County of Lassen
Department of Planning and Building Services
• Planning • Building • Environmental Health • Code Enforcement • Surveyor • Surface Mining

Maurice L. Anderson, *Director*
707 Nevada Street, Suite 5
Susanville, CA 96130-3912
Phone: 530 251-8269
Fax: 530 251-8373
email: landuse@co.lassen.ca.us
website: www.co.lassen.ca.us

Zoning & Building
Inspection Requests
Phone: 530 257-5263

Environmental Health
Messages: 530 251-8528
email: EHE@co.lassen.ca.us

April 5, 2023

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Applicant/Owner: Geofortis Minerals, LLC

File No.: Initial Study #2021-006

Project: Proposal for a Use Permit and Reclamation Plan to establish an 83-acre pozzolan materials year-round mining operation, with batch mining and screening operations on a seasonal schedule and loading and daily hauling operations on a year-round schedule. Approximately 5 acres would be on Public Lands while the remaining 78 acres is split-estate land where the Federal Government retains the mineral rights administered by the BLM.

Zoning: A-1 (General Agriculture District)

Location: The Project site is located in Lassen County approximately 5.5 miles north of the intersection of US Highway (Hwy) 395 and California State Route 70.

A.P.N.: 145-030-016-000; 145-050-004-000; 145-050-012-000; 145-030-017-000

Staff Contact: Cortney Flather, Natural Resources Coordinator

Pursuant to the California Environmental Quality Act, Lassen County is the Lead Agency for the project identified above and is preparing a Mitigated Negative Declaration stating that there is no substantial evidence in the record, as currently filed, which indicated that the proposed project (considering proposed mitigation measures) may have a significant effect on the environment.

The public review period for this project has been established from April 6, 2023 to May 6, 2023. Any comments you may have regarding this proposed Mitigated Negative Declaration must be submitted to the Lassen County Department of Planning and Building Services prior to the end of the review period. The proposed Mitigated Negative Declaration and Initial Study for

this project are available for inspection at the Department of Planning and Building Services at the address given in the header above, as well as online at: https://www.lassencounty.org/dept/planning-and-building-services/environmental-documents-noticing-and-attachments.

If you have any questions concerning the project, please contact Cortney Flather, Natural Resources Coordinator, at (530) 251-8269 or cflather@co.lassen.ca.us.

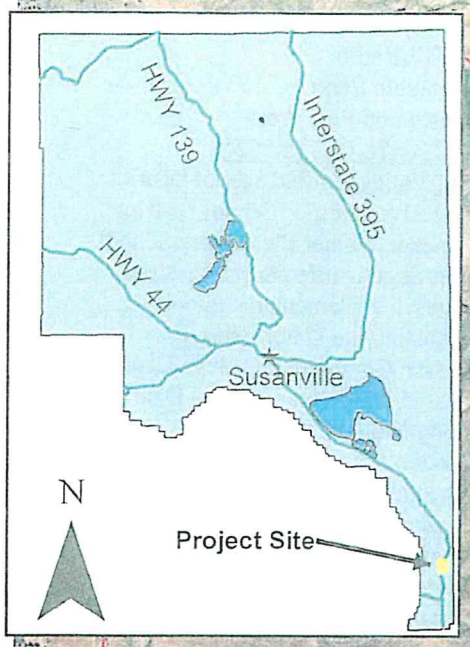
Sincerely,

For, Maurice L. Anderson,
Environmental Review Officer
MLA:clf

Distribution: Geofortis Minerals LLC (applicant); Avalanche Funding (surface estate owner); Michael Sherman (Mitchell Chadwick); County Administrative Officer; County Fire Warden/CAL FIRE; C. Environmental Health Department; Lassen Co. Fish & Game Commission; Co. Public Works; Co. Public Works/Road Siv; Co. Public Works/Transportation; Lahontan Regional Water Quality Control Board; Department of Conservation Division of Mine Reclamation; Department of Parks and Recreation; Department of Fish and Wildlife (Redding); Caltrans District 2; State Clearinghouse; Bureau of Land Management (Carson City); Lassen National Forest; U.S. Army Corp of Engineers; Susanville Indian Rancheria; Honey Lake Maidu; Washoe Tribe of Nevada and California; Native American Heritage Commission; Co. Air Pollution Control Officer; Supervisor Ingram; Plumas-Sierra Rural Electric Cooperative

S:\PLA\Planning\2018\MP #2018-002, Geofortis\2021 updated applications\Initial Study #2021-006\NOI_Mitigated Negative Declaration

Geofortis Pozzolan Mine Vicinity Map



Susanville:
55 miles

N

Project Site

Long Valley Creek

Scott Rd.

395

Nevada

APN 145-050-004-000
APN 145-030-017-000
APN 145-050-012-000
APN 145-030-016-000
roads

0 0.5 1 2 Miles

70

Hallelujah Junction

Lassen County makes no guarantee of the accuracy or completeness of this information or data and assumes no liability for its use or misuse. This product is intended to be used for planning purposes only and does not have the force and effect of law, rule, or regulation. All GIS data should be verified before it is relied upon for property or project planning.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

PROJECT:

LASSEN COUNTY
Co. Ag Commissioner
Co. Assessor's Office
Co. Building Official
County Administrative Officer
Co. Coop. Extension/Farm Advisor
County Counsel
County Fire Warden/CAL FIRE
*(Steven.clement@fire.ca.gov)
Co. Environmental Health Dept.
Lassen County Reg. Solid Waste Mgmt. Authority (Mail)
Lassen County Farm Bureau
Lassen Co. Fish & Game Commission: (put in box downstairs)
Co. Office of Emergency Services (OES) Co. In care of CALFIRE
Co. Public Works;
Co. Public Works/Road Div.;
Co.Public Works/Transportation
Sheriff
LAFCO (Ag. Preserve BOS 2 weeks before mtg.)

STATE
CA Building Standards Commission
CA Energy Commission
CA EPA:
-Air Resources Board
- Dept. of Toxic Substances Control
-State Water Resources Control Bd
*Central Valley RWQCB
*Lahontan RWQCB email only
(lahontan@waterboards.ca.gov)
CA Natural Resources Agency:
-Dept. of Conservation
*Div. of Mine Reclamation
*Div. of Oil, Gas & Geotherm. Res.
*CA Geological Survey
-Dept. of Parks and Recreation
-Dept. of Water Resources (DWR)
-Dept. of Fish & Wildlife:
(Redding/Wendel)
Redding-email only
Debra.Hawk@Wildlife.ca.gov
-CAL FIRE mail & email to:
*(Steven.clement@fire.ca.gov)
CA Public Utilities Commission
Caltrans, District 2
Caltrans, Div. Of Aeronautics
Dept. of Housing & Comm. Dev.
State Clearinghouse (submit to https://ceqasubmit.opr.ca.gov/)
CA Gov. Office of Emergency Services (Cal OES)
CA State Board of Forestry & Fire Protection

FEDERAL
Bureau of Land Mgmt.–Alturas
Bureau of Land Mgmt.-Carson City
Bureau of Land Mgmt.-Susanville
FEMA Region IX, U.S. Dept. of Homeland Security
Lassen National Forest
Modoc National Forest
NRCS (USDA)
Plumas National Forest
U.S. Army Corp of Engineers
U.S. Fish & Wildlife
U.S. Postal Service

P.O./HOMEOWNER'S ASSN.
Clear Creek P.O.'s Association
Hidden Hills HOA
Susan Hills HOA
Oakwoods Estates HOA

NATIVE AMERICAN GROUPS
Pit River Tribe of California
Greenville Rancheria of Maidu Indians
Susanville Indian Rancheria
Honey Lake Maidu
Washoe Tribe of Nevada and California
Native American Heritage Commission
AB 52 File Letter

FIRE PROTECTION DISTRICTS
Adin Fire Protection District
Big Valley Fire Protection District
Doyle Fire Protection District
Eagleville Fire Protection District
Hallelujah Junction (c/o Sierra Valley Fire District)
Herlong Volunteer Fire Dept.
Janesville Fire Protection District
Lake Forest Fire Protection District
Madeline Fire Protection District
McArthur Fire Protection District
Milford Fire District
Sierra Army Depot Fire Dept.
Spalding Fire Department
Standish-Litchfield Fire Protection District
State Fire Marshal
Susan River Fire Protection District
Susanville City Fire Department
Westwood Fire Department

SUSANVILLE CITY
Community Development
Engineer
Parks & Recreation
Road/Public Works
Susanville Water Dept.
Co. Air Pollution Control Officer

SUPERVISORS
Clerk
Supervisor Gallagher (1)
Supervisor Bridges (2)
Supervisor Neely (3)
Supervisor Albaugh (4)
Supervisor Ingram (5)

PRESS
County Times
KSUE/Radio
Mountain Echo
Westwood Pine Press

SCHOOL DISTRICTS
Big Valley Unified School District
Fall River Unified School District
Fletcher Walker Elementary School
Fort Sage Unified School District
Janesville Elementary School
Johnstonville Union School
Lassen Community College District
Lassen Union High School District
Long Valley School District
Modoc Joint Unified School District
Ravendale School
Richmond Elementary School
Shaffer Elementary School
Surprise Valley Unified School
Susanville Elem. School District
Westwood School District

COM. SERVICES DISTRICTS
Clear Creek
Lassen County Waterworks
Leavitt Lake
Little Valley
Spalding Community Services District
Stones-Bengard
Westwood

UTILITIES
Frontier Communications
Herlong PUD
Lassen Municipal Utility District
PG & E
Plumas-Sierra REC
Surprise Valley Electrification Corporation
Susanville Sanitary District

ORGANIZATIONS
Eagle Lake Interagency Board
Honey Lake Valley RCD
Lassen County Cattlemen's Assoc.
Lassen Historical Society
Lassen Land & Trails Trust
Pit River Rod & Gun Club
Organized Sportsmen of Lassen Co.
Fire Safe Council
Lassen Association of Realtors

RAILROADS
Burlington Northern/Santa Fe
Quincy Railroad
Union Pacific Railroad

OTHER:
For Geothermal Projects over 5 MW, send notices to Adams Broadwell (Attorneys) at ssannadan@adamsbroadwell.com see File 830.10 for specifics. PRC 21092.2

→ over

Michael Sherman
Mitchell Chadwick ✓
(3.30.2022 email)

Fred Orr
Avalanche Funding LLC ✓
5040 Acoma St.
Denver, CO 80216

Anderson Thomas R. TR.
P.O. Box 119 ~~Point Reyes~~ ✓
Point Reyes Stati. CA 94956

Posting @ County Clerk ✓

FILE NUMBER: IS #2021-006

DECLARATION OF SERVICE BY FIRST CLASS MAIL

I, THE UNDERSIGNED, DECLARE THAT:

1. I am an employee of Lassen County, California, over the age of eighteen years and not a party to the within entitled cause or matter;

2. My business address is 707 Nevada Street, Suite 5, Susanville, California 96130; and

3. I served the foregoing: Notice of Intent to adopt a Mitigated Negative Declaration on the interested parties in said cause by depositing true copies thereof enclosed in sealed envelopes and placing the envelopes for collection and mailing on the date and at the place shown below following our ordinary business practices. I am readily familiar with this business' practice for collecting and processing correspondence for mailing. On the same day that correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service in sealed envelopes with postage fully paid, in Susanville, California, on: (date): 4/6/2023, addressed as follows:

In this space please place address labels to document where the mailing was sent or reference distribution list on notice·letter

see attached distribution list

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 4/6/2023 (date) at Susanville, California 96130.

Sign: _____

Name (Print): Cortney Flather

CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

YANA GARCIA
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Lahontan Regional Water Quality Control Board

May 2, 2023

Cortney Flather
Natural Resources Coordinator
Lassen County Department of Planning and Building Services
707 Nevada Street, Suite 5
Susanville, CA 96130
cflather@co.lassen.ca.us

COMMENTS ON INITIAL STUDY AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE GEOFORTIS POZZOLAN MINE, LASSEN COUNTY

California Regional Water Quality Control Board, Lahontan Region (Water Board) staff, have reviewed the Initial Study and Mitigated Negative Declaration (IS/MND) for the Geofortis Pozzolan Mine (Project). Lassen County, acting as the lead agency, prepared the document in compliance with provisions of the California Environmental Quality Act (CEQA). Water Board staff, acting as responsible agency, is providing comments on this Project for activities applicable to Water Board statutory responsibilities and regulatory authority pursuant to CEQA Guidelines, California Code of Regulations (CCR), title 14, section 15096. Our comments in this letter provide information that will support regulatory compliance, permit development, and timely implementation of the Project.

PROJECT DESCRIPTION

Geofortis Minerals, LLC is proposing to construct an 83-acre pozzolan materials mining operation with seasonal batch mining and screening operations and year-round and loading and hauling operations. The Project site is located in Lassen County approximately 5.5 miles north of the intersection of United States Highway 395 (US 395) and California State Route 70 (Assessor Parcel Numbers 145-030-016-000, 145-050-004-000, 145-030-017-000). Approximately 5 acres of the Project would be implemented on Public Lands and the remaining 78 acres is split-estate land where the Federal Government retains the mineral rights administered by the United States Department of the Interior, Bureau of Land Management (BLM).

The proposed mine expansion includes mining from two new open pits, one on the east side of US 395 and one on the west side of US 395. Based on information presented in Broadbent's January 23, 2023 *Hydrology Study and Diversion Channel Design parameters, Lased County Pozzolans Mine Expansion* (Final Hydrology Report), ephemeral streams are known to be present near each proposed mining area and the natural flow of stormwater will be diverted to prevent stormwater from entering the open

pits. One diversion channel and one culvert proposed on the east side of US 395 and two diversion channels are proposed on the west side of US 395.

WATER BOARD AUTHORITY

All groundwater and surface waters are considered waters of the state and are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the state are also waters of the U.S. The Federal Clean Water Act (CWA) provides protection for waters of the State that are also waters of the U.S.

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) sets forth water quality standards for surface water and groundwater of the Lahontan Region, which include designated beneficial uses as well as narrative and numerical objectives which must be maintained or attained to protect those uses. The Basin Plan can be accessed via the Water Board's web site at:

http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml.

PERMITS REQUIRED

The following item provides a description of Water Board permit coverage that will be required to implement the Project as proposed in the IS/MND.

National Pollutant Discharge Elimination System

As described in the IS/MND, Project implementation will require enrollment in the National Pollution Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (Order 2014-0057-DWQ, as amended in 2015 and 2018; Industrial General Permit) and preparation of a Storm Water Pollution Prevention Plan (SWPPP). For additional information please see:

Industrial Stormwater Program | California State Water Resources Control Board

A complete application should be submitted through the State Water Board's Storm Water Multi-Application and Report Tracking System (SMARTS) at:

https://smarts.waterboards.ca.gov.

Clean Water Act Section 401 Water Quality Certification

The IS/MND and Final Hydrology Report describes diversion channel construction in ephemeral watercourses that will result in "dredge and fill activities" in Waters of the United States and/or waters of the state requiring Clean Water Act (CWA) Section 401 Water Quality Certification. Under federal CWA section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification (Certification) that the proposed activity will

comply with state water quality standards. Most Certifications are issued in connection with U.S. Army Corps of Engineer (Corps) CWA section 404 permits for dredge and fill discharges.

Information on the 401 Water Quality Certification program in the Lahontan Region may be viewed at the following webpage:

http://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/index.shtml

OTHER COMMENTS

In addition to the requirements described above, Water Board staff have the following comments regarding Broadbent's January 23, 2023 Final Hydrology Report:

- Since a detailed description of the 1) means and methods of the diversion channel construction, 2) means, methods, and details of the construction of the diversion channel connections to the ephemeral watercourses, 3) energy dissipation strategies and materials, and 3) and details of the stormwater capture and final conveyance location strategies was not provided in the Final Hydrology Report, Water Board staff were unable to evaluate the adequacy of the diversion channel designs. Water Board staff expect that review and acceptance of the diversion channel design, features, and materials will be conducted as part of the 401 Water Certification.

- Water Board staff were unable to evaluate the adequacy of the culvert sizing under the proposed eastern pit's access road. Water Board staff expect that review and acceptance of the culvert sizing will be conducted as part of the 401 Water Certification.
- Narrative statements said that channels would be designed to 25-year storm events, however numerical calculations conflict with this narrative.
- Water Board staff request clarification/revision of the design parameter descriptions for the E2 channel and W1, W2, and W3 channels in the south and west of the proposed western pit.
    - The E2 channel appears to be designed to convey 8.2 cubic feet per second (cfs) rather than 8.6 cfs referenced elsewhere in the Final Hydrology Report.
    - The combined E1 and E2 channel appears to be designed to convey 69.7 cubic feet per second (cfs) rather than the 71.6 cfs referenced elsewhere in the Final Hydrology Report.
    - The E2 channel appears to be mislabeled in the design calculations section. It is described as E2 in the text narrative but labeled as E1 in the design calculations section.
    - The western diversion channel appears to be designed to convey 144 cfs rather than 144.1 cfs referenced elsewhere in the Final Hydrology Report. Is this discrepancy based on a "rounding" decision?

- The diversion channel on the south side of the west pit appears to be designed to convey 10 cfs. Please provide a description of the basis for the selection of this design parameter.

If you have any questions regarding the content in this letter, or to schedule a meeting to discuss future permit requirements, please contact Lauder Fairchok at 530-542-5408 (e-mail lauder.fairchok@waterboards.ca.gov) or me at (530) 542-5467 (e-mail robert.tucker@waterboards.ca.gov).

ROB TUCKER, P.E.
Senior Water Resource Control Engineer

Cc: Lauder Fairchok, Lahontan Water Board
Jim Carolan, Lahontan Water Board

Cortney Flather

From: Battles, Michael@DOT <Michael.Battles@dot.ca.gov>
Sent: Monday, May 8, 2023 8:52 AM
To: Cortney Flather
Cc: Grah, Kathy M@DOT; Clark, Cherie D@DOT
Subject: Geofortis Mine Comments from Caltrans District 2 Staff

Good morning Cortney,

Thank you for the opportunity to review and comment on the proposed Geofortis Mine project near Hallelujah Junction, Lassen County. Caltrans District 2 staff have the following comments, broken into comments by Traffic Operations and Hydraulics:

Traffic Operations Comments-

1. The project proposes to modify the existing east side road connection to a Type C Standard. Trucks heading to Stead, Nevada will be turning left across the NB approach. This intersection crosses a passing opportunity. The proposed crossing traffic is approximately 650' prior to the end of the passing opportunity. The NB approaching vehicles are also approaching vehicles are also approaching on a right had horizontal curve. The concern is that larger, slow moving vehicles in the number two lane could obscure a fast moving, passing vehicle in the number one lane. This creates a condition where a truck turning left from the east road connection, believing they have time to complete their turn, may pull in front of fast moving, passing vehicles.
2. The Initial Study calls for the installation of "Truck Crossing" signs, but drivers in a hurry, trying to race to the end of the passing opportunity, may not heed the warning sign. In order to mitigate the potential for broadside collisions due to the conditions outlined above, prior tom commencing mining operations on the east side of SR 395, the project proponent must revise the existing conditions on SR 395 by shifting the existing passing opportunity approximately 2,000 ft to the south, so that SR 395 is one lane from the beginning of the NB left turn lane.

Hydraulics Comments-

1. In the Introduction section on Page 1 of the Final Hydrology Report, there is mention of a diversion channel being "proposed on the west side of US 395 as indicated on Drawing 2". Please verify ditch volume/flow capacity to ensure flows do not encroach within traveled way of US 395 during 25-year event.
2. In regards to 4.0 HEC-HMS Modeling performed, the analysis is limited to off-site areas. Does mine pit development increase runoff (reduced vegetation, increased soil compaction/imperviousness? Where do flows from the various phases go?
3. In regards to section 5.0 Diversion Channel Design Parameters, the Caltrans criteria to pass the 10-year recurrence interval storm is "10-year storm without reaching the soffit of the culvert, and 100-year storm without objectionable headwater". 25-year for roadside channels, spread/intercept. 25-year flows are not to encroach within the traveled way of US 395.
4. Concerning the maps listing CACA-56261 Phase 1 and CACA-56261 Phase II (areas in red), where do the flows from the phases go?

5. In regards to Table 1, Subbasin Modeling Parameters, it is assumed that HEC-HMS was used to calculate Lag Time? Does the software expand on the methodology?

Once again, thank you for allowing Caltrans District 2 staff to review and comment on the proposed Geofortis Mine Project. Please let me know if you have any questions regarding any of the comments.

Sincerely,

Mike Battles
Associate Transportation Planner
Lassen County Liaison and Local Development Review Coordinator
Caltrans District 2

Cortney Flather

From: Battles, Michael@DOT <Michael.Battles@dot.ca.gov>
Sent: Monday, May 22, 2023 1:56 PM
To: Cortney Flather
Subject: Re: Geofortis Mine Comments from Caltrans District 2 Staff

Hi Cortney,

I have just heard back from our Traffic Ops regarding the Geotortis mine and the interpretation of their original comments. It is listed below:

The County and the operator are correctly interpreting the condition. The existing passing opportunity would need to be abandoned in the location of the eastern road connection and be reconstructed to the south. We may also accept revising the connection location to an area which does not connect at the terminus of the passing opportunity. Perhaps south of the existing passing opportunity.

I hope this helps clarify the original comments made by Caltrans Traffic Ops. Please let me know if you have any questions.

Sincerely,

Mike Battles
Associate Transportation Planner
Regional Planning and Local Development Review
Caltrans District 2

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Friday, May 19, 2023 10:20 AM
To: Battles, Michael@DOT <Michael.Battles@dot.ca.gov>
Subject: RE: Geofortis Mine Comments from Caltrans District 2 Staff

Hi Michael,

I think Lassen County and the operator of the proposed Geofortis Pozzolan mine are interpreting your comment about shifting the existing passing opportunity approximately 2,000 ft to the south. We interpret this a essentially building a lane 2,000 ft to the south and removing the current passing lane. Can you please clarify this? Please feel free to email or call me at 530-251-8271. Thank you for your time.

Best,
Cortney Flather
Natural Resources Coordinator

Revised Hydrology Study and
Diversion Channel Design Parameters
Lassen County Pozzolans Mine Expansion
Near Hallelujah Junction, California

Prepared for:

Geofortis Minerals, LLC
30 S. Tooele Blvd
Tooele, UT 84074

Prepared by:

BROADBENT
5450 Louie Lane, #101
Reno, NV 89521
775-322-7969
www.broadbentinc.com

May 19, 2023

Project No. 14-01-173

BROADBENT
5450 Louie Lane, Suite 101, Reno, NV 89511
[T] 775-322-7969 [F] 775-322-7956
broadbentinc.com

Creating Solutions. Building Trust.

May 19, 2023

Project No. 14-01-173

Geofortis Minerals, LLC
30 S. Tooele Blvd
Tooele, UT 84074

Attn: Mr. David McMurtry

Re: **Revised Hydrology Study and Diversion Channel Design Parameters**
Geofortis Minerals, LLC – Lassen County Pozzolans Mine Expansion
Near Hallelujah Junction, California

Dear Mr. McMurty,

Broadbent & Associates, Inc. (Broadbent) is pleased to submit the enclosed *Revised Hydrology Study and Diversion Channel Design Parameters* to Geofortis Minerals, LLC for the expansion of the Lassen County Pozzolans Mine located near Hallelujah Junction, California. Should you have questions regarding this document, please do not hesitate to contact us at (775) 322-7969.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Jeremy B. Boucher, PE
Associate Engineer

Lonnie Roy, PE
Principal Engineer

enclosures: Revised Hydrology Study to Support a LSA Permit

TABLE OF CONTENTS

DRAWINGS

TABLES

APPENDICES

Revised Hydrology Study and Diversion Channel Design Parameters

Lassen County Pozzolans Mine
Near Hallelujah Junction, California

1.0 INTRODUCTION

Geofortis Minerals, LLC (Geofortis) intends to expand their Lassen County Pozzolans Mine (mine) located approximately six miles north of Hallelujah Junction, Lassen County, California (Drawing 1). The proposed mine expansion incudes mining from two new open pits, one on the east side of Unites States Route 395 (US 395) and one on the west side of US 395 (Drawing 2). Ephemeral streams are known to be present near each proposed mining area (USGS, 2022) and the natural flow of stormwater will be diverted to prevent stormwater from entering the open pits. One diversion channel is proposed on the east side of US 395 and one diversion channel is proposed on the west side of US 395 as indicated on Drawing 2. These diversion channels do not affect the CalTrans right of way for US395. To continue the environmental review for the California Environmental Quality Act (CEQA), Lassen County and the California Department of Fish and Wildlife (CDFW) have requested a hydrology study to estimate stormwater flows carried by these channels and determine the design parameters for diversion channels.

Broadbent & Associates, Inc. (Broadbent) is supporting Geofortis with the hydrologic study of the basins that drain through the mine expansion areas and determination of the diversion channel design parameters. No detention/retention basins are proposed to control offsite flows. This report summarizes observations from an October 18, 2022, site visit performed by Broadbent, hydrologic modeling with Hydrologic Engineering Center – Hydrologic Modeling System (HEC – HMS) software, and review of pertinent databases and technical resources. The January 12, 2023 *Hydrology Study and Diversion Channel Design Parameters* report was revised to address comments provided by the Lahontan Regional Water Quality Control Board.

2.0 SITE LOCATION

The proposed mine expansion is located at an elevation of approximately 4,740 feet (ft) above mean sea level (amsl) within the North Lahontan Hydrologic Unit (hydrologic unit code 12-180800031204 Zamboni Hot Springs – Long Valley Creek). The surface elevation within Long Valley decreases while traveling north as evidenced by the northerly flow direction of Long Valley Creek which runs west of the mine and its expansion areas. In the vicinity of the mine, Long Valley Creek is fed by numerous ephemeral streams that drain the Diamond Mountains (west of the mine) and the Peterson Mountain (east of the mine). The vegetation is characterized by conifer trees, abundant sagebrush, and seasonal grasses.

Drawing 2 depicts the proposed open pits and hydrologic subbasins that naturally drain through the expanded mining area. The two subbasins (E1 and E2) on the east side of US 395 contribute flows from an approximate area of 624 acres and the highest elevation approaches 5,340 ft amsl. The three subbasins (W1, W2, and W3) on the west side of US 395 contribute flows from an approximate area of 695 acres and the highest elevation approaches 5,200 ft amsl. The stormwater flows from the east and west basins currently merge north of the proposed open pits. The area, minimum and maximum elevation, and drainage length for each subbasin is presented on Table 1 and Drawing 2. Water that falls directly on the pits will mostly be retained and allowed to infiltrate. The construction of the pits will not increase flows downstream during rain events.

3.0 SOIL CONDITIONS

During the October 18, 2022, site visit, Broadbent personnel inspected the drainages and terrain in each subbasin. The soil was observed to be composed primarily of sand; however, clays, gravels, and silts were also present in variable proportions across the area. Additionally, small rock outcrops were observed in the upper reaches of subbasin W1. Broadbent also utilized the United States Department of Agriculture (USDA) web soil survey (WSS) operated by the Soil Conservation Service (SCS) to better understand the existing soil conditions. The WSS indicated that the most prevalent soil types in the east and west basins is sandy loam and loamy sand. The USDA NRCS classifies these types of soil as hydrologic soil group (HSG) A (USDA, 1986). The WSSs are included in Appendix A.

4.0 CLIMATE DATA

The nearest National Oceanic and Atmospheric Administration (NOAA) weather station to the mine is approximately 14 miles north-northwest in Doyle, CA. In Doyle, annual averages are as follows: high temperature is 65 degrees Fahrenheit (°F), low temperature is 36°F, 14 inches of rain, and 25 inches of snow (U.S. Climate Data). Point precipitation frequency estimates for Doyle were obtained from NOAA Atlas 14, Volume 6, Version 2 and is included in Appendix B.

The USDA SCS developed four synthetic 24-hour rainfall distributions from data made available by the National Weather Service to account for variation in rainfall intensity during a storm and across the storm area. Doyle is in a region that receives Type II storms which are characterized by intense short duration rainfall (USDA, 1986).

4.0 HEC-HMS MODELING

Modeling with the HEC-HMS was performed to estimate runoff from the two subbasins located on the east side of US 395 and the three subbasins located on the west side of US 395. Since stormwater runoff from the east and west basins do not combine within either of the proposed open pits, each set of subbasins was modeled independently to estimate stormwater runoff that will be required to be diverted around the east and west open pits. Due to the ephemeral nature of the streams in the five subbasins, historic flow data through the streams is not available as the streams are not equipped with gauges. Accordingly, certain basin modeling parameters were determined from SCS guidance as described in previous sections. Lag time was calculated using the SCS Lag Equation presented in the Unit Hydrograph (UHG) Technical Manual (NOAA, 2005). This empirical method developed by the SCS estimates lag time directly and applicable to basins that are less than 2,000 acres (NOAA, 2005). Table 1 presents the subbasin modeling parameters.

Hypothetical storms with durations of 24-hours were applied to the east and west basins with the HEC-HMS software. In Doyle, a storm of 24-hour duration at recurrence intervals of 10, 25, 50, and 100 years have precipitation frequency estimates of 2.84 inches, 3.55 inches, 4.12 inches, and 4.73 inches, respectively (NOAA, 2022). For the east basins combined peak discharge ranges between 34.2 cubic feet per second (cfs, 10-year frequency storm) and 155.1 cfs (100-year frequency storm). In the west basins the combined peak discharge ranges between 64.3 cfs (10-year frequency storm) to 326.7 cfs (100-year frequency storm). The modeling results for the east basin are presented in Table 2 while the modeling results for the west basins are presented in Table 3.

5.0 DIVERSION CHANNEL DESIGN PARAMETERS

CalTrans criteria require culverts to pass the 10-year recurrence interval storm. Since the mining operation will have an expected life greater than 10 years, the 25-year recurrence interval storm will be used to size the diversion channels. Drawing 3 shows the proposed drainage channels with the design parameters, depths and flows.

Channel parameters were estimated using a normal depth calculator. The Manning's coefficient for earthen channels was estimated at 0.035. Proposed channels slopes were estimated from proposed grading plans and these parameters were used to calculate flow depths. Model outputs are provided in Appendix C.

For the basins on the east side of US 395, two sets of design parameters have been established since the stormwater runoff from subbasin E2 flows toward the southern boundary of the proposed open pit while flows from subbasin E1 are directed toward the eastern boundary of the proposed open pit. The diverted flows will not combine until flow from E2 are directed along the eastern boundary of the proposed pit in an existing drainage. Along the southern boundary of the proposed open pit, a trapezoidal channel that is 5 feet wide with side wall slopes of 3:1 will be installed to carry the estimated 8.6 cfs until this stormwater reaches the eastern boundary of the proposed pit. The water in this channel will flow at a depth of 0.36 feet. As this channel combines with the flows from subbasin E1, channel will remain in the same configuration, but the depth of flow will increase to 1.22 feet to carry the estimated 71.6 cfs of the 25-year flow. This diversion channel ultimately discharges to the existing wash similar to existing conditions.

For the basins on the west side of US 395, the three subbasins (W1, W2 and W3) ultimately combine and are diverted around the pit. The combined 25-year flow is estimated at 144.1 cfs. This flow will be carried in a trapezoidal channel with a bottom width of 10 feet, side slopes of 3:1 and a flow depth of 1.84 feet. This water is carried on the west side of the pit and discharges into and existing wash in a similar location as the existing conditions. A smaller channel designed to carry 10 cfs is proposed at the southern edge of the pit to control any nuisance water that does not flow directly east. During field inspections this area was found to be rather flat and small (less than a few acres) and this channel was added to ensure that minor nuisance water does not cause erosion on the southern edge of the pit. This trapezoidal channel has a bottom with of 5 feet, side slopes of 3:1 and an estimated flow depth of 0.41 feet.

Design details regarding the diversion channel construction, features including connection to ephemeral streams, and materials of construction will be submitted with the Clean Water Act Section 401 Water Quality Certification (401 Water Certification) application. Additionally, the culvert sizing design will be included as part of the 401 Water Certification. 401 Water Certification is required when an activity may cause a discharge to a water body. Prior to construction, the project will enroll in the National Pollution Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activities (Order 2014-0057-DWQ, as amended in 2015 and 2018).

The proposed culvert beneath the access road on the east side is within CalTrans right of way and is designed to pass the 10-year recurrence interval storm and will have additional permitting requirements through CalTrans.

6.0 LIMITATIONS

The findings presented in this report are based upon observations by field personnel, points investigated, and data available in publicly available databases. Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty expressed or implied was made. This report has been prepared for the exclusive use of Geofortis. It is possible that variations in soil conditions could exist beyond the points investigated. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

7.0 REFERENCES

National Oceanic and Atmospheric Administration. 2022 Atlas 14, Volume 6, Version 2 Precipitation Frequency Data Server. Doyle, California, USA. Accessed on December 12, 2022.

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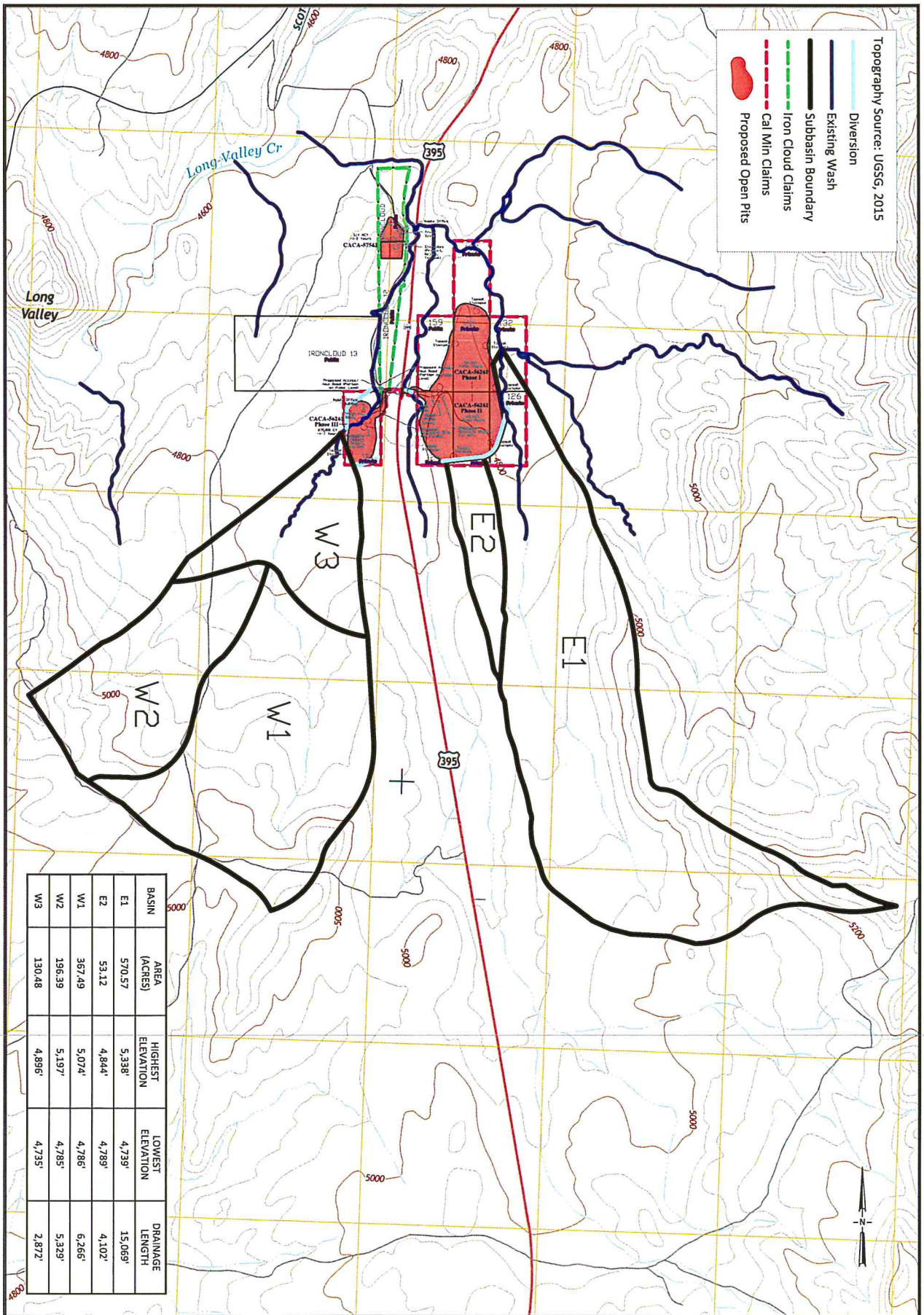
DRAWINGS

APPROXIMATE SCALE (ft)

IMAGE SOURCE: Google Earth

BROADBENT 5450 Louie Lane, #101 Reno, Nevada 89511 Project No.: 14-10-173 Date: 12/22/2022	Geofortis Minerals, LLC 30 S. Tooele Blvd. Tooele, Utah 84074	Site Location Map	Drawing 1



BASIN	AREA (ACRES)	HIGHEST ELEVATION	LOWEST ELEVATION	DRAINAGE LENGTH
E1	570.57	5,338'	4,739'	15,069'
E2	53.12	4,844'	4,789'	4,102'
W1	367.49	5,074'	4,786'	6,266'
W2	196.39	5,197'	4,785'	5,329'
W3	130.48	4,896'	4,735'	2,872'

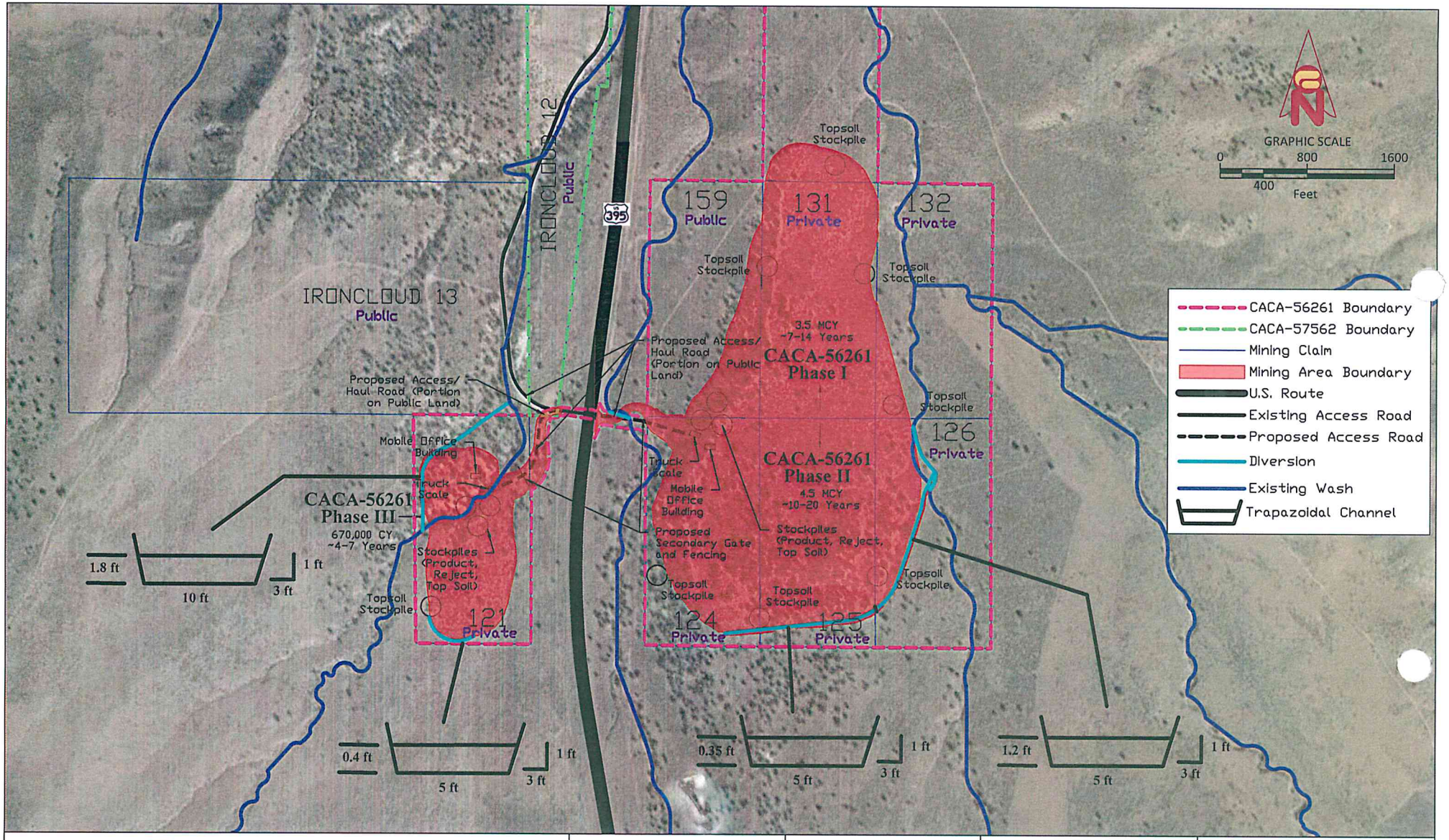
0 1,600 3,200
SCALE (ft)

BROADBENT
5450 Louie Lane, #101
Reno, Nevada 89511
Project No.: 14-10-173 Date: 1/12/2023

Geofortis Minerals, LLC
30 S. Tooele Blvd.
Tooele, Utah 84074

Hydrology Study -
Subbasins Characteristics

Drawing
2



BROADBENT	Geofortis Minerals, LLC 30 S. Tooele Blvd Tooele, UT 84074	Project Number: 14-01-173-701	Prepared By: C. Peterson Reviewed By: L. Roy Date: 01/11/2023	Figure 3: Diversion Channels

TABLES

Table 1. Subbasin Modeling Parameters

Geofortis Minerals, LLC

Subbasin ID	Drainage Area (acres)	Highest Elevation (ft)	Lowest Elevation (ft)	Drainage Length (ft)	Average Slope %	Curve Number	Lag Time (hours)
E1	570.57	5,338	4,739	15,069	3.98	63	2.2
E2	53.12	4,844	4,789	4,102	1.34	63	1.4
W1	367.49	5,074	4,786	6,266	4.60	63	1.0
W2	196.39	5,197	4,785	5,329	7.73	63	0.7
W3	130.48	4,896	4,735	2,872	5.61	63	0.5

ft - feet

Table 2. HEC - HMS East Basins Results

Geofortis Minerals, LLC

Subbasin	E1	E2	Combined
Drainage Area (acres)	570.57	53.12	623.69
10-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	31.4 / 14:50	4.0 / 13:40	34.2 / 14:45
25-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	65.7 / 14:35	8.6 / 13:30	71.6 / 14:30
50-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	100.3 / 14:30	13.4 / 13:30	109.1 / 14:25
100-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	142.6 / 14:25	19.2 / 13:25	155.1 / 14:25

Acronymns:

CFS - cubic feet per second

HEC - HMS - Hydrologic Engineering Center - Hydologic Modeling System

YR - year

hrs:min - hours:minutes

Table 3. HEC - HMS West Basins Results

Geofortis Minerals, LLC

Subbasin	W1	W2	W3	Combined
Subbasin Drainage Area (acres)	367.49	196.39	130.48	694.36
10-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	32.7 / 13:15	22.3 / 12:45	18.2 / 12:30	64.3 / 12:55
25-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	72.5 / 13:05	50.6 / 12:45	42.1 / 12:30	144.1 / 12:45
50-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	113.0 / 13:05	79.6 / 12:40	66.3 / 12:25	226.0 / 12:45
100-YR Peak Discharge (CFS) / Time to Peak (hrs:min)	162.6 / 13:05	115.2 / 12:40	96.4 / 12:25	326.7 / 12:40

Acronymns:

CFS - cubic feet per second

HEC - HMS - Hydrologic Engineering Center - Hydologic Modeling System

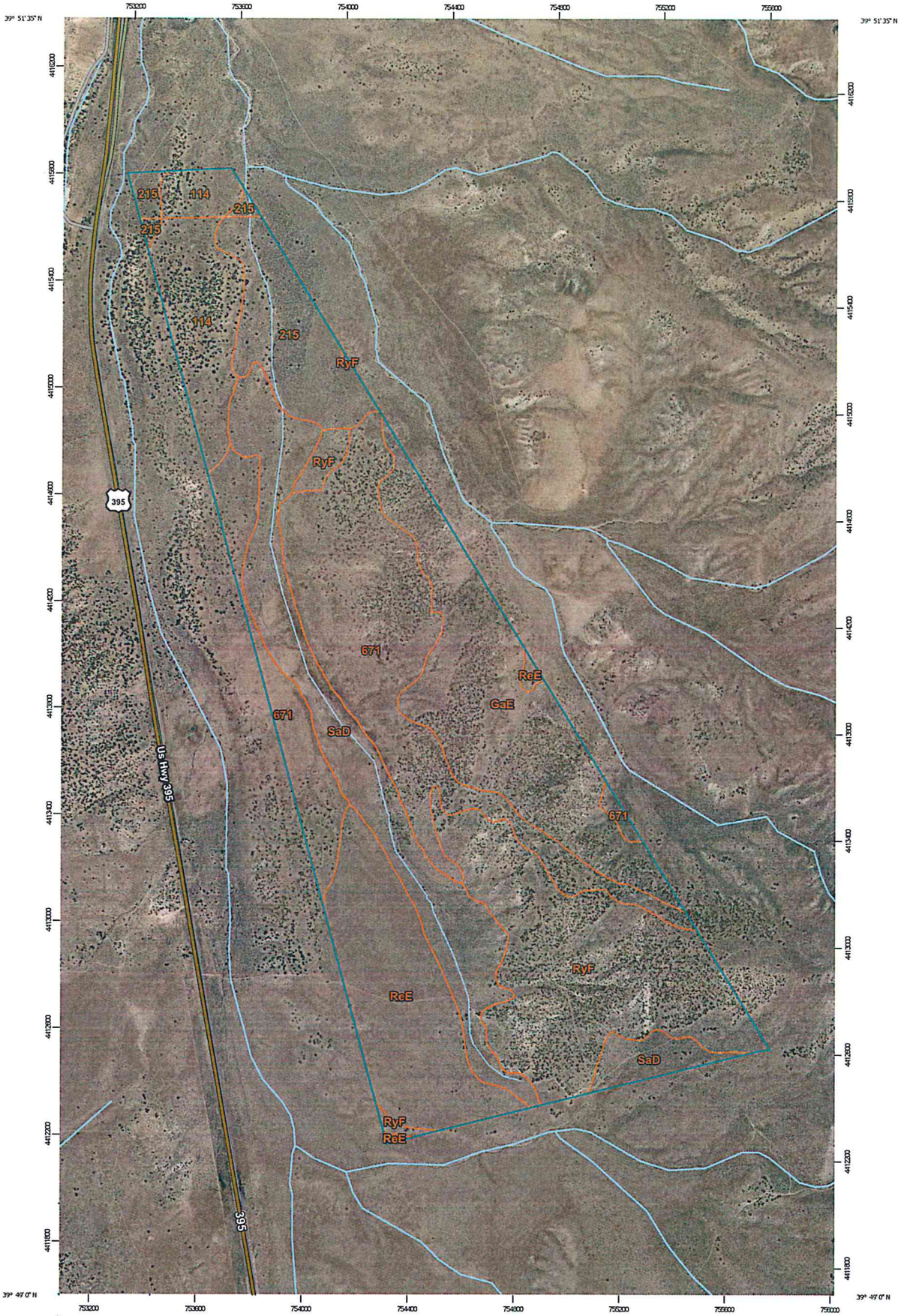
YR - year

hrs:min - hours:minutes

APPENDICES

APPENDIX A

WEB SOIL SURVEYS



Map Scale: 1:13,400 if printed on B portrait (11" x 17") sheet.

Meters 0 150 300 600 900

Feet 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sierra Valley Area, California, Parts of Sierra, Plumas, and Lassen Counties
Survey Area Data: Version 17, Sep 6, 2022

Soil Survey Area: Susanville Area, Parts of Lassen and Plumas Counties, California
Survey Area Data: Version 14, Sep 2, 2022

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
114	Barnard stony sandy loam, 2 to 15 percent slopes	50.6	5.9%
215	Galeppi sandy loam, 2 to 5 percent slopes	58.2	6.8%
671	Galeppi sandy loam, 8 to 15 percent slopes	196.5	22.9%
GaE	Galeppi loamy coarse sand, 5 to 30 percent slopes	133.9	15.6%
ReE	Reba sandy loam, 2 to 30 percent slopes	102.1	11.9%
RyF	Rough broken land	162.3	18.9%
SaD	Saralegui sandy loam, 2 to 15 percent slopes	136.4	15.9%
Subtotals for Soil Survey Area		**840.0**	**97.8%**
Totals for Area of Interest		**858.9**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
114	Barnard stony sandy loam, 2 to 15 percent slopes	12.7	1.5%
215	Galeppi sandy loam, 2 to 5 percent slopes	6.1	0.7%
Subtotals for Soil Survey Area		**18.7**	**2.2%**
Totals for Area of Interest		**858.9**	**100.0%**


120° 4'2" W
120° 2'28" W
39° 51'25" N
39° 49'26" N
751000
751300
751600
751900
752200
752500
752800
753100
4416000
4415700
4415400
4415100
4414800
4414500
4414200
4413900
4413600
4413300
4413000
4412700
4412400
Long Valley Creek
168
671
RyF
671
216
GaE
671
671
GaB
671
RyF
GaE
671
ReE
GrF
GaB
671
GrF
671
GaE
Soil Map may not be valid at this scale.
Map Scale: 1:10,300 if printed on B portrait (11" x 17") sheet.
N
0 150 300 600 900 Meters
0 500 1000 2000 3000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
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- Miscellaneous Water
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- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sierra Valley Area, California, Parts of Sierra, Plumas, and Lassen Counties
Survey Area Data: Version 17, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
168	Corral-Glenbrook complex, 15 to 50 percent slopes	6.6	1.0%
216	Galeppi sandy loam, 5 to 30 percent slopes	39.0	6.2%
671	Galeppi sandy loam, 8 to 15 percent slopes	81.3	13.0%
GaB	Galeppi loamy coarse sand, 2 to 5 percent slopes	108.2	17.3%
GaE	Galeppi loamy coarse sand, 5 to 30 percent slopes	269.3	43.0%
GrF	Glenbrook-Rock outcrop complex, 5 to 50 percent slopes	30.3	4.8%
ReE	Reba sandy loam, 2 to 30 percent slopes	7.0	1.1%
RyF	Rough broken land	84.8	13.5%
Totals for Area of Interest		**626.3**	**100.0%**

APPENDIX B

PRECIPITATION FREQUENCY – DOYLE, CALIFORNIA

NOAA Atlas 14, Volume 6, Version 2
Location name: Doyle, California, USA*
Latitude: 39.8594°, Longitude: -120.0406°
Elevation: 4693.04 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.098 (0.082-0.118)	0.132 (0.111-0.159)	0.183 (0.153-0.220)	0.229 (0.190-0.278)	0.299 (0.240-0.377)	0.361 (0.283-0.465)	0.430 (0.328-0.568)	0.509 (0.377-0.692)	0.629 (0.447-0.894)	0.734 (0.503-1.08)
10-min	0.140 (0.118-0.169)	0.189 (0.159-0.227)	0.262 (0.219-0.316)	0.328 (0.272-0.398)	0.429 (0.344-0.541)	0.517 (0.405-0.666)	0.616 (0.471-0.814)	0.729 (0.541-0.992)	0.902 (0.641-1.28)	1.05 (0.721-1.55)
15-min	0.170 (0.143-0.204)	0.229 (0.192-0.275)	0.316 (0.265-0.382)	0.396 (0.329-0.482)	0.519 (0.416-0.654)	0.625 (0.490-0.805)	0.745 (0.569-0.985)	0.882 (0.654-1.20)	1.09 (0.775-1.55)	1.27 (0.872-1.88)
30-min	0.232 (0.195-0.278)	0.312 (0.262-0.375)	0.432 (0.361-0.520)	0.540 (0.448-0.657)	0.707 (0.567-0.891)	0.853 (0.669-1.10)	1.02 (0.776-1.34)	1.20 (0.892-1.64)	1.49 (1.06-2.11)	1.74 (1.19-2.56)
60-min	0.325 (0.273-0.390)	0.437 (0.367-0.526)	0.605 (0.506-0.729)	0.757 (0.628-0.921)	0.991 (0.795-1.25)	1.20 (0.937-1.54)	1.42 (1.09-1.88)	1.69 (1.25-2.29)	2.08 (1.48-2.96)	2.43 (1.67-3.58)
2-hr	0.432 (0.363-0.519)	0.547 (0.460-0.658)	0.720 (0.603-0.868)	0.877 (0.728-1.07)	1.12 (0.899-1.41)	1.34 (1.05-1.72)	1.58 (1.21-2.09)	1.86 (1.38-2.53)	2.29 (1.62-3.25)	2.67 (1.83-3.93)
3-hr	0.521 (0.438-0.625)	0.646 (0.542-0.777)	0.832 (0.697-1.00)	1.00 (0.833-1.22)	1.27 (1.02-1.60)	1.50 (1.18-1.93)	1.76 (1.35-2.33)	2.07 (1.53-2.81)	2.53 (1.80-3.60)	2.95 (2.02-4.34)
6-hr	0.696 (0.585-0.836)	0.845 (0.709-1.02)	1.07 (0.892-1.28)	1.26 (1.05-1.54)	1.57 (1.26-1.98)	1.84 (1.44-2.37)	2.15 (1.64-2.84)	2.50 (1.85-3.40)	3.04 (2.16-4.32)	3.52 (2.41-5.19)
12-hr	0.925 (0.778-1.11)	1.16 (0.978-1.40)	1.50 (1.26-1.81)	1.80 (1.50-2.19)	2.24 (1.79-2.82)	2.60 (2.04-3.35)	2.99 (2.29-3.96)	3.43 (2.54-4.66)	4.06 (2.88-5.77)	4.58 (3.14-6.76)
24-hr	1.29 (1.10-1.55)	1.73 (1.47-2.08)	2.33 (1.97-2.81)	2.84 (2.39-3.44)	3.55 (2.91-4.42)	4.12 (3.33-5.22)	4.73 (3.74-6.09)	5.37 (4.15-7.07)	6.27 (4.70-8.54)	6.99 (5.10-9.80)
2-day	1.57 (1.33-1.88)	2.13 (1.81-2.56)	2.92 (2.47-3.52)	3.60 (3.03-4.36)	4.57 (3.75-5.68)	5.36 (4.33-6.78)	6.21 (4.91-8.00)	7.12 (5.52-9.39)	8.44 (6.32-11.5)	9.51 (6.93-13.3)
3-day	1.75 (1.48-2.10)	2.38 (2.02-2.86)	3.30 (2.79-3.97)	4.09 (3.44-4.95)	5.24 (4.30-6.52)	6.20 (5.01-7.84)	7.24 (5.73-9.33)	8.38 (6.49-11.0)	10.0 (7.52-13.7)	11.4 (8.33-16.0)
4-day	1.88 (1.60-2.25)	2.58 (2.19-3.09)	3.58 (3.03-4.31)	4.45 (3.75-5.40)	5.74 (4.71-7.14)	6.81 (5.50-8.62)	7.98 (6.32-10.3)	9.27 (7.18-12.2)	11.2 (8.36-15.2)	12.8 (9.29-17.9)
7-day	2.13 (1.81-2.55)	2.93 (2.49-3.53)	4.09 (3.47-4.93)	5.11 (4.30-6.20)	6.61 (5.42-8.22)	7.86 (6.34-9.94)	9.21 (7.29-11.9)	10.7 (8.28-14.1)	12.9 (9.65-17.6)	14.7 (10.7-20.6)
10-day	2.31 (1.97-2.78)	3.21 (2.72-3.85)	4.48 (3.80-5.40)	5.60 (4.72-6.79)	7.25 (5.94-9.01)	8.60 (6.94-10.9)	10.1 (7.97-13.0)	11.7 (9.04-15.4)	14.0 (10.5-19.1)	16.0 (11.6-22.4)
20-day	2.84 (2.41-3.41)	3.99 (3.39-4.79)	5.61 (4.76-6.76)	7.01 (5.91-8.50)	9.05 (7.42-11.3)	10.7 (8.64-13.5)	12.5 (9.86-16.1)	14.4 (11.1-18.9)	17.0 (12.8-23.2)	19.2 (14.0-26.9)
30-day	3.34 (2.84-4.01)	4.70 (3.99-5.65)	6.61 (5.60-7.96)	8.24 (6.94-9.99)	10.6 (8.69-13.2)	12.5 (10.1-15.8)	14.4 (11.4-18.6)	16.5 (12.8-21.8)	19.5 (14.6-26.5)	21.8 (15.9-30.5)
45-day	4.04 (3.43-4.85)	5.67 (4.81-6.81)	7.91 (6.70-9.53)	9.81 (8.26-11.9)	12.5 (10.3-15.6)	14.7 (11.8-18.5)	16.9 (13.4-21.8)	19.2 (14.9-25.3)	22.4 (16.7-30.5)	24.8 (18.1-34.8)
60-day	4.68 (3.98-5.62)	6.50 (5.52-7.82)	9.01 (7.63-10.8)	11.1 (9.35-13.5)	14.0 (11.5-17.5)	16.4 (13.2-20.7)	18.7 (14.8-24.2)	21.2 (16.4-27.9)	24.5 (18.4-33.4)	27.1 (19.7-37.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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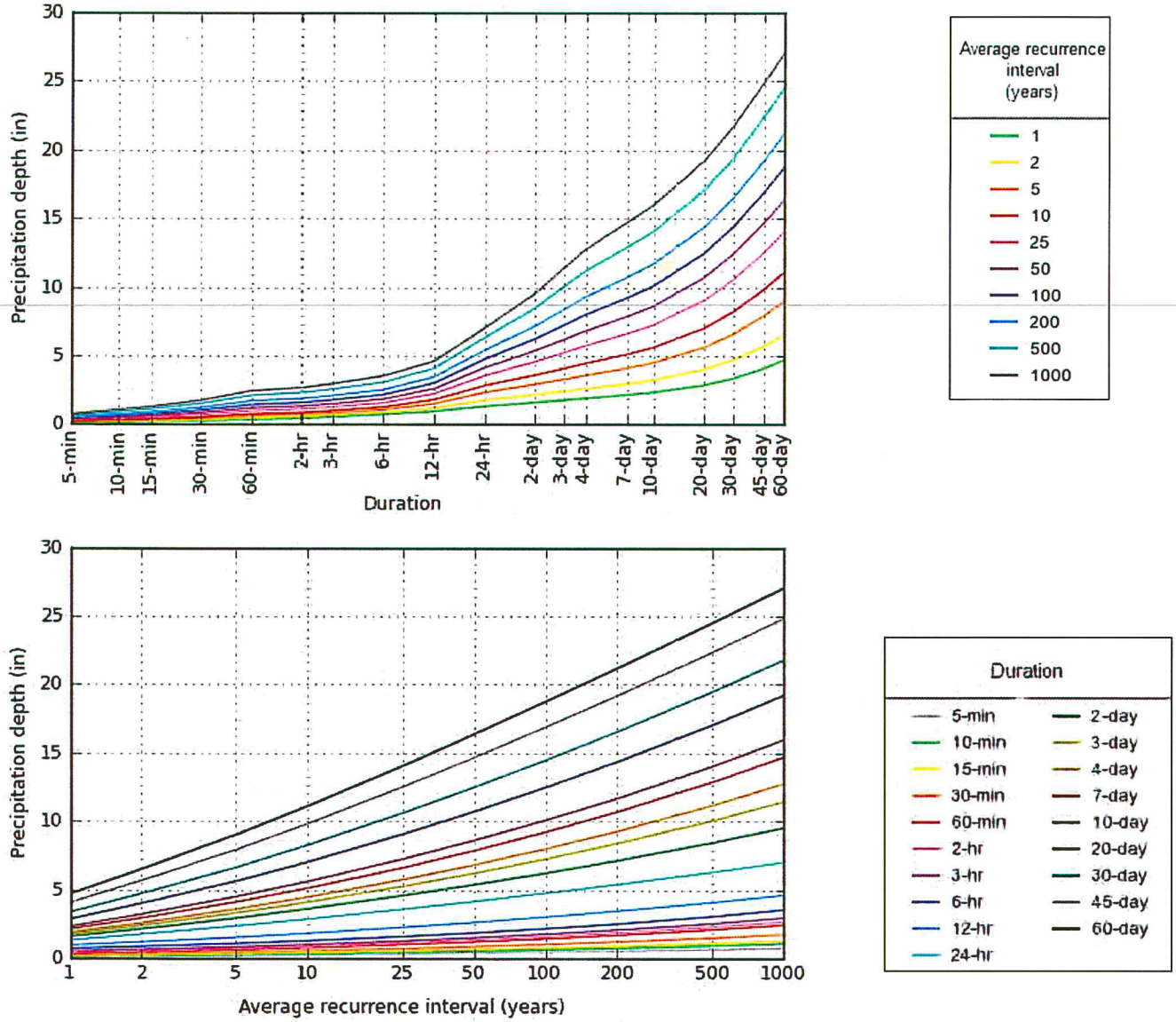
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 39.8594°, Longitude: -120.0406°



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Mon Dec 19 23:51:23 2022

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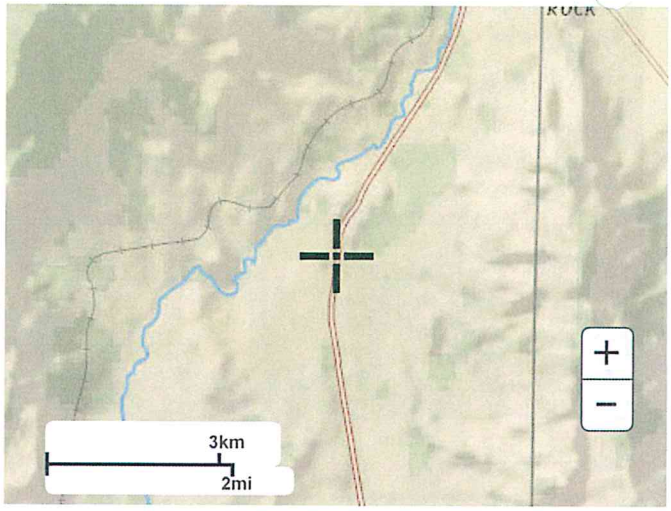
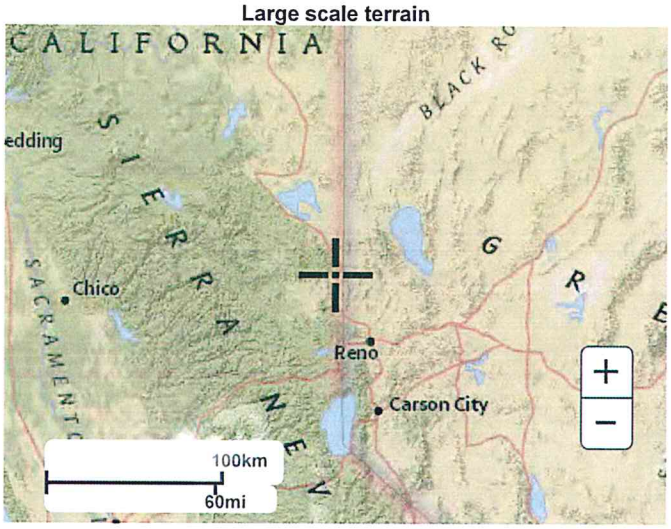
Maps & aerials

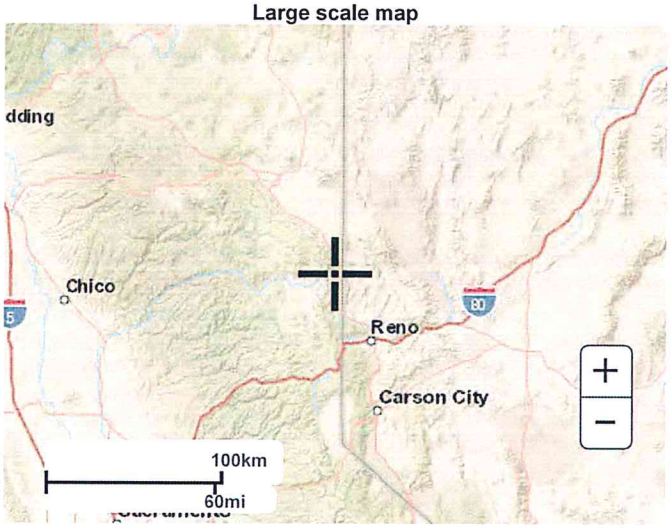
Small scale terrain



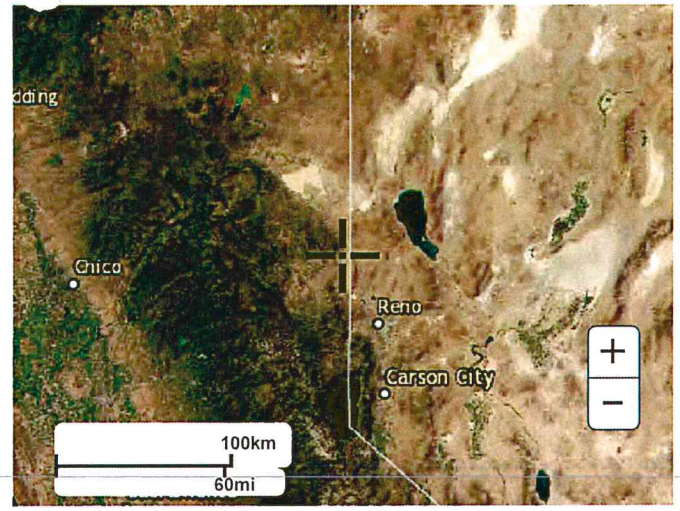
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

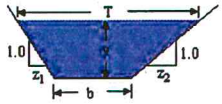
APPENDIX C

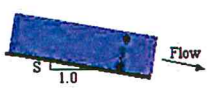
HYDRAULIC CALCULATIONS

Diversion Channel for Subbasin E2

Always enter side slopes:	All features enabled	
Side slope on bank 1, z_1 (H:V):	3	Click to Calculate
Side slope on bank 2, z_2 (H:V):	3	
Click boxes to select inputs:	http://www.LMNOeng.com	
☑ Discharge, Q:	8.6	ft3/s (cfs)
☐ Velocity, V:	3.8692346	ft/s
☐ Water depth, y:	0.36471997	ft
☐ Top width, T:	7.1883198	ft
☑ Bottom width, b:	5	ft
☑ Manning roughness, n:	0.035	Enter or compute n
☑ Channel slope, S:	0.0406	m/m, ft/ft
Always computed:	© 2014 LMNO Engineering, Research, and Software, Ltd.	
Channel area, A:	2.2226618	ft2
Channel wetted perimeter, P:	7.3066916	ft
Hydraulic radius, R:	0.30419538	ft
Froude number, F:	1.227239	

Units in trapezoidal open channel calculation: cm=centimeter, cfs=cubic foot per second, ft=foot, gal=gallon (U.S.), hr=hour, km=kilometer, m=meter, min=minute, s=second, yr=year





$$Q = VA \qquad V = \frac{k}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} \qquad A = \frac{y}{2}(b + T)$$

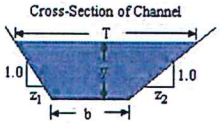
$$P = b + y\left(\sqrt{1 + z_1^2} + \sqrt{1 + z_2^2}\right) \qquad T = b + y(z_1 + z_2)$$

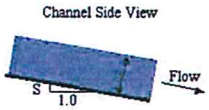
$$F = V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta = Tan^{-1}(S)$$

Diversion Channel for Subbasin E1 and E2 Combined

Always enter side slopes:	All features enabled		
Side slope on bank 1, z_1 (H:V):	3	Click to Calculate	
Side slope on bank 2, z_2 (H:V):	3		
Click boxes to select inputs:	http://www.LMNOeng.com		
☑ Discharge, Q:	71.6	ft3/s (cfs)	
☐ Velocity, V:	6.7677805	ft/s	
☐ Water depth, y:	1.2211636	ft	
☐ Top width, T:	12.326981	ft	
☑ Bottom width, b:	5	ft	
☑ Manning roughness, n:	0.035	Enter or compute n	
☑ Channel slope, S:	0.0325	m/m, ft/ft	
Always computed:	© 2014 LMNO Engineering, Research, and Software, Ltd.		
Channel area, A:	10.579539	ft2	
Channel wetted perimeter, P:	12.723317	ft	
Hydraulic radius, R:	0.83150798	ft	
Froude number, F:	1.2882618		

Units in trapezoidal open channel calculation: cm=centimeter, cfs=cubic foot per second, ft=foot, gal=gallon (U.S.), hr=hour, km=kilometer, m=meter, min=minute, s=second, yr=year





$$Q=VA \qquad V=\frac{k}{n}R^{2/3}S^{1/2} \qquad R=\frac{A}{P} \qquad A=\frac{y}{2}(b+T)$$

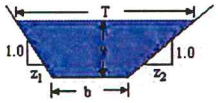
$$P=b+y\left(\sqrt{1+z_1^2}+\sqrt{1+z_2^2}\right) \qquad T=b+y(z_1+z_2)$$

$$F=V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta=Tan^{-1}(S)$$

Diversion Channel for Combined Subbasin W1, W2 and W3

Always enter side slopes:	All features enabled	
Side slope on bank 1, z_1 (H:V):	3	Click to Calculate
Side slope on bank 2, z_2 (H:V):	3	
Click boxes to select inputs:	http://www.LMNOeng.com	
☑ Discharge, Q:	144.1	ft3/s (cfs)
☐ Velocity, V:	5.0353027	ft/s
☐ Water depth, y:	1.8429048	ft
☐ Top width, T:	21.057429	ft
☑ Bottom width, b:	10	ft
☑ Manning roughness, n:	0.035	Enter or compute n
☑ Channel slope, S:	0.0097	m/m, ft/ft
Always computed:	© 2014 LMNO Engineering, Research, and Software, Ltd.	
Channel area, A:	28.617942	ft2
Channel wetted perimeter, P:	21.655553	ft
Hydraulic radius, R:	1.3215059	ft
Froude number, F:	0.76149581	

Units in trapezoidal open channel calculation: cm=centimeter, cfs=cubic foot per second, ft=foot, gal=gallon (U.S.), hr=hour, km=kilometer, m=meter, min=minute, s=second, yr=year



$$Q = VA \qquad V = \frac{k}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} \qquad A = \frac{y}{2}(b + T)$$

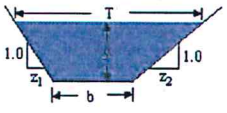
$$P = b + y\left(\sqrt{1 + z_1^2} + \sqrt{1 + z_2^2}\right) \qquad T = b + y(z_1 + z_2)$$

$$F = V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta = Tan^{-1}(S)$$

Diversion Channel on South Portion of West Side

Always enter side slopes:	All features enabled	
Side slope on bank 1, z_1 (H:V):	3	Click to Calculate
Side slope on bank 2, z_2 (H:V):	3	
Click boxes to select inputs:	http://www.LMNOeng.com	
☑ Discharge, Q:	10	ft3/s (cfs)
☐ Velocity, V:	3.8912414	ft/s
☐ Water depth, y:	0.41208591	ft
☐ Top width, T:	7.4725155	ft
☑ Bottom width, b:	5	ft
☑ Manning roughness, n:	0.035	Enter or compute n
☑ Channel slope, S:	.0357	m/m, ft/ft
Always computed:	© 2014 LMNO Engineering, Research, and Software, Ltd.	
Channel area, A:	2.569874	ft2
Channel wetted perimeter, P:	7.6062602	ft
Hydraulic radius, R:	0.33786301	ft
Froude number, F:	1.1701788	

Units in trapezoidal open channel calculation: cm=centimeter, cfs=cubic foot per second, ft=foot, gal=gallon (U.S.), hr=hour, km=kilometer, m=meter, min=minute, s=second, yr=year



$$Q = VA \qquad V = \frac{k}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} \qquad A = \frac{y}{2}(b + T)$$

$$P = b + y\left(\sqrt{1 + z_1^2} + \sqrt{1 + z_2^2}\right) \qquad T = b + y(z_1 + z_2)$$

$$F = V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta = Tan^{-1}(S)$$

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

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

May 5, 2023

Cortney Flather, Natural Resources Coordinator
Lassen County
707 Nevada Street
Susanville, CA 96130
cflather@co.lassen.ca.us

SUBJECT: REVIEW OF GEOFORTIS POZZOLAN MINE, STATE CLEARINGHOUSE NUMBER 2023040120, LASSEN COUNTY

Dear Courtney Flather:

The California Department of Fish and Wildlife (CDFW) has reviewed the Initial Study and Mitigated Negative Declaration (ISMND) dated March 2018 and revised April 1, 2021, for the above-referenced project (Project). CDFW appreciates this opportunity to comment on the Project, pursuant to the California Environmental Quality Act (CEQA) Guidelines[1].

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW may also act as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. Likewise, "take" authorization, as outlined by the applicable Fish and Game code, may be required if the Project as proposed may result in "take", as defined by state law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish and G. Code § 1900 et seq.), authorization as provided by the applicable Fish and Game Code will be required.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Project Summary

The Project, as described in the ISMND, is as follows:

"Geofortis plans to develop a 100-acre pozzolan mine consisting of mineral claims CAL MIN 120-126, 131, 132, 137, 138, and 159. Mine operations will run year-round and will follow a proposed three phased schedule for excavations on undisturbed areas. Phase I will cover 35.3 acres and may produce 3.5 million cubic yards of pozzolan material. Phase II will cover 37.5 acres and could produce up to 4.9 million cubic yards of pozzolan material. Phase III will cover 27.4 acres and may produce 1.7 million cubic yards. It is estimated these mineral claims will produce 10.1 million cubic yards of pozzolan material. Along with ground disturbing activities with the mine, Geofortis is proposing to construct a new 1,000-foot-long access road.

Geofortis also plans to operate on previously-mined Ironcloud claims 11 and 12. This area is previously mined and encompasses 4.9 acres of disturbed area. The mine pit extends a maximum of 41.5 feet below the existing surface, averaging 16.5 feet below the existing surface. These mineral claims may produce a total of 140,000 cubic yards of pozzolan material."

Comments and Recommendations

CDFW recognizes that Lassen County has taken some appropriate steps to identify and assess potential impacts to biological resources, including a biological evaluation of potentially occurring species and habitats. CDFW responded to early consultation requests from Lassen County in September 2018 and May 2022. While CDFW recognizes that many of the concerns and recommendations identified throughout early consultation have been addressed, and that many of the avoidance and minimization measures listed in the ISMND are adequate in avoiding and minimizing potential impacts to biological resources, CDFW offers the following comments and recommendations.

Rare Plants

CDFW concurs with many of the minimization measures listed in the ISMND regarding potential impacts to white woolly buckwheat (*Eriogonum ochrocephalum var. ochrocephalum,* WWB); however, some information appears to be omitted or unclear. As the ISMND describes, WWB is ranked by the California Native Plant Society as rare, threatened, or endangered in California and common elsewhere (2B.2). The Seed Collection Plan (SCP) states eight populations and ~5,800 individuals of WWB were observed throughout the Project area. The ISMND describes the range of WWB as primarily confined to Long Valley of Lassen

County and has identified mining to be the largest threat to the species.

A thorough evaluation of WWB populations found onsite compared to populations known to occur offsite throughout Long Valley was not included in the Biological Survey Report (BSR), ISMND, or the SCP. Additionally, the total number of individual plants/populations that will be disturbed with the implementation of the Project is not clearly stated. Detailed impact analyses are critical in the determination of impact significance. While CDFW supports transplantation and seed collection in an effort to minimize impacts to WWB, a thorough impact analysis should be included in the ISMND, especially considering the species extremely limited range within California. The impact analysis should include total amount (acreage) of potential disturbance to onsite populations, how potential disturbance may impact the species' overall population throughout California, and how the proposed minimization strategies would reduce impacts to less than significant.

Additionally, pertinent information appears to be omitted from the SCP and corresponding minimization measures in the ISMND. CDFW strongly recommends including the following information into the SCP and ISMND:

- Who is responsible for transplanting and re-seeding
- Who is responsible for maintenance and monitoring of transplants and seedlings
- How often will maintenance and monitoring be performed
- A concise description of where WWB will be transplanted within the Project area and how this area will be protected from mining activity
- A map of proposed WWB population removal
- A map of proposed WWB transplant and re-seeding areas

The ISMND states "*Success standards to restore this species at a ratio of 1:1 or more shall be achieved (number of individual plants established is equal to or greater than the number of plants identified in the Biological Report).*" CDFW reiterates that if the species cannot be avoided, mitigation measures should be formulated to restore this species at a ratio of 2:1 or more.

Dust Abatement

The ISMND indicates dust palliatives may be applied. CDFW does not encourage the use of dust palliatives and CDFW recommends against applying dust palliatives, especially where transmission to a waterway or sensitive habitat could occur. Many dust palliatives are toxic to fish and wildlife and have adverse effects on the environment. Transmission of palliatives may occur from run-off, leaching, deposition of palliative laden dust, and release from tires after traffic has traversed areas treated with palliative. CDFW is primarily concerned with the transport of palliatives during storm events from areas of approved use into depressions, streams and washes that

may be sources of water for wildlife. If dust palliatives will be used, impacts to fish, wildlife, and sensitive habitats should be addressed and measures proposed to reduce impacts to less than significant.

Lake and Streambed Alteration Agreement

The ISMND states "*As a condition of approval, the applicant shall submit the permit/agreement with CDFW or a letter from CDFW stating that an agreement is not necessary to Lassen County before an Authorization to Operate is issued.*". The Hydrology Report indicates that the Project may modify the hydrology of ephemeral drainages; therefore, a notification to CDFW pursuant to Fish and Game Code section 1602 appears warranted.

Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

1. substantially divert or obstruct the natural flow of the bed, channel, or bank of any river, stream, or lake; or
2. substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
3. deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

To obtain information about the 1600 Notification process, please access CDFW's website at: https://www.wildlife.ca.gov/Conservation/LSA.

Submitting Data

CEQA requires that information developed in environmental documents be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations. (Public Resources Code section 21003(e)). Please report any special status species observations and natural communities detected during Project surveys to the CNDDB. The CNNDB field survey form can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data

Avoiding Inadvertent Wildlife Entrapment

CDFW recommends installing wildlife escape ramps on all detention basins to allow wildlife to exit. The dimensions of the ramps should be a minimum of 12 inches wide (e.g., 2-inch x 12-inch timber), fastened to the soil for stability and not exceeding a 2:1 slope. If the dynamics of the reclamation ponds change throughout time, so should the exit ramps, to ensure continued functionality. Ramps should be evaluated monthly, at minimum, to ensure proper function.

If trenching and excavation will be included in Project activities, any open trench and excavation areas should be covered securely prior to stopping work each day and/or a wildlife exit ramp should be provided in the trench to prevent wildlife entrapment. If pipes are left out onsite, they should be inspected for wildlife prior to burying, capping, moving, or filling.

We appreciate the opportunity to offer comments and recommendations that may assist in adequately analyzing and minimizing impacts to biological resources. If you have any questions, please contact Erika Iacona, Environmental Scientist, by email at R1CEQARedding@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Jason Roberts
132FDFECF23F4FD...

Jason Roberts for
Tina Bartlett, Regional Manager
Northern Region

ec: State Clearinghouse
State.Clearinghouse@opr.ca.gov

Erika Iacona
R1CEQARedding@wildlife.ca.gov

Cortney Flather

From: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>
Sent: Friday, May 19, 2023 12:29 PM
To: Cortney Flather
Subject: RE: Comments on GeoFortis Minerals

Hi Courtney,
Its not clear to me from this report what the slopes of the mining pits will be however, the report indicates that the drainage basin channels will be 3:1 slope. Similar to the recommendation included in our comment letter dated May 5, 2023, with regard to all mining pits and drainage basins: If a slope of 2:1 or less cannot be maintained, CDFW recommends installing wildlife escape structures on any slope that exceeds 2:1.
Thank you for keeping CDFW up to date with revised reports.
Erika

--
Erika Iacona
Senior Environmental Scientist, Specialist
Interior Habitat Conservation Planning
(530) 806-1389
601 Locust Street
Redding, CA 96001
CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Friday, May 19, 2023 10:23 AM
To: Tucker, Robert@Waterboards <robert.tucker@waterboards.ca.gov>
Cc: Fairchok, Lauder@Waterboards <Lauder.Fairchok@Waterboards.ca.gov>; Carolan, Jim@Waterboards <Jim.Carolan@waterboards.ca.gov>; Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>; Battles, Michael@DOT <Michael.Battles@dot.ca.gov>
Subject: RE: Comments on GeoFortis Minerals

Good morning,

Please find the attached revised hydrologic report that attempts to respond to some of your comments. Please let me know what your thoughts are.

Thank you,
Cortney Flather
Natural Resources Coordinator
Planning and Building Services

Cortney Flather

From: Tonenna, Dean <dtonenna@blm.gov>
Sent: Thursday, May 18, 2023 12:25 PM
To: Cortney Flather; Iacona, Erika@Wildlife; Depaoli, Kenneth R
Subject: RE: [EXTERNAL] Geofortis site visit with CDFW

I had suggested avoidance to the BLM planning team, but the project proponent was not in favor of that, so it wasn't included. I am curious to know if avoidance is part of the CEQA document?

The other thing that a site visit might help with is that the largest occupied occurrences were on a west-facing hillside with a lot of tree cover. This site has more filtered sunlight which might be important in reestablishing plants.

Dean

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Thursday, May 18, 2023 9:35 AM
To: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>; Tonenna, Dean <dtonenna@blm.gov>; Depaoli, Kenneth R <kdepaoli@blm.gov>
Subject: RE: [EXTERNAL] Geofortis site visit with CDFW

Hi all,

Below is the mitigation measure that the BLM states in their environmental assessment which doesn't mention anything about avoidance. It also states that a conservation plan shall be submitted prior to ground disturbance. One of **our** mitigation measures also states this: **Mitigation Measure Bio-3**: A specific white woolly buckwheat (*Eriogonum ochrocephalum var. ochrocephalum*) Conservation Plan shall be submitted and approved by the BLM and Lassen County to protect this species prior to ground disturbance (prior to vegetation removal).
BLM Mitigation Measure:

Environmental Protection Measures for Sensitive Species (Plants):
PLANTS-1 A specific White Wooly Buckwheat conservation plan will be submitted and approved by the BLM and Lassen County to protect this species prior to ground disturbance:

- All individual plants found within the mine area will be transplanted to a project nursery for re-planting during reclamation.

25

- Seeds from plants not transplanted will be collected for seeding during reclamation.
- Training program provided to all workers at the mine site to protect the species.

Informal Consultation from CDFW regarding White woolly buckwheat:

White woolly buckwheat (*Eriogonum ochrocephalum* var. *ochrocephalum*)

According to the Final Environmental Assessment dated May 2021, and prepared by the BLM, a separate seeding program is proposed for the white woolly buckwheat. This species is listed as a California Rare Plant Rank 2B.2, rare, threatened, or endangered in California; common elsewhere. After reviewing the seeding plan for this species, the Department recommends that success criteria for the proposed seeding plan be developed that correspond to what currently exists on the site presently. There were estimations provided but something more substantial detailing exactly what happens if the white woolly buckwheat population is less than what was counted in 2018 after mining is completed. The contingency plan should include additional mitigation measures that will mitigate and/or compensate for the impacts to this species.

The Conservation Plan shall answer all of the pertinent information that CDFW recommended during the informal consultation and circulation of the initial study before commencement of mining. Given that avoidance is the most logical choice, I will add language to our mitigation measure which states something like:

"where avoidance is not feasible, all individual white woolly buckwheat plants within the mine footprint shall be transplanted to a clearly marked onsite project nursery for seed collection. Transplants at the nursery shall be monitored to ensure they are viable for reclamation purposes. Prior to transplanting, wild seed from the existing plants shall be collected at the appropriate time of year, by a qualified botanist, and shall be stored using scientifically sound collection and storage techniques. Success standards to restore this species at a ratio of 1:1 or more shall be achieved (number of individual plants established is equal to or greater than the number of plants identified in the Biological Report). All preservation areas including the onsite nursery shall be mapped and protected. All maps shall be provided to Lassen County and the California Department of Fish and Wildlife (CDFW). Monitoring methods shall occur according to the revised SMARA Reclamation Plan. Mine workers shall be trained to protect this species."

The operator expressed to me that if/when the project is approved, ground disturbing activities will not commence until their processing facility is built in Stead, NV. That will give us plenty of time to do a site visit.

Best,
Cortney Flather
Natural Resources Coordinator
Planning and Building Services
707 Nevada St. Suite 5
Susanville CA 96130
Phone: (530) 251-8271

From: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>
Sent: Thursday, May 18, 2023 7:16 AM
To: Tonenna, Dean <dtonenna@blm.gov>; Cortney Flather <CFlather@co.lassen.ca.us>; Depaoli, Kenneth R <kdepaoli@blm.gov>
Subject: RE: [EXTERNAL] Geofortis site visit with CDFW

Good Morning,
I am sorry to say that I am not available on May 30th for a site visit however, we at CDFW are still interested in seeing the site at a later date.
I agree with Dean, as avoidance is always top priority and our first recommendation. If avoidance is still being considered, a buffer from mining activity would be appropriate. As I am sure as you have already seen in our comment letter Courtney, if the buckwheat cannot be avoided, there were a couple missing details from the buckwheat impact analysis and the buckwheat transplant and monitoring plan. Once those details are addressed and included in the final environmental document, we should all have a better idea if Option 2 is feasible and appropriate.

Thank you,
Erika

--
Erika Iacona
Senior Environmental Scientist, Specialist
Interior Habitat Conservation Planning
(530) 806-1389
601 Locust Street
Redding, CA 96001
CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

From: Tonenna, Dean <dtonenna@blm.gov>
Sent: Wednesday, May 17, 2023 7:12 PM
To: Cortney Flather <CFlather@co.lassen.ca.us>; Depaoli, Kenneth R <kdepaoli@blm.gov>
Cc: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>
Subject: RE: [EXTERNAL] Geofortis site visit with CDFW

It looks like May 30th is the only day I have available before June 6th. The issues as I recall them are to: 1. Avoid the buckwheat, 2. Collect seed from the buckwheat and grow it out in a greenhouse and transplant it at the appropriate

time then monitor the transplants for x number of years and repeat the process if the transplants fail to establish. Option 1 is the best and cheapest option as the buckwheat is at the edge of the proposed project.

Dean

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Friday, May 5, 2023 8:24 AM
To: Tonenna, Dean <dtonenna@blm.gov>; Depaoli, Kenneth R <kdepaoli@blm.gov>
Cc: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>
Subject: RE: [EXTERNAL] Geofortis site visit with CDFW

Good morning Dean,

Unfortunately a site visit before the comment letter is due is not going to happen. This project is not going to the Planning Commission until June 6th so if we can do a site visit before then, it would be great (given my supervisor's approval). Please send me some dates that would work for you if you are interested.

Best,

Cortney Flather
Natural Resources Coordinator
Planning and Building Services
707 Nevada St. Suite 5
Susanville CA 96130
Phone: (530) 251-8271

From: Tonenna, Dean <dtonenna@blm.gov>
Sent: Friday, May 5, 2023 8:07 AM
To: Depaoli, Kenneth R <kdepaoli@blm.gov>; Cortney Flather <CFlather@co.lassen.ca.us>
Subject: Re: [EXTERNAL] Geofortis site visit with CDFW

From the email trail, it looks like May 5th was a deadline of sorts. Is there still interest post May 5th for a site visit?

From: Depaoli, Kenneth R <kdepaoli@blm.gov>
Sent: Wednesday, April 26, 2023 2:01:41 PM
To: Cortney Flather <CFlather@co.lassen.ca.us>
Cc: Tonenna, Dean <dtonenna@blm.gov>
Subject: Re: [EXTERNAL] Geofortis site visit with CDFW

Hi Cortney,

I will check with Dean Tonenna, BLM botanist that worked on Geofortis, to see what his schedule is and if he can make it. I have included him on this email.

Dean to you have some time to meet at the Geofortis site to discuss the woolly buckwheat?

Thanks,

Kenneth Depaoli
Geologist
BLM Carson City District
775-885-6102

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Wednesday, April 26, 2023 10:01 AM
To: Depaoli, Kenneth R <kdepaoli@blm.gov>
Cc: Erika.Iacona@wildlife.ca.gov <Erika.Iacona@wildlife.ca.gov>
Subject: [EXTERNAL] Geofortis site visit with CDFW

Hi Ken,

Erika Iacona from the California Department of Fish and Wildlife requested a visit to the proposed Geofortis pozzolan mine before May 5th to get a better understanding of the impact the project may have on the white woolly buckwheat as well as information that will help them with the streambed alteration agreement. Is there a botanist from the BLM available to meet us out there before May 5th?

Thank you,

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Cortney Flather

From: David McMurtry <dmcmurtry@geofortis.com>
Sent: Thursday, May 18, 2023 11:00 AM
To: Cortney Flather
Cc: Lonnie Roy
Subject: RE: response to NOI MND comments by May 22nd

Cortney,
We are working to get the responses done by Monday.

As for Retention Basins, there will be none. The pits will self contain storm water with no discharge. They will only contain water temporarily after storms and will be dry most of the time. Sumps may be dug in the lower areas. If there are any sumps they are generally going to be 2:1 or will have ramps for wildlife, if any were to get into the pit.

Dave

GEOFORTIS

David McMurtry

VP Corporate Affairs

Mobile: 925-348-3535

Email: dmcmurtry@geofortis.com

www.geofortis.com

From: Cortney Flather <CFlather@co.lassen.ca.us>
Sent: Thursday, May 18, 2023 12:41:14 PM
To: David McMurtry <dmcmurtry@geofortis.com>
Cc: Lonnie Roy <lroy@broadbentinc.com>
Subject: RE: response to NOI MND comments by May 22nd

Questions to think about when describing the detention basin because it was not discussed in the Hydrology Report:

CDFW comment:

Detention Basin

The Department requests more information on the proposed detention basin. Information would include the following: proposed depth, potential water quality issues, potential impacts to wildlife, and information on whether the detention basin would dry out seasonally or be a permanent water source. The mining plan states more information is available in the Hydrology Report. The Department requests to see the Hydrology Report when it becomes available.

From: Cortney Flather
Sent: Wednesday, May 17, 2023 10:16 AM
To: David McMurtry <dmcmurtry@geofortis.com>
Cc: Lonnie Roy <lroy@broadbentinc.com>
Subject: response to NOI MND comments by May 22nd

Hi Dave,

In addition to your response to the Water Board comments and Caltrans clarification, we need to know more about that the detention basins that were mentioned in the Mining Report but were never discussed in the Hydrology Report. The California Department of Fish and Wildlife commented on the detention basin recommending a ramp for wildlife to avoid entrapment but without more information we don't know if that is necessary or not. We need a response on all the above-mentioned items by Monday, May 22nd or we will have to push the planning commission another month due to noticing requirements. Thank you.

Best,
Cortney Flather
Natural Resources Coordinator
Planning and Building Services
707 Nevada St. Suite 5
Susanville CA 96130
Phone: (530) 251-8271

From: David McMurtry <dmcmurtry@geofortis.com>
Sent: Wednesday, May 10, 2023 10:17 AM
To: Michael.Battles@dot.ca.gov
Cc: Cortney Flather <CFlather@co.lassen.ca.us>; Lonnie Roy <lroy@broadbentinc.com>
Subject: FW: Geofortis Mine Comments from Caltrans District 2 Staff

Michael,
Can you please clarify your comment on the passing lane. Do you mean that the merge back to a single northbound lane should be moved to the south by 2000 feet? Would that be done by striping and merge arrows (or also by removing pavement)?
If the answer is not simple, could you please call me at the number below?
Thank you.
Dave McMurtry

Cortney Flather

From: Iacona, Erika@Wildlife <Erika.Iacona@Wildlife.ca.gov>
Sent: Thursday, May 18, 2023 7:16 AM
To: Tonenna, Dean; Cortney Flather; Depaoli, Kenneth R
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Kenneth Depaoli
Geologist
BLM Carson City District
775-885-6102

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