent flow or have a significant nexus to a traditional navigable water. The 6th Circuit also continues to cite *Headwaters* after *Rapanos* (see *National Cotton Council of America v. USEPA*, 553 F. 3d 927, 6th Circuit, 2009). In *U.S. v. Cundiff*, 555 F. 3d 200 (6th Cir. 2009), a post-*Rapanos* case, the 6th Circuit concluded that the artificial nature of a conveyance is irrelevant to jurisdiction:

> *“Cundiff personally went a long way towards creating a continuous surface connection when he dug or excavated ditches to enhance the acid mine drainage into the creeks and away from his wetlands; in determining whether the Act confers jurisdiction, it does not make a difference whether the channel by which water flows from a wetland to a navigable-in-fact waterway or its tributary was man-made or formed naturally.”*

The fact that courts continue to cite to *Headwaters*, continue to find that the artificial nature of a waterway is irrelevant to jurisdiction and in fact cite to supports the conclusion that *Rapanos* did not invalidate the 9th Circuit’s treatment of artifical conveyenaces, such as pipes and ditches, as tributaries. If anything the *dicta* in *Rapanos* suggests that the artificial nature of a conveyance is not relevant to jurisdiction. (See *Hamilton,* 2013).

b. Can changes to a pipe within a dam be a discharge of fill material?

Yes, the Corps and EPA use an effects based definition of fill material. If the proposed action would either replace any portion of a water of the U.S. with dry land or change the bottom elevation of a water of the U.S. then it is a discharge of fill material.

The Corps and EPA define the term fill material to mean: “…material placed in waters of the United States where the material has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing the bottom elevation of any

[8] The justices are actually arguing about whether or not permanent water is necessary to be a water of the U.S., not about the artificial nature of the conveyance. A majority of justices did not agree that a permanent water was necessary for Clean Water Act jurisdiction. It is interesting that none of the justices cite *Dubois* and instead stretch all the way back to a 1906 case which had nothing to do with Clean Water Act, or even navigable waters in general. The best explanation I can think of is that *Dubois* was focused on the artificial system and not on permanence of water and of course the court is focusing on their own past cases.

portion of a water of the United States (33 CFR 323.2(e)(1)). Fill material includes, “materials used to create any structure or infrastructure in waters of the U.S.” (33 CFR 323.2(e)(2).

5. RECOMENDATIONS.

a. Much of my discussion of the regulatory framework above is based on case law since guidance on the topic of pipes as tributaries is limited. I am not an attorney. My analysis of these cases is not legal advice and focuses on the technical and policy implications rather than legal aspects of those cases. I recommend that you discuss this with your supervisor and decide if Office of Counsel review is appropriate.

b. Since a pipe can be a water of the U.S., as discussed in the regulatory framework above, you will next need to consider if the emergency spillway conduit pipe is a water of the U.S. The 31 March 2016 Clinton Gulch pre-app letter states that the, “Reservoir spills approximately 20% of the time.” Does this refer to both the main spillway and the emergency spillway combined? How often and for what duration does the emergency spillway flow alone flow? Are these flows ordinary? It is quite possible that the main outlet pipe is a water of the U.S. but not the emergency spillway pipe.

c. If you conclude that the emergency spillway conduit pipe is a water of the U.S. then, at least the way the project is currently designed, the action would have the effect of changing the bottom elevation of a water of the U.S., which meets the regulatory definition of a discharge of fill material, triggering the need for a permit.

JAMES ROBB
WETLAND SPECIALIST

CESPK-CO-R Oct 2, 2007

MEMORANDUM FOR RECORD

SUBJECT: Traditional Navigable Water and Navigable In-Fact Determination for the Reach of Tenmile Creek from Dillon Reservoir to Officer's Gulch, in Summit County, Colorado (200701844)

1. ~~I~~ We completed a review of the subject 5 mile reach of Tenmile Creek to determine its navigability via commercial floating craft.

2. This determination is made in accordance to Appendix D of the Rapanos Guidance.

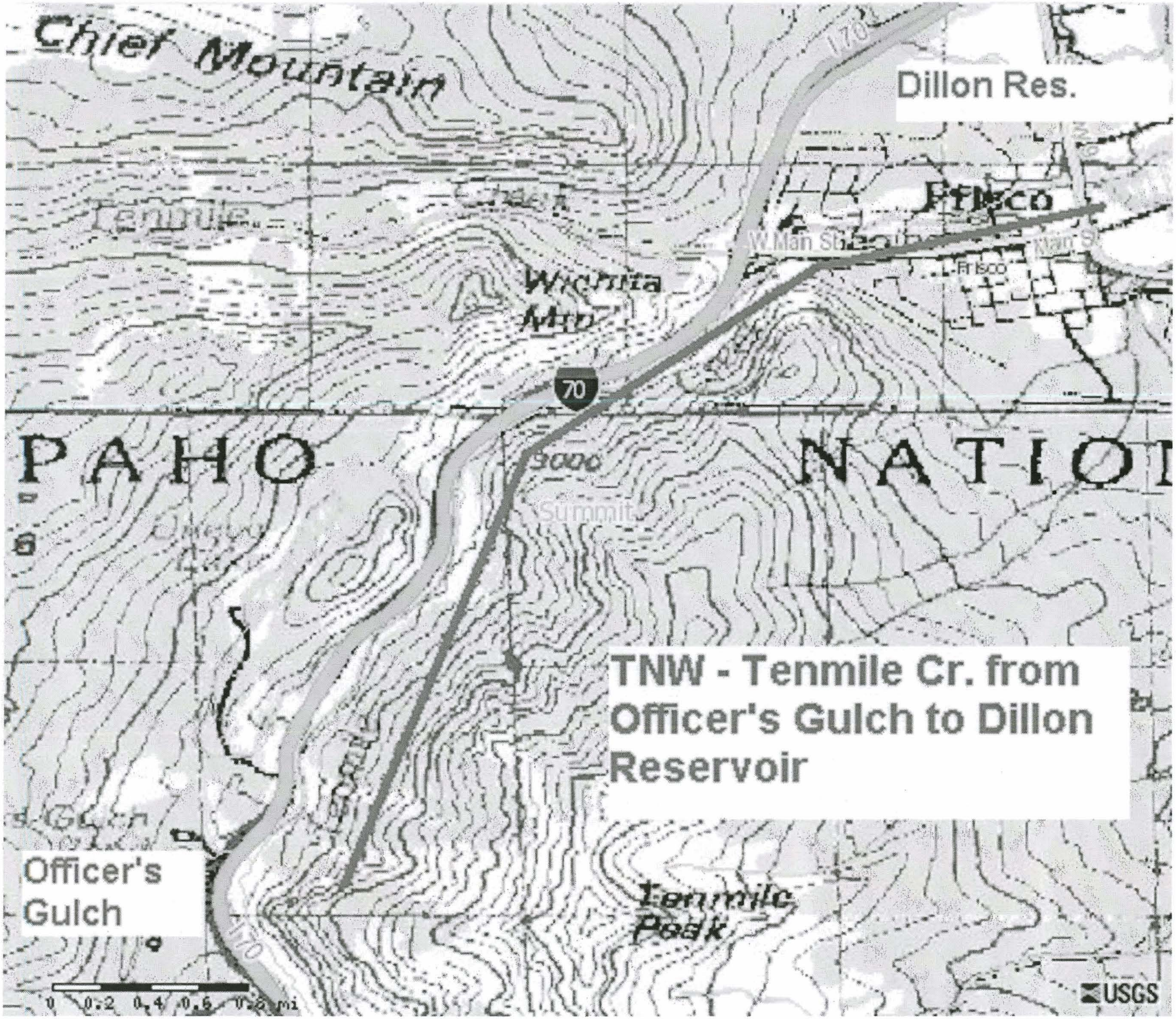
3. Tenmile Creek is currently a recreational use area for both kayakers and rafters. It is managed by the U.S. Forest Service Dillon Ranger District Field Office where the river flows through public land. Permits are required for commercial use of recreation on the river through areas managed by the U.S. Forest Service. This determination is limited to commercial navigation (navigability) through public lands, and private areas where permission has been obtained, and where commerce occurs with out-of-state clients (interstate commerce nexus).

4. The attached maps indicate the location of the traditional navigable waters in Grand and Summit counties of Colorado, including the subject reach of Tenmile Creek. An attached photo shows Tenmile Creek at Officer's Gulch during very low flows (September).

5. List of Reference Material:
USFS Dillon Ranger District – 970.468.5400
Colorado River Outfitter's Association – 970.390.8071, croajks@yahoo.com
Kodi Rafting – 970.668.1548
Performance Tours Rafting – 970.453.0661, 1-800.328.7238, raft@performancetours.com
Location map.
Topographic map
Photo.

Nick Mezei of the Frisco Regulatory Office is the point-of-contact for this determination. He can be reached by phone at 970.668.9676.

Michael Jewell
Chief, Regulatory Branch
Sacramento District



Chief Mountain
Dillon Res.
Frisco
W Main St
Main St
Wichita Mtn
70
PAHO NATIO
9000
Summit
TNW - Tenmile Cr. from Officer's Gulch to Dillon Reservoir
Officer's Gulch
Tenmile Peak
170
0 0.2 0.4 0.6 0.8 mi
USGS

Resource Engineering, Inc.
909 Colorado Avenue
Glenwood Springs, CO 81601
(970)-945-6777 Voice
www.resource-eng.com

Memorandum

To: Matt Montgomery

From: Raul Passerini

CC: Mike Claffey

Date: August 21, 2018

Re: Clinton Gulch Reservoir – Historical Spillway Flows

Matt,

During a recent phone communication, you asked us to disaggregate the monthly data of spillway flows to supplement the narrative description, tables and charts submitted to you via email on 4/8/2016. As discussed, flows through the emergency spillway vary from year to year in amount and duration. The Reservoir Operating Criteria requires to lower the reservoir level by releasing storage through the outlet during the early spring weeks in preparation for the snowmelt season. This is because the emergency spillway discharges into the Clinton Canal which has a flow capacity of about 80 cubic feet per second (cfs). Therefore, by lowering the reservoir level early in the snowmelt season the Reservoir Operating Criteria seeks to ensure that enough capacity is available to store a significant portion of the snowmelt runoff volume and limit the rate of discharge into the Clinton Canal to safe levels. In other words, because flows through the spillway conduit cannot be controlled, the purpose of the Reservoir Operating Criteria is to effectively reduce the utilization of the emergency spillway and minimize the probability that high flow rates are conveyed through the spillway conduit.

Although variable year to year, flows through the emergency spillway typically occur during the late summer weeks, approximately between late-June through mid-September. The duration and magnitude of these flows depend not only on the snowpack accumulated in the Clinton Creek basin above the reservoir, but also on water rights administration, releases from storage required by the shareholders, and reservoir operation and maintenance projects. For example, in 2011 the Clinton Creek basin snowpack was well above average (140% of average max snow-water equivalent). However, the number of days with water flowing through the spillway was just over the average: 74 days, or 110% of average. On the other hand, the 2013 snowpack was 95% of average but on this year the spillway conveyed flows for 93 days (140% of the average). Another example of spillway flows variability is that in 4 of the 25 years of data no water was conveyed through the spillway pipe (i.e. the reservoir did not fill). These years were 1997 (with a snowpack 132% of average); 1999 (111% of average); 2002 (63%); and 2008 (134%).

The attached plots were prepared to graphically display the frequency and duration of water flowing through the Clinton Gulch Reservoir spillway conduit. The attached **Chart 1** shows, for each year of the 1994-2018 period, the total number of days per year when the Reservoir was spilling (i.e. water flowing through the emergency spillway). The grey bars display the total number of spill days per year, while the orange bars show, for each year, the maximum number of consecutive days with flows through the emergency spillway conduit. During most years, the two numbers are very similar reflecting a typical Colorado reservoir operation scheme: filling during snowmelt season; full and spilling during early summer; releasing from storage during rest of the year. However, this is not always the case. For instance, water rights administration and operational requirements during 2014 and 2015

were such that the reservoir was at or near capacity levels during the winter months, which caused water to flow through the emergency spillway not only during the summer but also in January and February.

Chart 2 shows the same data as **Chart 1** along with plots of the 30-year average and annual maximum snow-water equivalent amounts recorded at the nearby Fremont Pass SNOTEL station. Due to its location, accumulated snow measured at the Fremont Pass SNOTEL site provides a good indication of the status of the snowpack above Clinton Gulch Reservoir. **Chart 2** visually shows that the duration of flows through the emergency spillway is not strongly correlated with the amount of snow accumulated above the reservoir. For example, while the snowpack above Clinton Gulch Reservoir reached above average values in 2006, 2007, and 2008, the duration of flows through the spillway on those years was below average. Another example is 1995, which experienced the highest amount of snow accumulation but had only 9 consecutive days of flow through the emergency spillway.

Chart 3 is a frequency plot of the number of days per year (total and consecutive) when the emergency spillway conduit conveyed reservoir water. For example, the plot shows that over the 25-year data period flows through the emergency spillway did not occur 16% of the time (4 out of 25 years). Similarly, 20% of the time flows lasted less than 31 days. Spillway flows lasted between 90 and 104 days 16% of the time.

The following parameters also demonstrate the variability of duration of flows though the emergency spillway:

<u>Range</u> (difference between smallest and largest values) = 159 days, flows through the spillway have lasted from 0 to 159 days per year.

<u>Mean Number of Days with Flows through Emergency Spillway</u> = 67.1 days per year

<u>Standard Deviation</u> = 46.8 days – The relatively large standard deviation, as compared to the mean, demonstrates how scattered the values are and how much they differ from the mean value.

Lastly, **Chart 4** is a time series of flow rates discharged through the emergency spillway. This figure also displays the variability of emergency spillway flow rates and duration, with peak values ranging from 2 cfs (in year 2000) to 99 cfs (1995).

In conclusion, the analysis of the emergency spillway flow data shows that these flows are very intermittent and not directly related to the hydrology of the Clinton Gulch watershed. For your convenience, I have also enclosed Figures 1 through 4 submitted via email on 4/16/2018; please note that the emergency spillway conduit joins the dam's outlet pipe before discharging into Clinton Canal. We hope this information will be helpful to better understand the hydrology of Clinton Gulch Reservoir flows through its emergency spillway. Please do not hesitate to contact me if you have questions or need additional data.

Chart 1

Clinton Gulch Reservoir - Total number of days per year when water was flowing through the spillway conduit (grey bars), along with maximum number of consecutive days per year when water was conveyed by the spillway (orange).

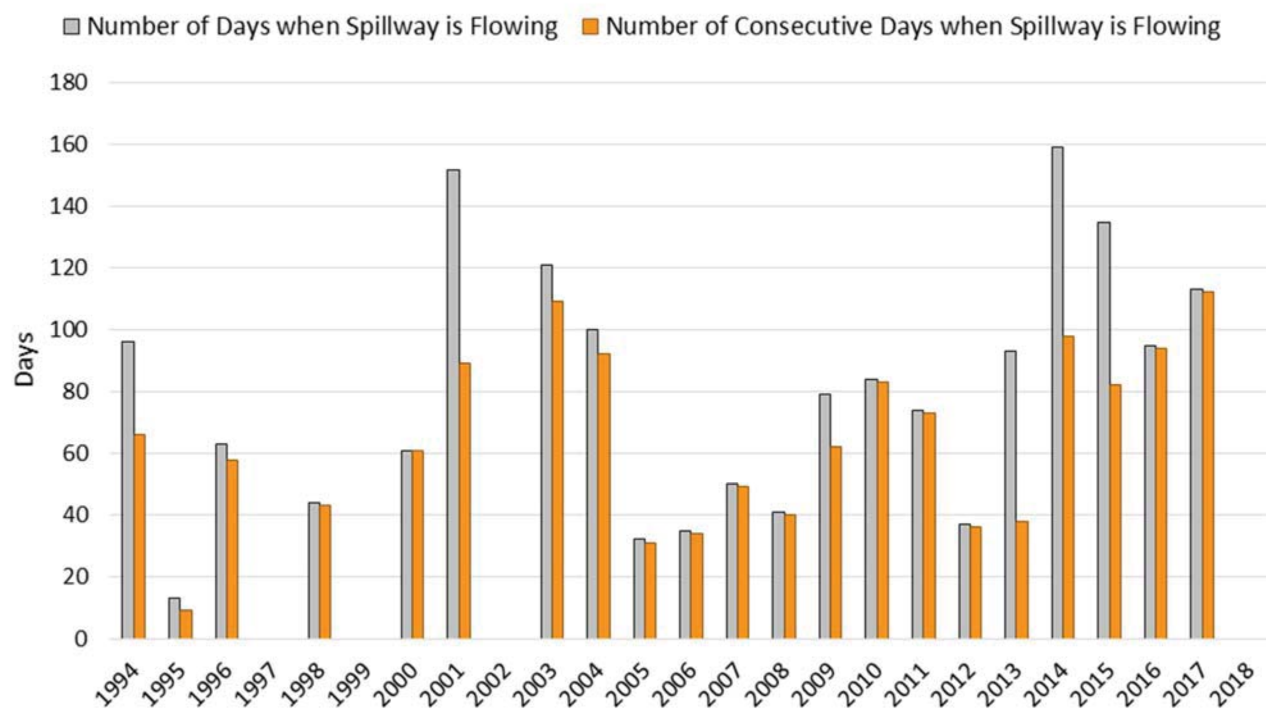


Chart 2

Clinton Gulch Reservoir - Same as Figure 1 but also showing the maximum annual snow-water equivalent as reported by the nearby Fremont Pass SNOTEL station.

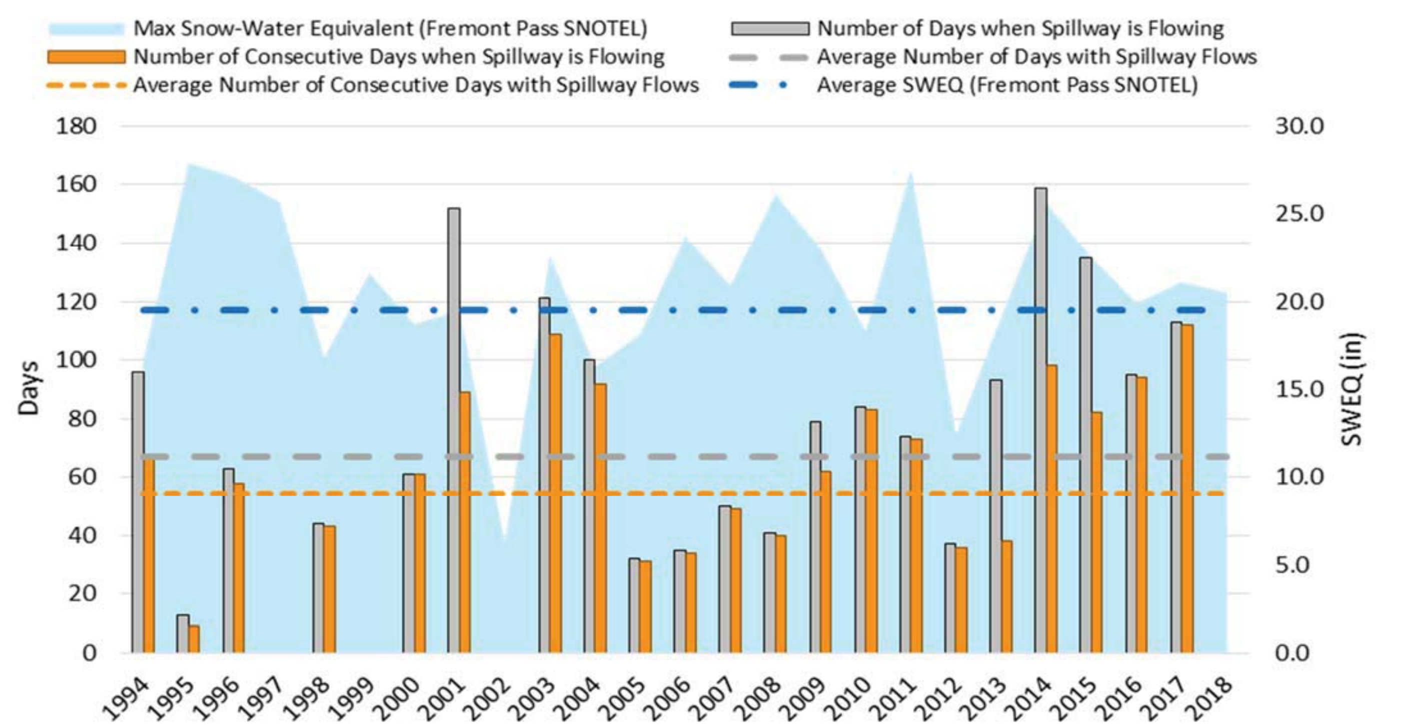


Chart 3

Clinton Gulch Reservoir - Frequency plot of total and consecutive days per year when water is conveyed through the spillway conduit (1994-2018 period).

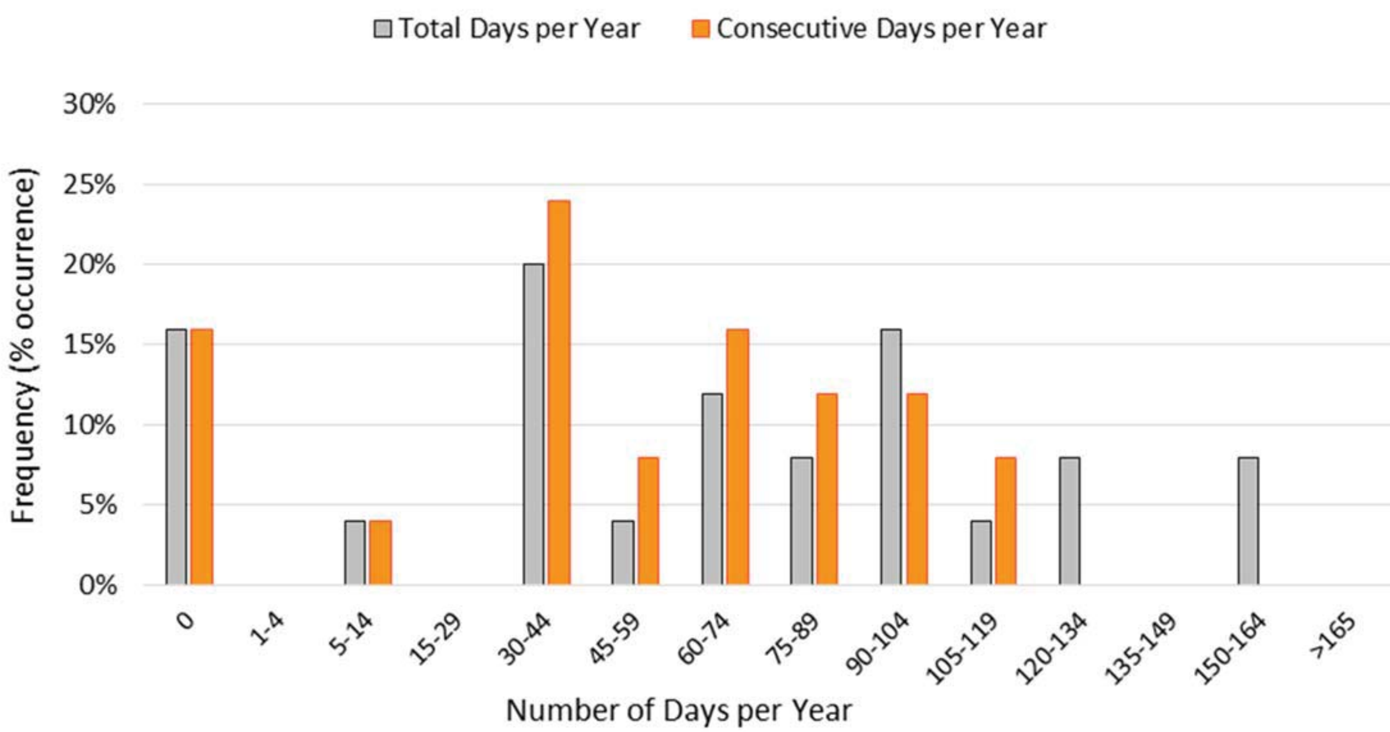
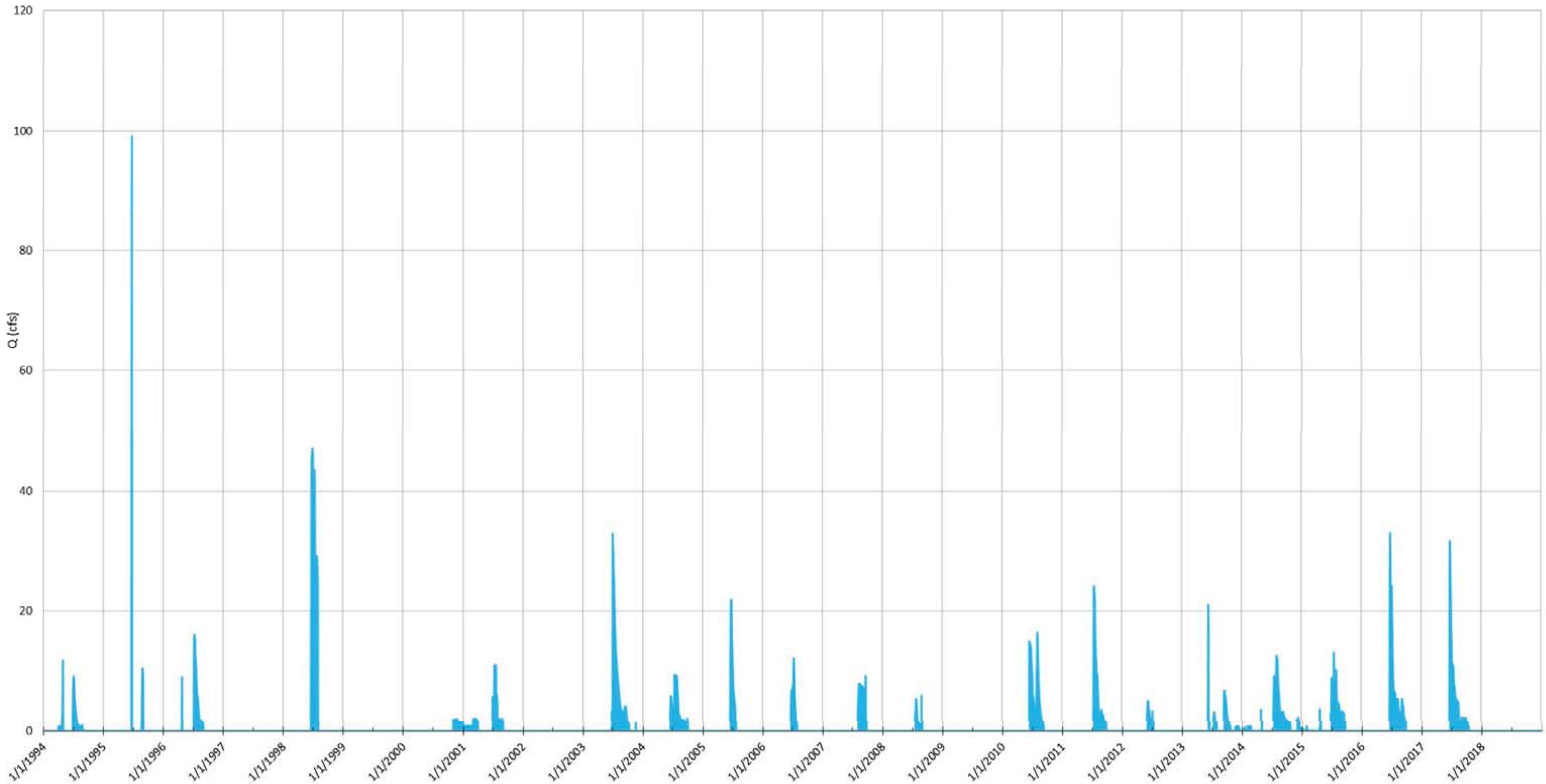
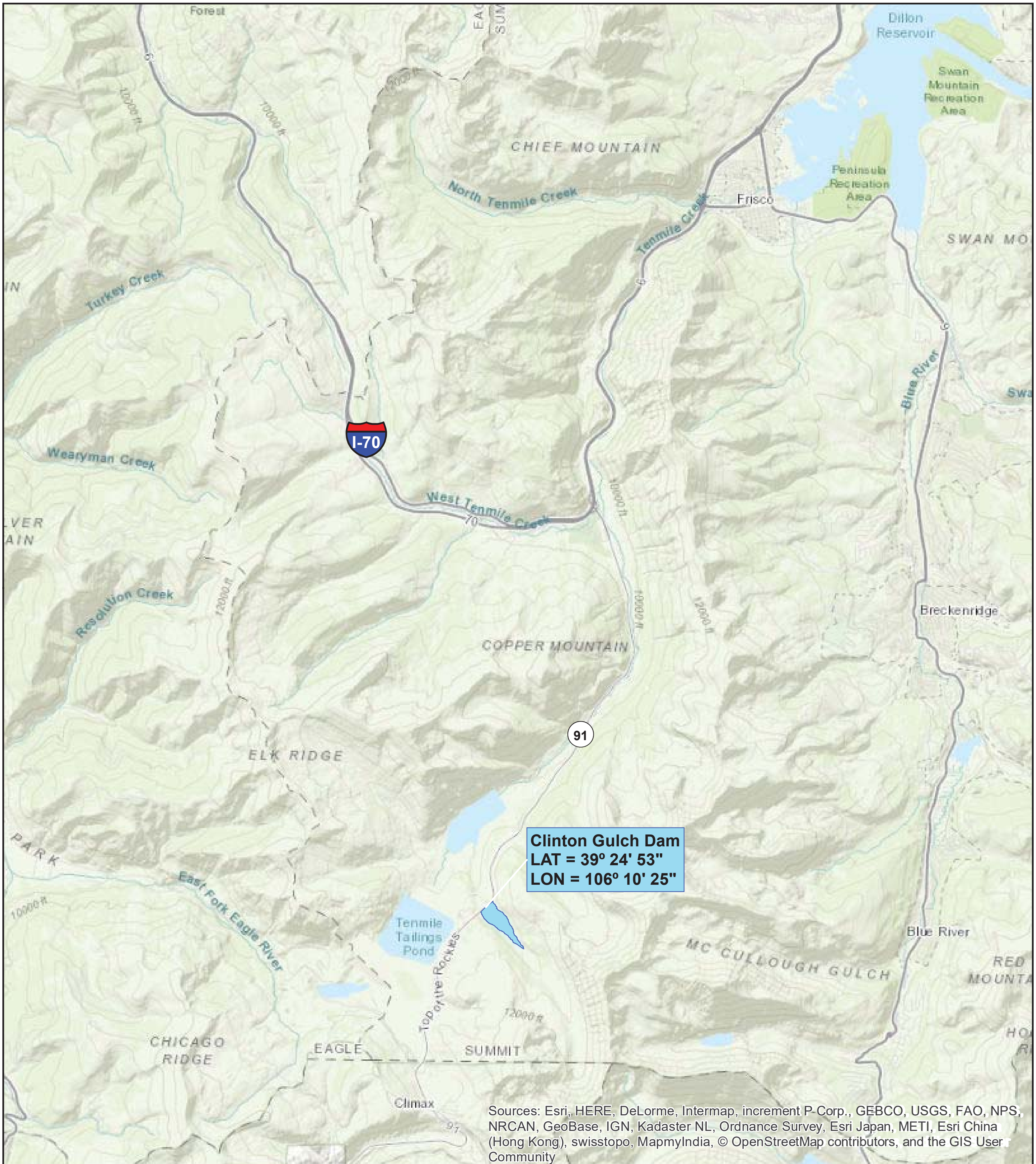


Chart 4

Clinton Gulch Reservoir – Time series of flows through the emergency spillway conduit during the available period of record. Vertical gridlines are displayed at a 1-year interval. No data is available for the August 1999-October 2000 period.





Clinton Gulch Dam

Figure 1: Location Map

RESOURCE ENGINEERING, INC.
909 Colorado Avenue / Glenwood Springs, CO 81601
Voice: (970) 945-6777 - Web: www.resource-eng.com

1 in = 2 miles

Miles
0 1 2 4

N W E S

Date:2016-01-29
File: 423-7.12.3
Drawn: DNR
Approved: RP

Source: NAIP Aerial Photography (2015)

Clinton Gulch Dam

Figure 2: Vicinity Map

RESOURCE ENGINEERING, INC.
909 Colorado Avenue / Glenwood Springs, CO 81601
Voice: (970) 945-6777 - Web: www.resource-eng.com

1 in = 2,000 ft

Feet
0 1,000 2,000 4,000

N W E S

Date:2018-08-21
File: 423-7.12.7
Drawn: DNR
Approved: RP

Source: Google Earth Imagery (2015)

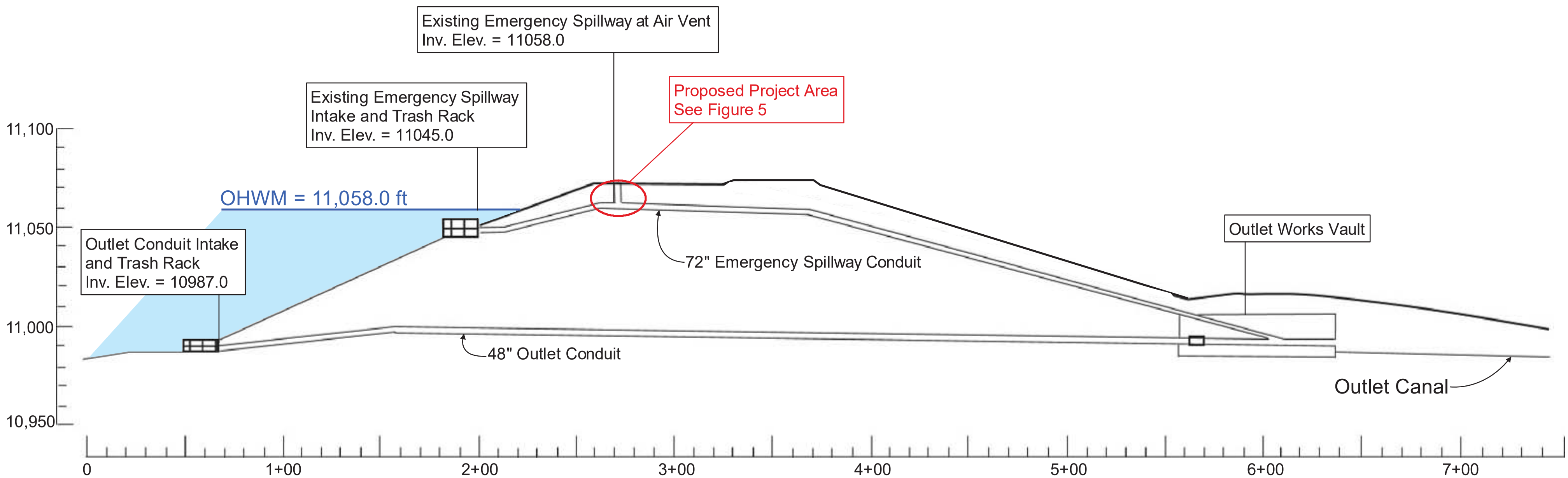
Clinton Gulch Dam
Figure 3: Proposed Emergency Spillway Modification
Plan View

1 inch = 60 feet
0 30 60 120 Feet

N W E S

RESOURCE ENGINEERING, INC.
909 Colorado Avenue / Glenwood Springs, CO 81601
Voice: (970) 945-6777 - Web: www.resource-eng.com

Date: 2018-04-13
File: 423-7.12.3
Drawn: RP
Approved:



Clinton Gulch Dam

Figure 4: Profiles of Outlet and Emergency Spillway Conduits

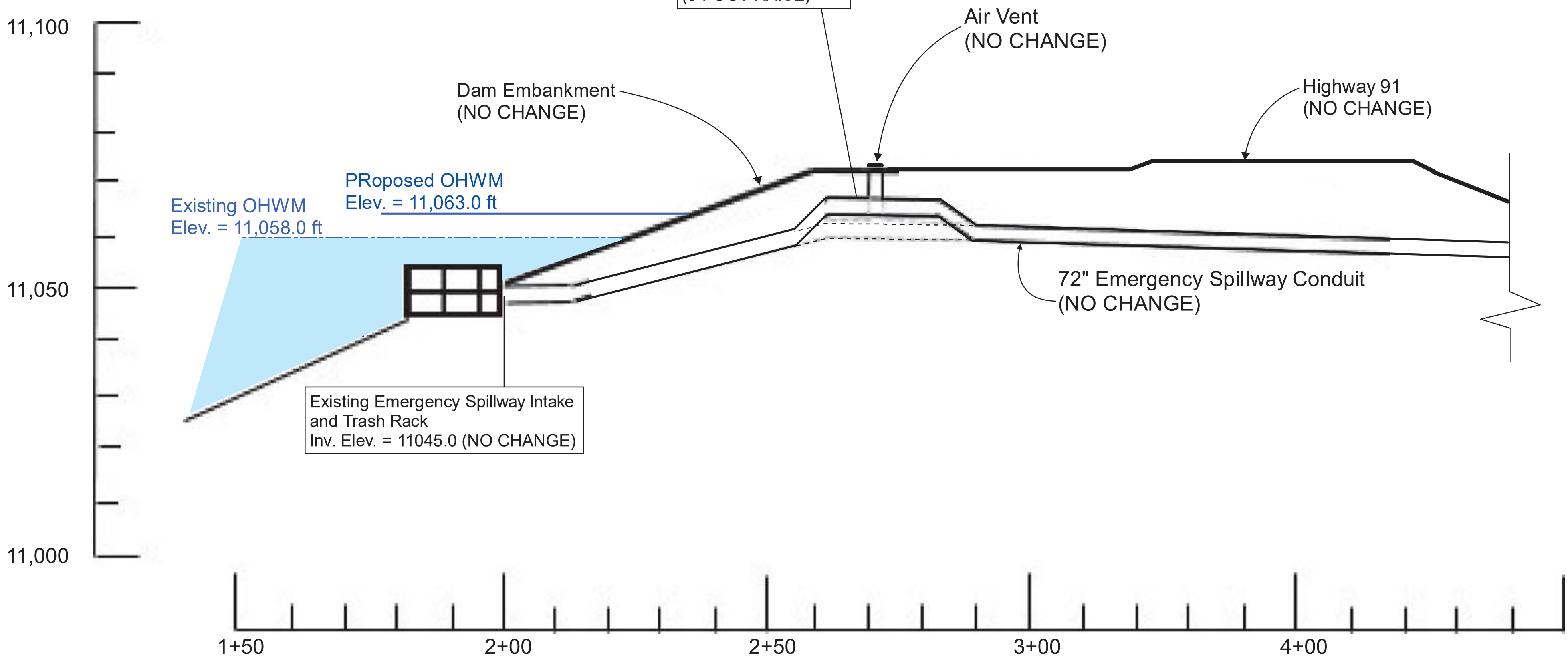
NOT TO SCALE - DIMENSIONS ARE APPROXIMATE

RESOURCE
ENGINEERING, INC.
909 Colorado Avenue / Glenwood Springs, CO 81601
Voice: (970) 945-6777 - Web: www.resource-eng.com

Date: 2018-04-13
File: 423-7.12.3
Drawn: RP
Approved:

ALL WORK TO BE CONDUCTED WITHIN DAM EMBANKMENT.

NO WORK SHALL OCCUR AT OR BELOW OHWM OR WITHIN ANY WETLANDS.



Clinton Gulch Dam

Figure 5: Proposed Emergency Spillway Modification

NOT TO SCALE - DIMENSIONS ARE APPROXIMATE

RESOURCE
ENGINEERING, INC.
909 Colorado Avenue / Glenwood Springs, CO 81601
Voice: (970) 945-6777 - Web: www.resource-eng.com

Date: 2018-04-13
File: 423-7.12.3
Drawn: RP
Approved:

CESPK-CO-R Oct 2, 2007

MEMORANDUM FOR RECORD

SUBJECT: Traditional Navigable Water and Navigable In-Fact Determination for the Reach of Tenmile Creek from Dillon Reservoir to Officer's Gulch, in Summit County, Colorado (200701844)

1. We completed a review of the subject 5 mile reach of Tenmile Creek to determine its navigability via commercial floating craft.

2. This determination is made in accordance to Appendix D of the Rapanos Guidance.

3. Tenmile Creek is currently a recreational use area for both kayakers and rafters. It is managed by the U.S. Forest Service Dillon Ranger District Field Office where the river flows through public land. Permits are required for commercial use of recreation on the river through areas managed by the U.S. Forest Service. This determination is limited to commercial navigation (navigability) through public lands, and private areas where permission has been obtained, and where commerce occurs with out-of-state clients (interstate commerce nexus).

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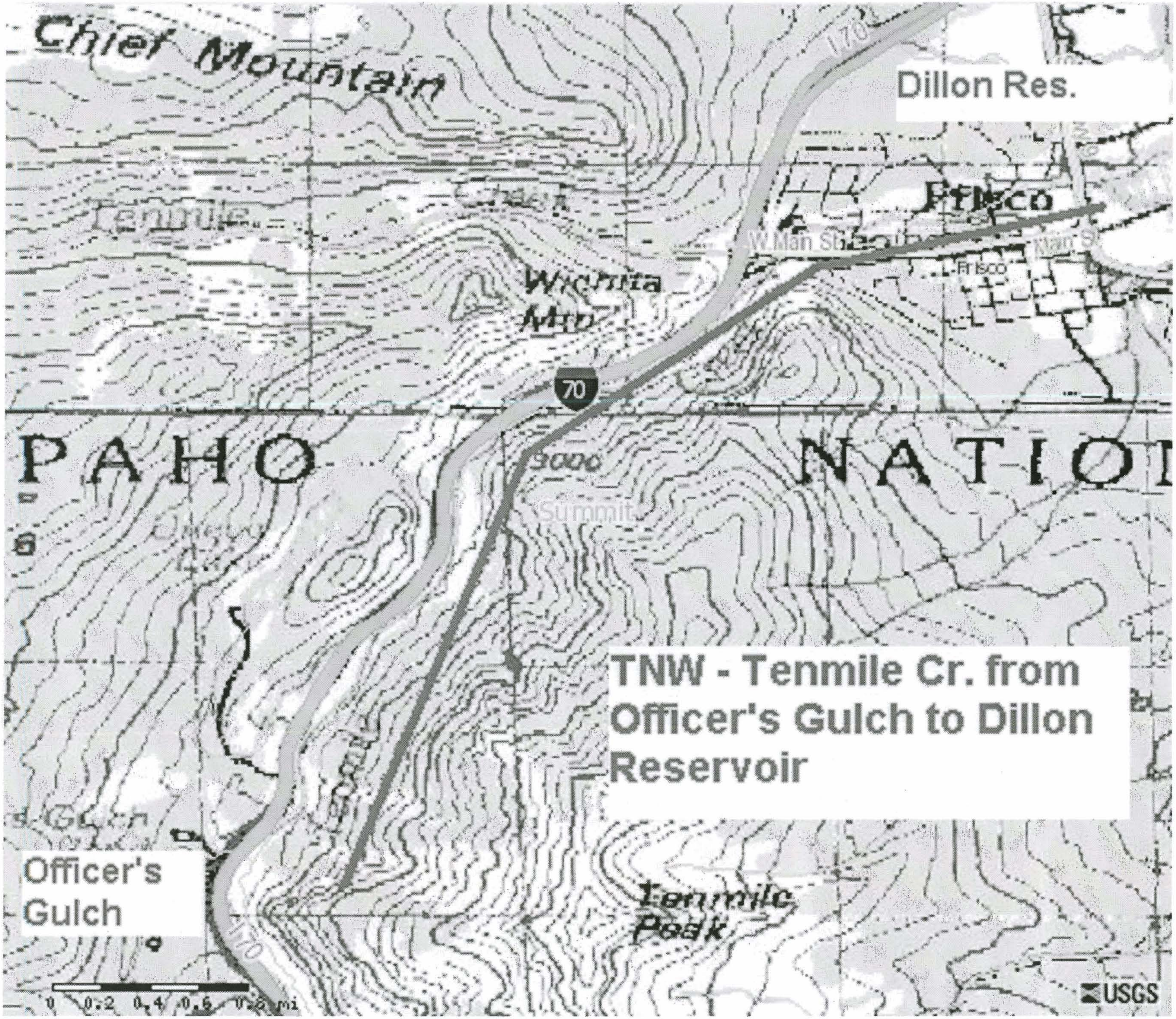
Location map.
Topographic map
Photo.

Nick Mezei of the Frisco Regulatory Office is the point-of-contact for this determination. He can be reached by phone at 970.668.9676.

Michael Jewell
Chief, Regulatory Branch
Sacramento District


Chief Mountain
Dillon Res.
Frisco
W Main St
Main St
Wichita Mtn
70
PAHO NATIO
9000
Summit
TNW - Tenmile Cr. from Officer's Gulch to Dillon Reservoir
Officer's Gulch
Tenmile Peak
0 0.2 0.4 0.6 0.8 mi
USGS